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SURVEYING ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLES: STRATEGIES AND METHODOLOGIES OF THE AUSTRALIAN BUREAU OF STATISTICS

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ABSTRACT

Cultural considerations, the geographical location of Aboriginal and Torres Strait Islander (Indigenous) peoples and policy requirements influence the statistical activity of the Australian Bureau of Statistics (ABS) with regards to Australia's Indigenous population. Drawing on material presented in the 2004-05 ABS Annual Report, this paper situates Indigenous surveys within the broad context of ABS Indigenous statistical activity that features an expanding program of engagement with Indigenous communities. The paper discusses survey design, operations and output activities with reference to the 2002 National Aboriginal and Torres Strait Islander Social Survey and the 2004-05 National Aboriginal and Torres Strait Islander Health Survey.

KEYWORDS: Aboriginal; Australian Bureau of Statistics; Engagement; Indigenous; Remote; Sample Design; Statistics; Survey; Torres Strait Islander.

1. INTRODUCTION

Cultural considerations, the geographical location of Aboriginal and Torres Strait Islander (Indigenous) people and policy requirements influence the statistical activity of the Australian Bureau of Statistics (ABS) with regards to Australia's Indigenous population. The ABS endeavours to address cultural issues through an expanding program of engagement with Indigenous organisations and communities. The relatively small size and highly dispersed location of the Indigenous population raises challenges for data collection. In the large cities, where Indigenous people represent only 1% of the total population, the ABS undertakes an extensive and targeted screening process to achieve desired sample takes. In remote areas, where Indigenous people often live in discrete communities, survey activity focuses on engagement with these communities and the logistics of survey operations. Policy requirements for reliable data that accurately measure the socioeconomic characteristics of the Indigenous population, track changes across time and provide comparisons with the wellbeing of the non-Indigenous population place a strong emphasis on the quality of outputs from Indigenous collections.

Drawing on material presented in the 2004-05 ABS Annual Report (ABS 2004a), this paper situates Indigenous surveys within the broad context of ABS Indigenous statistical activity that also encompasses ongoing census activities, collaboration with other agencies in the development of better quality administrative collections and continued improvements in population estimates. In addition, ABS continues to expand its program of engagement with Indigenous communities. The paper discusses survey design, operations and output activities with reference to the 2002 National Aboriginal and Torres Strait Islander Social Survey and the 2004-05 National Aboriginal and Torres Strait Islander Health Survey.

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2. A BRIEF DEMOGRAPHIC PROFILE OF THE INDIGENOUS POPULATION

The Aboriginal and Torres Strait Islander population of Australia was estimated at 458,500 people at 30 June 2001 and projected to have grown to between about 480,000 and 510,000 by mid 2004. In 2001, Indigenous people represented 2.4% of the total population of 19.4 million (ABS 2004b). Among Indigenous people, 90% identify their Indigenous origin as Aboriginal, 6% identify as Torres Strait Islander and 4% identify as both Aboriginal and Torres Strait Islander (ABS, 2003).

About 30% of Indigenous people live in the major cities of Australia, 43% in regional areas and 27% in remote areas. The non-Indigenous population is much more highly urbanised and, as a result, the proportion of Indigenous people in the total population is very low in major cities (1%), just above the national average in regional areas (3%) and high in remote areas (24% in remote areas overall and 45% in the very remote component) (ABS, 2003).

The Indigenous population has a much younger age structure than the total population with a median age of 20.1 years compared with 36.1 years. This is a result of higher fertility (and paternity – i.e. births to non-Indigenous mothers where the father is of Indigenous origin) and higher mortality. The total fertility rate for the Indigenous population is 2.15 compared with 1.75 for the total population (ABS 2004c). Life expectancy at birth for Indigenous males is 59 years compared with 77 years for the total Australian male population and 65 years for Indigenous females compared with 82 years for all females (ABS 2004c).

3. THE ABS INDIGENOUS STATISTICS STRATEGY

Over the past ten years there has been a significant improvement in the range, quality and availability of statistics on Australia's Aboriginal and Torres Strait Islander peoples, and an increasing number of organisations have become involved in collecting, compiling and analysing Indigenous statistics. Some of the improvements involving the ABS include:

- improvements in the quality of information about Indigenous people from the five-yearly population census
- new household surveys of the Indigenous population, including regular surveys on health and social circumstances
- the inclusion of an Indigenous identifier in appropriate ABS household surveys, including the monthly Labour Force Survey
- the conduct of the Community Housing and Infrastructure Needs Survey in both 1999 and 2001
- progressive implementation of consistent standards of Indigenous identification in administrative datasets
- improved availability of Indigenous population estimates and projections

3.1 Census of Population and Housing

The five-yearly census remains the centrepiece of the ABS Indigenous statistics work program, providing the basis for estimates of the Indigenous population and a wide range of socioeconomic statistics, such as housing, income, employment, education and language at all levels of geography.

All censuses from 1986 onwards have been supported by a special Indigenous Enumeration Strategy aimed at improving census awareness, forms design and field procedures to facilitate effective enumeration of Aboriginal and Torres Strait Islander Australians, particularly those living in remote areas. The 2001 census employed about 1,600 Indigenous people (over 5% of all census field staff). The development of the 2006 Indigenous Enumeration Strategy is being guided by a working group comprising experts from Indigenous organisations, Australian and state/territory government agencies, research organisations and practitioners in Indigenous data, field procedures and protocols.

3.2 Indigenous household surveys

Following the 1998-99 review of its household survey program and after specific consultation on the collection of Indigenous data, the ABS has progressively introduced a six-yearly Indigenous social survey and a six-yearly Indigenous health survey. Both surveys are designed to produce national and state/territory level estimates, and cover remote and non-remote areas of Australia.

The National Aboriginal and Torres Strait Islander Social Survey (NATSISS) will monitor the socioeconomic circumstances of Indigenous people over time and, in conjunction with the regular General Social Survey, provide comparisons with the wellbeing of the non-Indigenous population. The 2002 NATSISS was designed to have about 50% content overlap with the groundbreaking first national survey of Australia's Indigenous population, the 1994 National Aboriginal and Torres Strait Islander Survey. Initial results from the 2002 NATSISS covered topics as diverse as family and culture, health, disability, education, work, income and housing, law and justice, and transport.

The National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) coincides with every second cycle of the three-yearly ABS National Health Survey. These surveys are supported through funding from the Australian Government Department of Health and Ageing under a partnership agreement with the ABS. Development of the 2004-05 NATSIHS has been completed and the survey is being enumerated between August 2004 and July 2005. The 2004-05 NATSIHS has significant content overlap with both the 2004-05 National Health Survey and the Indigenous over-sample to the 2001 National Health Survey. It also contains a new module on social and emotional wellbeing (adult respondents only) and expanded content in oral health, kidney disease and discrimination.

3.3 Other ABS household surveys

The ABS monthly Labour Force Survey (LFS) incorporates an Indigenous identifier to enable Indigenous results to be produced. The sample for this survey is based on rotation groups that are in the survey for eight consecutive months. By combining results for Indigenous respondents over a 12-month period, sufficient observations are obtained to produce national and state/territory estimates. Other ABS social surveys, such as the General Social Survey and National Health Survey, also include the Indigenous identifier to enable non-Indigenous results to be compiled for comparison with data for the Indigenous population collected in the Indigenous social and health surveys.

3.4 Community Housing and Infrastructure Needs Survey

The ABS conducted the Community Housing and Infrastructure Needs Survey in 1999 and 2001 on behalf of and with full funding from the then Aboriginal and Torres Strait Islander Commission. The Department of Family and Community Services, which now has responsibility for Indigenous housing policy and programs at the national level, will provide funding for the 2006 survey. This survey collects information from Indigenous Housing Organisations and discrete Indigenous communities across Australia. From Indigenous Housing Organisations, It collects information on housing stock, dwelling management and selected income and expenditure arrangements. Information collected from discrete Indigenous communities includes characteristics of power, sewerage and water supply infrastructure, and the availability of education, health and other services.

3.5 Administrative data

Data from government administrative collections are an important source of information not only about program performance but also about the circumstances of the people interacting with service providers. The quality of information about Indigenous people derived from these collections depends, in part, on the quality of the identification of Indigenous people in those systems. The ABS is working with relevant agencies through multilateral processes, such as the National Indigenous Housing Information Implementation Committee, to improve the standards for, and quality of, information derived from the various administrative systems.

Several years ago the ABS introduced its Indigenous Administrative Data Project to target improvements in a range of administrative datasets by working bilaterally with agencies and others in each jurisdiction. The cooperation of state and territory agencies, and their enthusiasm to engage with the ABS project and extend its reach have been instrumental in progress to date. This data project focused initially on births and deaths registrations and hospital

separations with resulting improvements in the completeness of Indigenous data from these systems. More recently the project has widened in scope to include work with a range of agencies, such as police and courts, to encourage and facilitate the implementation of the ABS standard Indigenous identifier in a number of other important datasets.

3.6 Demography

The ABS Demography program maintains a strong focus on, and commitment to, improving the availability and quality of Indigenous population estimates and projections, and vitals statistics. While the range and quality of both population and vitals statistics have improved over the past decade, in part due to efforts to improve the source data (for example through the Indigenous Administrative Data Project) and in part through improving methodologies, further work is required to better meet key user needs. The ABS continues to work with the Australian Institute of Health and Welfare and other expert advisers, including representatives from the National Advisory Group on Aboriginal and Torres Strait Islander Health Information and Data, on Indigenous mortality data developments, and in particular on assessing whether or not Indigenous mortality trend data can be produced from currently available information.

4. ENGAGEMENT

The ABS undertakes a range of activities to engage with Indigenous communities and organisations. These include participating in peak Indigenous policy forums, conducting survey reference groups and employing Indigenous engagement managers to coordinate statistical activities with Indigenous communities.

4.1 Engagement during survey operations

In addition to ongoing advice from peak advisory groups, specific advice for the 2002 NATSISS (Indigenous social survey) was sought from a reference group comprising Indigenous experts and representatives from Indigenous organisations, government agencies and academia. Consultation for this survey was very extensive with information papers being sent to many organisations including a wide array of Indigenous bodies. In order to increase access to the consultative process, meetings were held across Australia to discuss proposals for the survey and seek feedback. Focus group discussions involving Indigenous people were used in further refining survey content, followed by survey testing in both urban and remote areas.

Similar consultative processes guided overall development of the 2004-05 NATSIHS (Indigenous health survey). In addition, development of a new module on social and emotional wellbeing was undertaken in partnership with both the peak National Aboriginal Community Controlled Health Organisations and the Australian Institute of Health and Welfare. The resulting module incorporates elements from a number of different sources, including the Kessler psychological distress scale, SF-36 and the American Indian Service Utilisation, Psychiatric Epidemiology, Risk and Protective Factors Project. This successful collaboration was a short-term development to address a high priority need for information in this area of Indigenous health, pending completion of longer-term research into the most appropriate instruments and collection methods.

ABS fieldwork conducted in discrete Indigenous communities involves consultation with community councils and the employment of local community members as facilitators. In some cases, Indigenous people have been newly recruited to the permanent ABS household interviewer panel.

4.2 Community engagement

The ABS is currently implementing an initiative to further improve the data reporting and feedback from Aboriginal and Torres Strait Islander peoples. Following investigation of similar initiatives in Canada, the United States of America and New Zealand, the ABS is enhancing its Indigenous Community Engagement Strategy by recruiting state/territory based Indigenous engagement managers to:

- provide an ongoing communication channel with communities (both discrete communities and community groups)
- engage in Indigenous enumeration in the census, in ABS Indigenous surveys and, for discrete communities, in the ABS Monthly Population Survey
- undertake consultation and follow-up in regard to business surveys
- provide a 'mentor' in ABS regional offices for Indigenous staff, such as Indigenous cadets or Indigenous people recruited to the ABS permanent household interviewer panel or as census collectors
- undertake a dissemination role, returning information to communities and Indigenous organisations in their preferred format and in ways that support the use of statistics for their own purposes.

The strategy also provides resources to develop more appropriate material to support Indigenous communities and organisations to access and use statistical information.

5. SURVEY DESIGN AND OPERATIONS

The Indigenous social and health surveys are designed to provide reliable estimates at the national level and for each of the eight Australian states and territories. In addition, the Torres Strait Islander population is over-sampled in order to produce data for the Torres Strait Area and the remainder of Queensland. The sample is spread across the states and territories in order to produce estimates that have a relative standard error (RSE) of no greater than 20% for characteristics that are relatively common in the Indigenous population, say that at least 10% of the population would possess.

Indigenous surveys incorporate two broad samples that together cover all areas of Australia. The first is a sample of discrete Indigenous communities predominantly in remote areas and the second is a sample of dwellings in major cities, regional and remote areas. Not all discrete Indigenous communities are included in the community sample. These samples for community and so-called non-community areas are designed separately with each involving a multistage sampling process. Both samples are area-based and not derived from lists of Indigenous persons or dwellings obtained from other sources, such as the census or administrative collections. Each state/territory has its own balance of community and non-community sample depending on geographic and population characteristics. The following sections illustrate sample design and data collection methods with reference to the 2002 NATSISS.

Table: Sample information, 2002 National Aboriginal and Torres Strait Islander Social Survey (a)

	<i>Proportion of national Indigenous population aged 15 years and over</i>	<i>Indigenous as a proportion of total population (approx) (b)</i>	<i>Sample size</i>	<i>Sample fraction</i>
Remote				
Community	17%	95% (c)	2,100	4.4%
Non-community	10%	19%	2,000	6.8%
<i>Total remote</i>	<i>27%</i>	<i>37%</i>	<i>4,100</i>	<i>5.3%</i>
Non-remote				
Major cities	31%	1%	1,500	1.7%
Regional areas	42%	3%	3,750	3.2%
<i>Total non-remote</i>	<i>73%</i>	<i>1%</i>	<i>5,250</i>	<i>2.6%</i>
Total	100%	2%	9,350	3.3%

Footnotes: a. Based on final, i.e. responding, sample; b. based on benchmarks for 2002 General Social Survey; c. indicative only. *Source:* 2002 National Aboriginal and Torres Strait Islander Social Survey

5.1 Remote area sample

The 2002 NATSISS sample in remote areas comprised 2,100 persons from community areas covered by the Indigenous Community Frame and 2,000 persons from non-community areas. Design of the non-community sample in remote areas was part of the overall design of the non-community sample (see next section).

The community sample was obtained from a random selection of discrete Indigenous communities (including associated out-stations – i.e. smaller groupings that are culturally associated with the main community and use its services) in Western Australia, South Australia, Queensland and the Northern Territory using a specially developed Indigenous Community Frame. This frame was constructed using both 2001 census counts and information collected in the 2001 Community Housing and Infrastructure Needs Survey. Within selected communities and out-stations a random selection of dwellings was made. Within selected dwellings, up to three Indigenous persons (aged 15 years or over) were randomly selected to participate in the survey.

5.2 Non-remote area sample

The 2002 NATSISS sample in non-remote areas was 5,250 persons, comprising 1,500 persons in major cities and 3,750 persons in regional areas.

The non-community sample was a random multistage area sample of dwellings in both remote and non-remote areas. As with other ABS household surveys, the basic geographic unit for the non-community sample was the census Collection District (CD) comprising about 220 households. Based on 2001 census results, the sample was designed to include CDs with only a small number of households with Indigenous residents as well as CDs where there were likely to be a large number of such households. A random selection of dwellings within selected CDs was then screened to assess the Indigenous status of their usual residents. In many CDs where there was likely to be only a small number of households with Indigenous residents, every dwelling was screened. Where a dwelling contained one or more Indigenous usual residents aged 15 years or over, up to three Indigenous persons were randomly selected to participate in the survey.

Screening households for Indigenous residents was a much greater task in major cities than in regional areas. The sample selection process revealed that 40% of CDs with at least one household with an Indigenous resident at the 2001 census were likely to contain fewer than 5 Indigenous households out of a total of about 220 households. Further, during field operations, many of the selected CDs were found to have a significantly lower than expected number of households containing Indigenous usual residents. Additional CDs were selected and surveyed in a 'top-up' enumeration period from February to April 2003. The lower than expected number of households identified as containing Indigenous residents may have been due to mobility (persons moving from the CD in which they were enumerated in the census), and/or non-identification of Indigenous usual residents.

5.3 Summary of response rates and future plans

For the 2002 NATSISS, after screening about 233,000 households in non-community areas, approximately 2.5% were identified as having an Indigenous usual resident aged 15 years or over, and around 80% of these households then responded to the survey. This response rate does not take into account the 12% of households that were unable to be contacted to establish the Indigenous status of their occupants. In communities, 78% of in-scope households were fully responding, with a further 16% of households yielding some information (ABS 2004d).

To lessen the screening load for the 2004-05 NATSIHS (Indigenous health survey) the ABS is collecting information from Indigenous people resident in households sampled in the concurrent National Health Survey. In addition, some investigation of the use of administrative data lists, such as the location of public housing, is being assessed for its potential to reduce the magnitude of the screening process. From the 2006 census onwards, ABS will progressively introduce a statistical geography based on the mesh-block unit, about one-fifth the size of current CDs. It is anticipated that these smaller geographic units will assist in pinpointing urban areas in which Indigenous people live and may potentially reduce screening activity.

5.4 Data collection methods

There were a number of differences between the data collection methods used in the community and non-community samples. In the former, the standard household survey approaches were modified as a result of pre-testing, to take account of language and other issues associated with the geographic remoteness of these communities. While wording and collection methodology were modified in the community questionnaire, most underlying concepts remained consistent with those in the non-community questionnaire. In the community sample,

interviewers used a pen and paper questionnaire (PAPI) while in the non-community sample interviews were conducted predominantly using Computer Assisted Interviewing (CAI).

In discrete communities, ABS interviewers were accompanied wherever possible by local Indigenous facilitators who assisted in the conduct and completion of the interviews. The Indigenous facilitators explained the purpose of the survey to respondents, introduced the interviewers, assisted in identifying the usual residents of a household and in locating residents who were not at home, and assisted respondents in understanding questions where necessary. In addition to the main survey questionnaire, Community Information Forms were used to collect a limited amount of community level information from the Council Office, such as availability of services and facilities within the community. Well-known community events were identified to assist with defining time frames within the survey.

6. MEASUREMENT AND OUTPUT

In presenting output from the Indigenous survey program, ABS takes care to ensure that users can readily assess its fitness for purpose, particularly with regards to public policymaking.

6.1 Weights and benchmarks

In the 2002 NATSISS as in other ABS household surveys, initial weights, equal to the inverse of the probability of selection, were assigned to each person. The initial weights were then adjusted at stratum level to account for both the lower than expected number of identified households with Indigenous residents from the non-community sample, and for households that were identified as containing Indigenous residents but for which no response was obtained.

The adjusted initial weights were then calibrated to align with independent estimates or benchmarks of the Indigenous population. These benchmarks incorporated age, sex and key geographic dimensions. Household weights were also constructed using the person weights and calibrated to align with person-level benchmarks. An analysis comparing 2001 census results with characteristics of the 2002 NATSISS sample indicated that the survey results did not appear to be biased due to systematic non-response.

6.2 Standard errors

In the 2002 NATSISS standard errors were calculated using a grouped jack-knife approach based on partitioning the primary sample units into 250 cross-sectional groups. Relative standard errors (RSEs) were produced for each estimate presented in the national report and in additional web-based data releases. With the exception of income statistics and results from the 2002 General Social Survey, ABS social survey output is generally supported by a model-based approach to the calculation of standard errors. For Indigenous surveys, the use of a large number of replicate weights to improve RSE measurement and the prominence of RSEs in output, emphasise the efforts by ABS to ensure that Indigenous statistics can be used appropriately. In particular, large sample errors alert users to those estimates that may be based on a relatively small number of observations.

6.3 Significance testing

Key comparisons of the 2002 NATSISS with results from the 1994 National Aboriginal and Torres Strait Islander Survey and the 2002 General Social Survey were annotated to indicate whether differences were statistically significant. Testing was based on a two-tailed z-test at the 5% level of significance. At present, presentation by ABS of the results of significance testing in national survey reports is unique to output from Indigenous.

6.4 Age-standardisation

Selected data items from the 2002 NATSISS were age standardised to facilitate more relevant comparisons with statistics for the non-Indigenous population. Data items for health, labour force, law and justice, and information technology were found to be correlated with age and suitable for age standardising. The direct age-standardisation method was used and based on the standard population of the total estimated resident population of Australia as at

30 June 2001. It is anticipated that, as was the case with data from the Indigenous over-sample to the 2001 National Health Survey, extensive use of age-standardisation will be made in dissemination of results of the 2004-05 NATSIHS.

6.5 Remote Access Data Laboratory

Unit record files from Indigenous surveys are released through the ABS Remote Access Data Laboratory (RADL). This facility allows researchers to interrogate the file over the Internet using statistical programs (such as SAS and SPSS). The RADL allows ABS to put a rich and flexible data source into the public domain while ensuring the confidentiality of individual respondents.

7. CONCLUSION

Through the many different strands of its Indigenous statistics activities, ABS aims to respond to the continuing need for better and more detailed information about Aboriginal and Torres Strait Islander Australians. The Indigenous survey program is one part of this strategy and like the others is subject to a continuous process of improvement. Through expanded engagement activities, ABS seeks to collect and disseminate information in ways that support Indigenous communities to participate more effectively in informed decision-making. However, the burden that the information collection process imposes on the Indigenous population is recognised as being already well beyond the reporting load being borne by the general community. Current and planned Indigenous collection activities are designed to manage that load. Indigenous survey samples are designed to be representative of the population in both remote and non-remote areas and to produce estimates that meet requirements at state/territory as well as national levels. The challenge for the future is to find ways of reducing the screening task in non-remote areas while retaining the integrity of the sample. Survey outputs are presented in ways that allow their fitness for purpose to be readily assessed by users. There will be a continuing need for effective data management as the number of Indigenous survey datasets continues to increase.

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