

DISAGGREGATION OF TOURISM EMPLOYMENT DATA – A SCOPING PAPER

REPORT BY

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Disaggregation of tourism employment data – a scoping paper

Executive Summary

This paper has been prepared in response to a research project commissioned by Tourism Research Australia (TRA). Its purpose is to investigate the potential for expanding the range of tourism employment data beyond that currently provided in state and territory Tourism Satellite Accounts (hereafter referred to as state TSA) by developing one-off or regular estimates of work force characteristics such as full-time equivalent (FTE), part-time and casual tourism employment.

The paper identifies two opportunities for possible disaggregation of the existing state and territory employment data. These are the provision of estimates of full-time (F/T) and part-time (P/T) tourism employment, and the estimation of tourism hours worked.

An opportunity for a possible one-off experimental study to examine age and gender characteristics in tourism employment, drawing on Census of Population and Housing data, is also identified.

The state TSA currently provides estimates of tourism industry employment by total number of employed persons. This is consistent with the approach adopted in the national Australian TSA (ATSA) against which the state TSA is benchmarked.

There is a need for more extensive data on tourism industry employment to facilitate better understanding of the structure of the tourism industry and support policy making by governments on issues affecting the industry. In particular, this would assist analysis of tourism factor productivity, which is important for assessing industry performance, future trends and possible constraints to growth.

Revised industrial classifications—Australian and New Zealand Standard Industry Classification (ANZSIC) 2006—were used by the Australian Bureau of Statistics (ABS) in establishing the 2006–07 ATSA benchmark and incorporated into the 2008–09 ATSA. This has made it possible to achieve an improved concordance at the three digit ANZSIC industry level between industry production data in the ATSA and the ABS Labour Force Survey (LFS); the principle source of national and state employment statistics. This opens the way to access information from the LFS on F/T and P/T employment and employee hours worked which is consistent with, and potentially of sufficient reliability, for inclusion in TSA estimates.

Subject to acceptable standard errors, the ABS is planning to introduce new estimates of F/T and P/T tourism employment (back cast to 1997–98) in its 2010–11 ATSA for release in December 2011. Furthermore, during 2011–12, the ABS proposes to review the benchmark employment data in the ATSA, including the need for alternative sources to replace its now discontinued Service Industry Surveys (SIS). The review will include an investigation into the methodology and sources for deriving tourism employment and explore differences in growth patterns between tourism Gross Value Added (GVA) and tourism employment. Recommendations from the review will be incorporated into the 2011–12 ATSA scheduled for release in mid-2013.

A core objective of the state TSA is to achieve the maximum level of consistency with the national level estimates provided in the ATSA and the international TSA standards. Therefore, the same methodological approach, definitions and data sources have been used wherever possible when developing these estimates.

Disaggregation of tourism employment estimates into F/T and P/T is now, in principle, possible at the state and territory level using the ANSZIC 2006 data. Time constraints and the importance of consistency with the approach to be adopted in the 2010–11 ATSA suggest that it would be desirable to incorporate these enhancements in the 2010–11 state TSA scheduled for release mid-2012, rather than in the upcoming 2009–10 state TSA release.

As part of its 2011–12 review, the ABS intends to investigate the disaggregation of national employment estimates to provide information on total hours worked by tourism employment industry. The recommendations from the review are likely to be implemented in the 2011–12 ATSA scheduled for release in mid-2013. This information should not be considered for inclusion in the state TSA until after the ABS finalises its position, in order to ensure a consistent approach at the state and territory level to that adopted by the ABS nationally. This would suggest incorporation into the 2011–12 state TSA report at the end of 2013.

There may be opportunities for TRA to commission one-off research studies to examine specific employment characteristics in relation to segments of tourism employment using one or more additional data sets. The Census of Population and Housing offers the most promise for providing labour force information that could be used to develop additional employment disaggregations. However, there are differences between the Census data and the LFS data on which TSA employment estimates are based, thus data reconciliation remains a challenging task. The possibility of carrying out an initial one-off experimental study, drawing on the Census data to develop breakdowns of, for example, age and gender in relation to tourism employment could be examined.

The Scoping Study did not identify any other options for further disaggregations of the TSA employment estimates, which are likely to provide a sufficient level of consistency with the existing state TSA and ATSA estimates, or have the required degree of reliability.

Recommendations

The following recommendations are proposed for the introduction of further disaggregation of the tourism employment estimates currently provided in state TSA reports:

- (a) Introduce estimates of F/T and P/T employment by tourism industry into the 2010–11 state TSA report, using an approach consistent with the national estimates expected to be incorporated in the 2010–11 ATSA. It would be desirable to also establish historical trends by back casting F/T and P/T estimates in this release although this is likely to be a resource and time intensive task and will need to be addressed in the context of the resources available for the 2010–11 report.
- (b) Consider including measures of hours worked in the state TSA estimates in light of the recommendations which emerge from the ABS 2011–12 review. Subject to the recommendations of the review, and any decision to incorporate data on tourism hours

- (c) That TRA consider the possibility of studies to derive additional information on the characteristics of tourism employment drawing on data sets beyond the LFS, including the Census of Population and Housing. These could be considered in light of the conclusions and recommendations of the ABS 2011–12 review.

Disaggregation of tourism employment data – a scoping paper

1. Introduction

This paper has been prepared in response to a research project commissioned by TRA. Its purpose is to investigate the potential for expanding the range of tourism employment data beyond that currently provided in the state TSA, by developing one-off or regular estimates of work force characteristics such as full-time equivalent (FTE), part-time and casual tourism employment. The report identifies two particular opportunities for possible disaggregation of the existing state and territory employment data. These are:

- The provision of estimates of F/T and P/T tourism employment; and
- The estimation of tourism hours worked.

An opportunity for a possible one-off experimental study to examine age and gender characteristics in tourism employment, drawing on Census of Population and Housing data, is also identified.

2. Need for Additional Information on Tourism Employment

State TSA reports have been produced by the Centre for Economics and Policy (CEP) for the Sustainable Tourism Cooperative Research Centre (STCRC) for the years 2003–04, 2006–07 and 2007–08, and for TRA for the year 2008–09. These TSA data provide estimates of tourism industry employment by total number of employed persons¹. No further disaggregation of the data on tourism employment is currently provided at the state and territory level.

This follows the practice adopted by the ABS in the ATSA against which the state TSA reports are benchmarked. The credibility of the state TSA lies in its consistency with the ATSA, which is also an important anchor underpinning the methodological framework, data and presentation of results.

The need for a range of enhanced employment data on the tourism industry is seen as an important step in gaining a better understanding of the employment structure of the tourism industry and for policy making by governments on issues affecting the industry. This partly reflects a particular concern about the impact of the special characteristics of a number of sectors of the tourism industry, especially the *Accommodation* and the *Cafes and Restaurants* sectors. These sectors are characterised by being relatively labour intensive with large numbers of low skilled, part-time, casual and seasonal employees.

More detailed information on tourism employment is also seen as particularly important for improving and expanding the tourism industry factor productivity estimates produced by

¹ The number of tourism employed persons is derived by multiplying the number of employed persons in each industry by the proportion of the total output of that industry which is related to tourism. An employed person is a person aged 15 years and over who worked for one hour or more during the reference week of the relevant Labour Force Survey. For additional detail see the Explanatory Notes and Glossary to the ABS Tourism Satellite Account, Cat 5249.0.

TRA, contributing to greater capacity to analyse issues surrounding labour, investment, productivity, innovation and profitability in relation to the industry. Critical to this is the information on labour inputs by Australian and New Zealand Standard Industry Classification (ANZSIC) industry, which can be related to output measures including Gross Value Added (GVA) in a rigorous and consistent manner. This would contribute to assessment of tourism industry performance, trends and potential constraints to future growth in the context of the National Long-Term Tourism Strategy (The Strategy).

3. ABS Work Plan on Tourism Employment

As an extension to its agreement with the Department of Resources, Energy and Tourism (RET) for the production of the ATSA, in June 2011 the ABS made two important commitments which relate to the issue of enhancing tourism employment data. These were:

- a) For its 2010–11 ATSA, which the ABS expects to release in December 2011, it proposes to expand the employment data to include estimates of F/T and P/T employment.
- b) During 2011–12, the ABS proposes to undertake a thorough review of the benchmark employment data in the ATSA, including the need for alternative sources to replace its now discontinued SIS². They also propose to undertake further investigations into the methodology and sources for deriving tourism employment and an exploration of differences in growth patterns between tourism GVA and tourism employment. Recommendations from the review are to be incorporated into the 2011–12 ATSA which the ABS expects to release in mid-2013.

The ABS' review will also address issues in relation to improving the quality of the industry employment estimation process, such as how to deal with concerns about seasonality in relation to the tourism employment estimates (ABS 2006a). In particular, any tendency for tourism employment over the Christmas period to be inadequately reflected in the LFS data would exert a downward bias in estimates for tourism industry employment, requiring some form of adjustment to the data to take account of this effect.

4. Recent Developments

Two important developments in relation to this work have been first, discontinuance of the SIS for the *Accommodation, Cafes & Restaurants, Pubs, Taverns and Bars*, and *Gambling* industries. The SIS surveys previously made an important contribution in the development of the ABS benchmark TSA employment estimates. The second development has been the introduction of revised ANZSIC (ANZSIC 2006) industry data to develop the 2006–07 ATSA benchmark and the 2008–09 ATSA released in June 2010. The use of ANZSIC 2006 has made it possible to achieve improved accuracy in the mapping of data, down to the three digit ANZSIC industry level, between the LFS employment industries and the product and industry classifications used in the TSA.

The loss of the SIS data sets will impact on the setting of benchmark employment estimates for the four tourism employment industries involved in preparing the ATSA, which will be an important focus of the ABS 2011–12 review. However, the availability of the improved

² The SIS previously provided a valuable indicator of tourism employment and related data for use in establishing benchmark estimates.

concordance between the ANZSIC 2006 and LFS industry data may offset this issue to some degree.

The opportunity for an improved concordance between the LFS and ANZSIC/TSA industry classifications will facilitate the splitting of tourism employment estimates into F/T and P/T employment, which the ABS is now proposing to include in its 2010–11 ATSA. It also opens the way to utilising data on hours worked by industry from the LFS to produce estimates of hours worked by tourism industry. The ABS proposes to investigate this option as part of their review to be carried out during 2011–12 [see (b) above].

5. State & Territory Level TSA Employment Estimates

A core objective of the state TSA reports produced by the CEP has been achieving the maximum possible level of consistency with the ATSA produced at the national level by the ABS. This has been seen as critical to the ongoing credibility of state TSA estimates. Therefore, the same overall framework, methodological approach, definitions and data sources have been used wherever possible when developing the state estimates. In practice, some adjustments are made at the state level to take account of the existence of interstate trade in tourism goods and services, and of the considerable constraints which arise from the more limited data available at the state and territory level than is the case nationally.

The methodology used for the state and territory tourism employment estimates is set out in detail in Annex B to the 2003–04 state and territory TSA reports available on the STCRC website³.

In essence, the number of employed persons in the state TSA is estimated through two stages. First, the proportion of industry output that serves tourism demand is derived using the tourism intensity ratio. In the second stage, the ratios of employment to output are derived for all industries using the MMRF⁴ database provided by the Monash University Centre for Policy Studies (CoPS). Applying these employment-output ratios to the tourism output derived in the first stage provides estimates of the number of employed persons for tourism components of all conventional industries. The sum of these employed persons gives the total employed persons for the tourism sector.

Following completion of the preliminary state TSA estimates, a reconciliation is carried out to ensure that the sum of all of the state and territory TSA results is consistent with the relevant year ATSA estimate. This involves adjusting the sum of state and territory tourism industry employment to ensure that it matches the equivalent aggregate Australian tourism industry estimates published in the ATSA.

³ See, for example, Ho et al (2008)

⁴ Adams 2008

This approach assumes that the share of jobs in each industry which is attributable to tourism (the tourism employment ratio), is the same as the share of total domestic output of that industry which is attributable to tourism in each state/territory as identified in the state TSA output estimates.

At the national level, up to and including the most recent 2006–07 ATSA benchmark, the ABS was, until recently, able to utilise SIS data as a quality control check to refine their tourism employment estimates for the *Accommodation, Cafes and Restaurants, Pubs, Taverns and Bars*, and *Gambling* industries. These data sources were not directly drawn on in developing the state TSA estimates. They were, however, picked up to some extent in the reconciliation of the state TSA estimates against the ATSA.

6. Disaggregating Tourism Employment Data at the State & Territory Level

In principle, it should now be possible—using the ANZSIC 2006 industry classification data—to establish a reliable concordance with LFS employment industry data, which are available at three digit ANZSIC industry level by state and territory. This opens the way to some further disaggregation of the tourism employment data currently provided in the state TSA reports.

The LFS provides two sets of additional information which could be utilised for either one-off studies, or incorporated into future state TSA reports on an ongoing basis. These relate to F/T and P/T shares of tourism employment and to tourism hours worked. In both cases the estimates will be subject to relative standard errors (RSEs). The ABS proposes to investigate these in the context of national level estimates. RSEs may also prove to be an issue at the state and territory level – particularly for the smaller states and territories and for certain tourism industries where the sample numbers are small. However, if large RSEs or unusual results are encountered in developing the estimates, it should be possible to deal with the problem through adjustments to the data or, alternatively, by identifying estimates of questionable reliability as “not publishable”.

The possibility of deriving estimates of actual and usual hours worked by tourism employment industry could be used to estimate average hours worked by TSA employment industry. The ABS proposes to investigate the options for providing hours worked data as part of their 2011–12 review with a view to possibly introducing hours worked estimates into its 2011–12 benchmark ATSA, due for release in mid-2013.

The Scoping Study also considered options for deriving other breakdowns of the employment data to provide information on, for example, casual employment, gender, age or earnings. The range of alternative data sets has been narrowed by the loss of the SIS surveys, which previously provided more detailed supply side information on four important tourism industry categories. In its absence, the ABS Census of Population and Housing is the most obvious source, which could be used in conjunction with LFS data to provide additional labour force information of this kind.

There are some significant differences between the Census and the LFS, which currently provides the core data on employment for the ATSA and state TSA reports. Despite these, it seems possible that useful estimates of tourism employment characteristics could be derived drawing on the Census data. These might best be addressed by a one-off experimental study

which could inform a decision on whether such estimates should be confined to separate studies or whether it may be possible to incorporate them into the regular state TSA reporting process.

It is also possible that the review to be carried out by the ABS in 2011–12, will identify alternative options in addition to those referred to in this study. These would need to be explored in the light of the conclusions of that review.

7. Full-time and Part-time Employment Disaggregations

Using the ANZSIC 2006 industry classifications and the LFS state and territory data to develop estimates of P/T and F/T employment at the state and territory level would require the development of a further concordance with the MMRF data which is currently used to produce the state and territory estimates. This would require development of new procedures for the TSA estimation process with a concurrent demand for additional research time. Further, results should be presented in a consistent fashion with that to be adopted by the ABS in its 2010–11 TSA due for release in December 2011.

While possible, introducing F/T and P/T estimates into the 2009–10 state TSA (due for release in the second half of 2011), would raise two sets of issues. First, given the relatively tight time frame likely to be available for completing the 2009–10 state TSA report, it would stretch the research resources available and possibly add at least several weeks to the preparation time for the state TSA report. Second, and critically, moving ahead of the incorporation of these estimates into the ATSA itself would risk inconsistency with ATSA in relation to method and presentation of the data, and lead to the absence of national estimates against which the state estimates can be reconciled. Any subsequent need for revisions to these estimates at the time of the 2010–11 state TSA—which would then be following publication of the equivalent ATSA estimates—would involve further research time and a possible need for back casting of a revised approach in order to ensure comparability with the 2009–10 F/T and P/T ATSA estimates. This would have consequences for the resourcing of the state TSA work and potentially for the ongoing credibility of the state TSA estimates.

These considerations argue for introduction of the F/T and P/T estimates at the state level to follow, rather than precede their December 2011 introduction in the ATSA, as part of the 2010–11 state TSA report.

It would be desirable to also establish historical trends by back casting the F/T and P/T estimates. This is, however, a resource and time intensive task and would thus need to be addressed in the context of the resources available for the 2010–11 report. It is hard in a scoping study to provide time estimates for this task as this will depend on the quality of data across different sources – where data are not consistent reconciliation of the data sets will be more difficult and consequently more time consuming.

8. FTE or Hours Worked Disaggregation.

The introduction of estimates of full-time equivalent (FTE) employment for tourism raises significant data and conceptual issues. Options for establishing a conversion from hours worked data to FTEs might range from the adoption of a notional number of hours worked, such as a thirty seven hour week, to a simple rule of thumb conversion of the kind used in the early Queensland TSA reports, where two tourism industry jobs were assumed to equal one

tourism FTE (OESR 2006). We understand that following initial consideration, the ABS has decided not to proceed with exploring the development of Tourism FTE estimates by industry.

Differences in concepts of what constitutes an FTE from one industry to another make the aggregation of FTEs across a number of industries, such as would be required for a Tourism FTE, problematic. In addition, because the TSA does not measure individual jobs in tourism industries as such, but rather arrives at its estimates on the basis of labour intensities for generating industry output, in many cases what is measured as a tourism industry job will actually represent only a part of the total work of an employee. Consequently, the contribution of a given number of tourism jobs to the economy does not mean that this number of jobs can be individually identified. Rather, the total number of tourism employed persons represents a notional sum made up of often small proportions of jobs in a range of industries serving the tourism purpose. For example, if a shop employs 8 people and 20 per cent of its activity is due to visitor expenditure, then this shop is estimated to contribute 1.6 tourism employees to the *Wholesale trade* and *Retail trade* industries (BTR 2001).

Even within what might normally be regarded as tourism businesses considerable variation would exist. The usefulness of an FTE measure based on hours worked would be especially questionable for industries such as *Cafes and Restaurants, Accommodation, Pubs, Taverns and Bars, and Clubs (Hospitality)*, where unusual working hours and casual employment arrangements are commonplace.

This raises questions about the meaning and usefulness of estimates of FTE employment in the context of the TSA. While FTE is a widely used measure in other contexts, conceptually it becomes less meaningful in the context of the job estimation technique used for the TSA. It seems likely, therefore, that a variation on total hours worked or average hours worked will prove a more rigorous and useful indicator for the tourism industry.

While the introduction of hours worked measures into the state TSA involves similar issues (in principle) to those for F/T and P/T employment outlined in the previous section, the conceptual treatment, methodology and presentation of the data involve additional complications. RSEs for certain industries may also prove to be more challenging.

At the state and territory level, similar considerations of resource allocation and consistency with the ATSA point to deferring introduction at the state and territory level until 2013 at least, following their possible release in the 2011–12 ATSA. Further, if estimates are introduced into the state TSA reports in what proves to be an inconsistent manner from that subsequently adopted by the ABS, the results will potentially need to be back cast at considerable cost in terms of research resources.

A one-off preliminary or experimental study of tourism hours worked at the state level could, however, be considered, should these estimates be considered to be urgent and if adequate research resources are available.

Such a study could be used to support further investigation of how total tourism hours worked data could be used in conjunction with TSA output and/or employment estimates to develop indicators for tourism labour productivity. While in principle it should be possible to

develop such indicators, it would be necessary to resolve issues such as the lengthy time lag between updates of the Census data which would require the use of the same "shares/structure" over many TSA-years, meanings that composition changes may not be reflected well in the tourism employment estimates.

9. Other Employment Disaggregations

Alternative data sets which provide information relevant to tourism employment include the:

- ABS Census of Population and Housing
- ABS Economic Activity Survey(s) (EAS)
- SIS (now discontinued) for specific tourism industries

Other possible sources are the ANZSCO Tourism and Hospitality sector Occupational grouping, or ABS' average weekly earnings data.

Among these data sources, the Census of Population and Housing offers the most relevant data for providing labour force information that could be used to develop additional employment disaggregations. However, as for the other sources, there are a range of differences between the LFS and the Census in terms of, for example, scope, coverage, timing, approach to handling non-response, and measurement of underlying labour force concepts and collection methodologies which raise difficulties in integrating the two data sources.

Because the Census data is only updated every five years it would be necessary to use the same "shares/structure" over the intervening TSA years meaning that composition changes would not be reflected well in tourism employment estimates over time. Ways of extrapolating data between Censuses would therefore need to be examined.

Benchmarking is another important issue. If Census of Population and Housing data were incorporated into the estimation process for the state TSA reports in isolation from similar action at the national level, there would be an inability to benchmark the state estimates directly against the ATSA and an absence of any direct and consistent foundation for these estimates in the ATSA itself.

In principle, it would be possible to carry out an initial one-off experimental study drawing on the Census data to develop breakdowns of, for example, age and gender of tourism employment. Such a study could be done separately from the regular state TSA reporting process but used to provide baseline estimates which could inform analysis of tourism employment issues. The results of such a study might also assist in addressing how frequently such estimates should be updated, e.g. would it be sufficient to align such updates with the Census five year cycle, or is the data considered robust enough for incorporation into the regular state TSA reporting process?

A decision to proceed with such an initial study might best be made following release of the ABS 2011–12 review in order to ensure that any recommendations from this are taken into account. This timing would also be consistent with use of data from the 2011 Census. Relevant 2011 Census data is expected to become available during June and October 2012.

10. Tourism Employment at Regional or Sub-state Level

A further issue for consideration is the possibility of providing estimates of tourism employment at the regional or sub-state level. This was done for 12 tourism regions in Queensland in a study published by the STCRC (Pham et al 2010). While this analysis could be extended to estimate employment at the sub-state level across states and territories, a considerable amount of time and resources would be required to do this.

Estimating tourism employment at the sub-state level is almost half-way to estimating a sub-state TSA for each region. Depending on the number of sub-state tourism regions included, the time and resources required for this task could be significantly greater than that required to develop the state TSAs. Extension to the sub-state level would need to follow development completion of the state TSA to enable benchmarking of the estimates against those for the states. Sub-state TSA data development is significantly constrained by the lack of explicit trade flows data by commodity between sub-state regions. The approach envisaged for estimating regional (sub-state level) tourism employment would be the one adopted in producing the Queensland regional TSA (Pham et al 2010). This involved using fixed shares of trade flows from the TERM⁵ database in order to achieve consistent patterns of employment across sub-state regions over time.

While the Census provides good quality data on employment at the sub-state level, it only identifies employment in tourism businesses. In contrast, a TSA includes all employment directly attributable to visitor demand including that from non-tourism businesses which provide services to visitors. Among other differences, the Census identifies employees by location of residence rather than place of work which can be expected to give misleading results for certain tourism regions, and particularly for urban centres, where employees are likely to commute from another place of residence.

It remains possible that the ABS 2011–12 review may identify one or more further options which have been overlooked in this scoping study, or which, if they were to be incorporated into the ATSA benchmarking process in the future, would warrant further investigation.

11. One-off or Regular Estimates

From the foregoing discussion, disaggregation of state and territory level employment data would appear to be possible for F/T and P/T employment and for hours worked by tourism industry, although in both cases issues of data quality have not yet been fully investigated at either the national or state and territory level. It is possible that problems will arise for certain tourism industries where the sample sizes are more limited, including in the context of smaller states or territories. It is likely that these can be addressed by adjustments to the data or, in some cases, by identifying particular industry estimates for some states as not publishable because of issues of data reliability.

The development of both F/T and P/T employment and hours worked based estimates identified here could be implemented as one-off research projects or incorporated into the ongoing state TSA research framework. Subject to these estimates being incorporated into the ATSA itself, the level of demand from stakeholders, suitable data quality as reflected in

⁵ TERM is a CGE at sub-state level. TERM was constructed by the Centre of Policy Studies at Monash University.

RSEs, and adequate staff resources being available for producing the state TSA, a good case appears to exist for incorporating these estimates into the ongoing state TSA report process.

While other tourism employment data disaggregation options could be investigated, for example as possible one-off research projects, each of these present difficulties of one kind or another in relation to incorporation into the ongoing state TSA report framework. At this stage, the most promising avenue for further analysis appears to be the Census of Population and Housing.

12. Recommendations

The following recommendations are proposed for the introduction of further disaggregation of the tourism employment estimates currently provided in state TSA reports:

- a) Introduce estimates of F/T and P/T employment by tourism industry into the 2010–11 state TSA report, using an approach consistent with the national estimates expected to be incorporated in the 2010–11 ATSA. It would be desirable to also establish historical trends by back casting F/T and P/T estimates in this release, but this is a resource and time intensive task, which will need to be addressed in the context of the resources available for the 2010–11 report.
- b) Consider including measures of hours worked in the state TSA estimates in light of the recommendations which emerge from the ABS 2011–12 Review. Subject to the recommendations of the Review, and any decision to incorporate data on tourism hours worked in the 2011–12 ATSA, plan to introduce such estimates in the 2011–12 state TSA report , for release in late 2013.
- c) TRA to consider the possibility of studies to derive additional information on the characteristics of tourism employment, drawing on data sets beyond the LFS, including the Census of Population and Housing. These could be considered in light of the conclusions and recommendations of the ABS 2011–12 review.

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