

NEWSLETTER

December 2002

This has been our busiest year ever, thanks to the continuing support of many clients, old and new. Our projects have ranged from epidemiology through to large scale surveys and economic and financial models, proving the recognition by yourselves of the applicability of statistics and mathematics in solving real problems. I wish you all a Merry Christmas and a Happy New Year.

*Dr John Henstridge
Managing Director*

Getting the Most from the Census

"In the week preceding the 2001 Census, 794,456 people (43.4%) had used a personal computer at home. Of these, usage of a personal computer at home by specific age groups reflected 269,840 people aged 0-19 years (14.7%)." (A Snapshot of Western Australia, Australian Bureau of Statistics (ABS), Nov 2002.)

It's easy to quote these statistics, but what do the numbers mean and what can you do with them?

Australia produces one of the best population censuses in the world. Carried out by the ABS on 7th August 2001, the Census of Population and Housing achieved a high level of completeness and accuracy unmatched by many other data collections.

The Data Analysis Australia Advantage

The Census data is a powerful source of information about people, households and communities if used properly, for example for future planning of services, location of customers, and identifying characteristics of communities. Data Analysis Australia has been using Census data in various applications since the 1986 Census. These applications are solving real problems for clients and have led to a distinctive Data Analysis Australia approach to using the Census.

The key aspects of this approach are integration, interpretation, illustration and individualisation.

INTEGRATION recognises that the Census data is rarely used in isolation – to be really useful it often needs to be combined with other sources of data in a statistically valid way.

INTERPRETATION emphasises what the data actually means – understanding and communicating the meaning of the data in a real context.

ILLUSTRATION recognises the importance of communication – a world full of data still needs means of presenting a picture in words, maps and graphs.

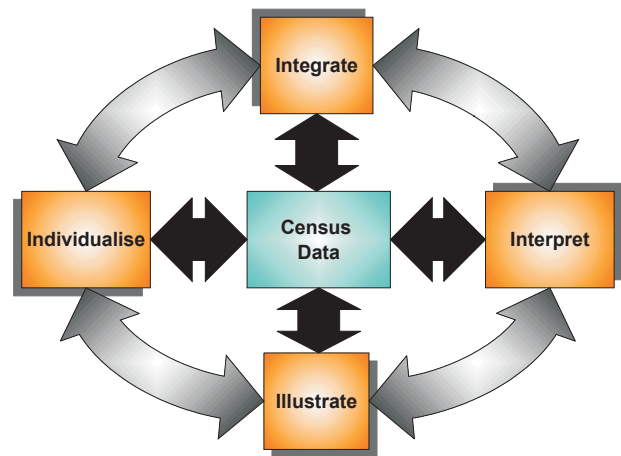
INDIVIDUALISED reporting is customised to suit the individual needs of our clients.

Data Analysis Australia has built in-house products that incorporate Census data, including a set of Socio-Economic Trend Indicators (SETI). The indicators are calculated for clusters of about 250 households on average within Australia (called Census Collection Districts) and can be aggregated to almost any geographical area. The indicators currently available are Advantage, Disadvantage, Job skills and Economic resources, with a Health Needs index in the pipeline.

The most recent Census describes Australia as it was in August 2001. Most people using the Census need to make decisions about Australia in the future. The link is provided by models that understand the growing and changing population of Australia. Data Analysis Australia maintains its own population projection model in response to the need for a population model that reflects the different characteristics of Australia's ethnic groups.

Data Analysis Australia is packaging the services it provides in the area of Census statistics, population modelling and community characteristics so that clients can take advantage of quick and cost effective analyses. Find out more about this in the next issue of our newsletter.

An extended article is available at www.daa.com.au/newsletters/extra/dec02. ■



The Value of Pilots

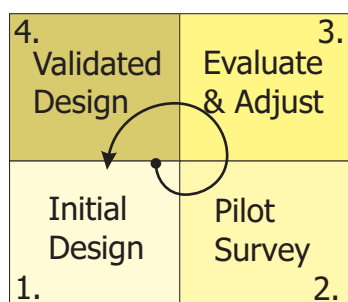
Finding out that a data collection or survey didn't work after it has been run can be an expensive lesson, particularly if that survey is long-term, needs to deliver highly robust and accurate figures or uses new or untested techniques. In these circumstances, going through a test phase of the survey is often a good investment.

Pilot surveys test the methodology, sample, questionnaire and all other aspects of the collection under real conditions in a scaled down format. A pilot validates a process for retention in the main survey or provides justification for changing a methodology to optimise the data collection.

A pilot survey can be thought of as one cycle through a standard quality improvement process and has many similarities to the famous Shewhart Cycle used in Total Quality Management. Critical to this is a rigorous evaluation and reflection phase. Of course, when a survey runs for an extended period additional cycles are used to further improve the design.

An example of good design practice using a pilot survey is the **Perth and Regions Travel Survey (PARTS)**. The PARTS pilot survey was designed to test particular features of the survey and the initial design parameters:

- Understanding response rates in suburbs where responses were considered easy or difficult to get. For this reason the pilot selected certain suburbs where particular problems were likely to arise.
- Determining the most efficient way of delivering and collecting survey packs and understanding how this affects data quality. The mail methodology was heavily dependent on timely reminders being posted to sample households and the effectiveness of these had to be measured.
- Validating the questionnaire content and layout by finding out what helpful information can be provided and in what format. The review of responses and interviews with respondents identified questions that worked well and others that needed change.



- Checking the sample frame for accuracy and completeness. The sample frame – a list of all land blocks in Perth – was chosen because it was likely to be complete (with the exception of some flats), but it also contains many non-residential properties.

It became evident through the pilot survey that the mailout/mailback process could not cope with problems in the sample frame. The sample frame could not be readily changed since it provided the best calibration for the whole survey. Hence the mailout/mailback process was changed.

An adjunct to the pilot was then run to test a new methodology involving personal visits to sampled households to deliver and collect the survey packs. The pilot adjunct found the alternate collection methodology to be superior to the original postal process. The main survey was then able to start with a validated collection methodology.

An extended article is available at www.daa.com.au/newsletters/extra/dec02. ■

PARTS Update

Around 1000 households in 53 suburbs have interacted with PARTS in the first six weeks. The PARTS Team have been busy delivering and collecting Survey Packs as well as checking all the information on the Travel Forms.



The information provided on the travel forms goes through a series of data quality steps. The PARTS Collector can quickly check for simple errors such as missing trips when they collect the forms from a household and resolve most queries there and then. Data Analysis Australia's custom in-built data entry system picks up further errors or inconsistencies and highlights the need for telephone follow-up.

Being an ongoing survey that must measure seasonal variations in travel, PARTS doesn't close down for Christmas or the New Year. Questionnaire deliveries and pick-ups will continue and the Helpline will be available throughout the holidays to answer any PARTS queries. ■

Classic Quote

"The quiet statisticians have changed our world - not by discovering new facts or technical developments, but by changing the ways we reason, experiment, and form our opinions about it."

Stephen Hawking, Astrophysicist

Company News

Meaghan O'Loughlin, former Consulting Assistant at Data Analysis Australia, has recently been promoted to PARTS Team Leader. Meaghan manages a team of over twenty part-time staff, coordinates the delivery and collection of surveys and oversees data entry.

Pam Gant has joined Data Analysis Australia as the new Consulting Assistant. Pam provides valuable project support to the consultants by undertaking data processing, survey implementation assistance, report formatting and other project-related tasks.

Newsletters are available online at <http://www.daa.com.au/newsletters/>

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