



Australian Government
Department of Immigration
and Citizenship

Following Migrants Forward

*Exploring the benefits and challenges of a
new longitudinal survey of immigrants*



Papers presented to the
Longitudinal Survey of Immigrants Workshop

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Foreword

This series of papers is published as part of the development work for the Department of Immigration and Citizenship's (DIAC) new longitudinal survey of humanitarian migrants - 'Building a New Life in Australia'. That development work commenced in 2010 when it became clear new longitudinal data was required to assist the Department in achieving one of its core policy objectives, 'The well-managed entry and settlement of people'. At that point in time the Department had not collected longitudinal settlement data on migrants for a number of years and was thus reliant on outdated data to inform important policy and program decisions.

With the recognition that longitudinal studies are extremely valuable research tools for understanding social and economic settlement issues, a process was commenced to initiate a new longitudinal study. A first step was the convening by DIAC of a workshop focussed on longitudinal migration research issues. The goal of this workshop was to help establish a firm conceptual and practical foundation from which to base the development of any such study. To that end a number of academics and government officials with expertise in longitudinal studies and migration issues were invited to present papers to a broad range of DIAC and central agency policy makers at the ANU in September 2010. That workshop was an enormous success with a wide range of views presented, ideas sparked and new directions established.

The presented papers are published here and collectively they provide a solid overview of both the utility and complexity of longitudinal studies for understanding migrant settlement experiences. Despite the presenter's varied backgrounds and perspectives, a clear and consistent theme is that longitudinal surveys are critical for understanding dynamic processes such as settlement outcomes. It is also recognised, despite their value, that they should not be entered into lightly as they are costly and potentially complicated and will not produce their best results for years after they commence.

The first paper, prepared by a team from the Australian Bureau of Statistics, provides a broad overview of longitudinal surveys from a statistical and methodological focus. The paper clearly highlights the strengths and weaknesses of longitudinal approaches, their various attributes and particularly emphasises how they differ from cross-sectional approaches. Within their discussion they flag issues for consideration before conducting a longitudinal survey, address specific methodological issues such as sampling and analysis, and identify risks which can emerge along the way.

Like the ABS' paper, the second presentation by DIAC's David Smith, presents a strong argument for the value of longitudinal surveys in migration research. In particular the paper emphasises the role of longitudinal approaches alongside other types of surveys. As he points out, there are many issues in the migration field which can be adequately addressed with cross-sectional approaches but there are also many for which longitudinal approaches are necessary. As such, both types of surveys should operate alongside each other in a robust research program.

Anne-Marie Masgoret's paper maintains the argument that longitudinal studies are essential tools for the development of evidence-based migration policy. Her paper, which outlines the experience of longitudinal studies in New Zealand, highlights the need for such studies to have both short and long term goals. Given the capacity of longitudinal studies to address a vast array of research and policy issues, she also warns of the need to keep such studies focussed and manageable.

From an academic perspective, Graeme Hugo's paper makes special emphasis of the differences in potential settlement difficulties between humanitarian migrants and those from other entry streams. The paper discusses the use of longitudinal studies in identifying settlement problems and service gaps for humanitarian migrants. Hugo also looks at previous longitudinal migrant surveys and highlights both their uses and limitations before recommending how future surveys could be improved.

Like Graeme Hugo, Deborah Cobb-Clark's contribution emphasises the clear and demonstrated value of longitudinal studies for providing insights and estimations of complex dynamic issues than is possible with other methods. Without longitudinal data she notes, our ability to understand the causal factors of dynamic behaviour would be severely limited. Luckily however, the utility and availability of such data has increased in recent years as this need to understand complex dynamic socio-economic issues has coincided with advances in computational ability to exploit such data.

Finally Siew-Ean Khoo's paper took a step away from the technical aspects of longitudinal studies to look at conceptual issues around settlement outcomes. Her paper examined the concept of 'successful settlement', how it could change over time, the factors that influence it, and the different ways in which it can be understood. Her paper went on to consider how a longitudinal study of migrants could advance understanding of such issues. Recognising that outcomes and timeframes will vary across individuals and groups she pointed to the need for longer longitudinal timeframes for surveys which include humanitarian migrants.

With the lessons and insights gleaned from these papers and associated workshop, the department went on to develop a strategic survey research plan, from which emerged a sound business case for a new longitudinal survey of humanitarian migrants. As such, a longitudinal survey focussed on such migrants, and the factors which influence their settlement outcomes was initiated as a clear and immediate Department research need.

1. The merits of a longitudinal survey: a methodologist's view.

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Introduction

This paper examines what longitudinal surveys can offer that is distinct from making use of other survey designs or other data sources, the pros and cons of longitudinal surveys, and the issues that need to be considered before conducting or running a longitudinal survey.

Background

The Department of Immigration and Citizenship (DIAC) is the primary Australian Government agency responsible for visas, immigration and citizenship. Historically, it has run surveys investigating immigrant outcomes – the Longitudinal Survey of Immigrants to Australia (LSIA), which sought to provide government and other agencies with reliable data to monitor and improve immigration and settlement policies, programs and services.

The first LSIA surveyed migrants who arrived in Australia between September 1993 and August 1995 and had three waves, with the third wave up to 42 months after the date of migration. The second LSIA sampled from migrants arriving in Australia between September 1999 and August 2000 and was similar in terms of scope of content, but had only two waves, with the second wave occurring up to 18 months after the date of immigration. The third LSIA had a sample drawn from immigrants who arrived or had their visa granted onshore between December 2004 and March 2005). It had two waves but was more limited in content.

DIAC is considering all options for a possible new survey of immigrants. This paper has been provided to help them identify the issues around possible survey design options, with focus on a longitudinal design. In this paper we briefly introduce the pros and cons of a longitudinal survey design versus other alternatives, and highlight some issues that need to be considered before undertaking a longitudinal survey. The presentation of the issues in this paper is broad in nature and is meant to generate discussions only.

Survey design and objectives

The selection of survey design is dependent on the survey objectives. Before deciding which design to use, the objectives must first be decided and these should be a primary consideration for whether a survey needs to be run and the type of design to use.

Survey design in this paper refers to the design for collecting data over time. The two most common designs are longitudinal and repeated cross-sectional.

¹ Views expressed in this paper are those of the authors, and do not necessarily represent those of the Australian Bureau of Statistics. Where quoted, they should be attributed clearly to the authors.

Longitudinal or panel surveys measure change by following the same sample of persons (the panel) across successive time points (waves). The same panel may be included for the life of the survey, it may be progressively rotated, or a series of panels (that may overlap in time) may be used. Longitudinal surveys differ from cross-sectional surveys which measure change by providing information on the characteristics of interest from separate samples of the population at different points in time.

In surveys that are concerned with measurements over time, Duncan and Kalton (1987) give a useful categorisation in the box below. We added some examples for illustration.

Survey objectives

- a) To provide estimates of population parameters at distinct time points or during distinct periods of time within which changes are treated as negligible. For a simple illustration, in the area of immigration, an example might be the *monthly* measurement of unemployment rate for immigrants who ever entered Australia with General Skilled Migration visas.
- b) To provide estimates of population parameters averaged across a period of time. E.g. – what was the unemployment rate of immigrants with General Skilled Migration visas in calendar year 2010?
- c) To measure net change at the aggregate level. E.g. – what was the change in unemployment rate for immigrants with General Skilled Migration visas between 30 June 2010 and 30 June 2011?
- d) To measure various components of individual change, such as:
 - gross change, i.e. change at the individual level between *two time points*;
 - average change for each individual, when looking at several time points; and
 - instability for each individual, such as the volatility of some measured concepts.
- e) To aggregate data for individuals over time, for example, if the survey is quarterly, the aggregation of the quarterly measurements to form an annual measure. E.g. – what were the total earnings for a particular person over the 3 year period 30 June, 2010 - 30 June, 2013?
- f) To measure the frequency, timing and duration of events occurring within a given time period? E.g. What proportion of immigrants who were unemployed in time t remained unemployed in time $t + n$?
- g) To cumulate samples over time, especially samples of rare populations. E.g. Collecting health data on individuals who experienced a rare disease in the last 5 years, or cumulating data from immigrants from unusual countries.

Some designs are better than others for some objectives but poorer for other objectives. Examining individual change over time or making strong causative inferences are best served by one design, while another design may be better for estimating parameter estimates at a point in time.

For example, longitudinal surveys are much better at objectives d and e and the key advantage of the longitudinal design is its abilities to measure individual change. Longitudinal surveys can also meet objectives a, b and c but the attrition across waves can impact on the representativeness of the sample. This can be addressed in part by panel rotation and supplementary samples.

Repeated cross-sectional surveys cannot meet objective d. But repeated cross-sectional surveys with their probability samples of a population at a point in time can provide better cross-sectional estimates and meet objectives a, b and c better than longitudinal surveys. Repeated cross-

sectional surveys can be used to provide estimates for objectives d and e by using retrospective reporting but this can be problematic with recall problems.

Collection designs

For the DIAC workshop, the following survey designs or collections are put into the table for discussion: longitudinal survey, repeated cross-sectional surveys, a longitudinal administrative data, and the Statistical Longitudinal Census Dataset and Census Data Enhancement option.

The first two have been described briefly above. Some examples and their pros and cons are identified in sections *Longitudinal survey* and *Repeated cross-sectional* below.

The latter two are part of the overall strategy of using administrative datasets to construct through-time datasets, by record linking. These are respectively described in sections *Longitudinal administrative* and *Statistical Longitudinal Census Dataset and Census Data Enhancement*. Their pros and cons are also explained.

Design 1: Longitudinal surveys (also referred to as panel surveys)

Description

A longitudinal survey is a broad term encompassing several possible options. The prototypical design is a *panel* survey, where a single sample of individuals is surveyed over multiple time points (*waves*). The *repeated panel* survey design involves running a series of fixed-duration panel surveys, each starting at a different time point. The time periods covered by each constituent panel survey may either be overlapping or non-overlapping. An overlapping design has the advantage that there is always at least one panel survey in the field at any given time, enabling migrant-intake *cohort effects* to be clearly distinguished from confounding *year effects*. A *rotating panel* survey is a special type of overlapping repeated panel survey optimised for the regular production of population-level estimates for net and gross change, where one panel is dropped and another panel started at each successive time point. A *split panel* design involves running a panel survey concurrently with a repeated cross-sectional or rotating survey, in order to balance their respective strengths and weaknesses. However, this option is the most expensive, as it is essentially running two different surveys at the same time.

Examples

A few examples in the social statistics area are as follows.

- The *Longitudinal Survey of Immigrants to Australia (LSIA)* is a panel survey, covering migrant cohorts with arrival dates September 1993 – August 1995 (LSIA 1), September 1999 – August 2000 (LSIA 2), and December 2004 – March 2005 (LSIA 3). LSIA 1 had duration of three years and involved three data collection waves, whereas the latter two surveys had duration of one year with two data collection waves. LSIA 1 and LSIA 2 have similar data items and can be grouped together to form a non-overlapping repeated panel survey, though LSIA 3 is not directly comparable to the other two surveys due to changes in data collection methodology.
- The *Household, Income and Labour Dynamics in Australia (HILDA) Survey* is a household-based panel study which began in 2001. It collects information about economic and subjective well-being, labour market dynamics and family dynamics. Each wave includes special questionnaire modules. The interviews are conducted annually with all adult members of each household. HILDA has been granted funding for twelve waves of a longitudinal survey.

- The Longitudinal Surveys of Australian Youth (LSAY) track young people as they move from school into further study, work and other destinations. It uses large, nationally representative samples of young people to collect information about education and training, work, and social development. Information collected as part of LSAY covers a wide range of school and post-school topics, including: student achievement, student aspirations, school retention, social background, attitudes to school, work experiences and what students are doing when they leave school. This includes vocational and higher education, employment, job seeking activity, and satisfaction with various aspects of their lives.
- The *Survey of Employment and Unemployment Patterns (SEUP)* was a joint venture between the ABS and DETYA and was developed to assist in the assessment of the impact of the Federal Government Working Nation initiatives. At the broad level it aimed to measure changes in the labour market. The survey involved selecting three panels who were then interviewed annually for three years starting in 1995. The first panel was a jobseeker panel and was the main focus of the survey. The second panel, labour market program participant panel (LMP), was a sample of persons who were known to have started on a labour market program. The third panel, population reference group (PRG), was included to compare the experiences of the general population with the first two panels.

Pros

A longitudinal survey allows changes over time to be analysed at the *unit* (here, an individual migrant or a migrant household), rather than aggregate, level. This greatly enhances the data available for individual-level modelling; allows phenomena to be analysed such as the duration of *states* (such as unemployment) and transitions between states, and enables researchers to make *inferences about causality* based on the ordering of events in time. A well-designed cross-sectional survey can, for example, give a good estimate of the *number* of unemployed people at one point in time, but it does not offer any information on *how long* unemployment lasts (unless it incorporates retrospective questions to make it a quasi-longitudinal design), whereas a longitudinal design can offer estimates of both.

Cons

Longitudinal panel surveys have higher cost and complexity than cross-sectional designs, due to the need to collect information from the same people over an extended time period. Some of the costs include specialised tracking/tracing procedures (to find people whose contact details have changed), and possibly response incentives (to alleviate high respondent burden). Survey collection modes that require face-to-face contact with respondents may lead to increased data collection costs over time due to sample *declustering* – individuals in a sample that may have been concentrated in a major metropolitan area in the first wave (either ‘naturally’ or as a result of a deliberate cluster-sampling method), tend to spread out geographically and therefore increase interview costs.

Attrition losses over time affect sample size and therefore *sampling error* – that is, errors in estimation due to the fact that a sample is used to represent a population (as opposed to a census). *Selective* attrition is even more problematic as representativeness is distorted (a kind of *non-sampling error*). Handling varying non-response over time requires more complex weighting and imputation adjustments than in cross-sectional designs.

Longitudinal panel designs are also less efficient at estimating cross-sectional *population parameters*, due to surveying the same units multiple times. This enhances the amount of information collected about each in-survey individual, at the cost of not being able to survey as many individuals.

Lastly, these designs share a problem with more general longitudinal studies, in that it is difficult to consistently define and collect longitudinal information on units that change composition over time, such as households. In practice this tends to be handled by following individuals within the

original Wave 1 sample, and in each subsequent wave collecting information on the units they currently belong to.

Design 2: Repeated cross-sectional surveys

Description

Cross-sectional designs are probably the 'bread and butter' of ABS Survey collections – a questionnaire (administered via CATI/CAPI/self-completion, etc.) is sent to a representative sample of the population of interest. The survey can be repeated at any sensible time-point – e.g. monthly, annually, every six years. Survey outcomes for cross-sectional surveys are not dependent on following the same cohort or panel, i.e. an independent sample is collected at each point to represent the population at that time period.

Examples

ABS household surveys such as the *Health and Household Expenditure* surveys are good examples of repeated cross-sectional surveys. Similar measurements are made on equivalent populations across different time points but the sample elements are different.

In DIAC, an example is the *Continuous Survey of Australia's Migrants (CSAM)* – first run in September 2009. The population of interest is skilled and family stream recent immigrants (<=6 months) who have been granted a permanent residence visa or a temporary visa on the pathway to permanent residence visa. It is to be repeated every six months with a new cohort. (However, it also has a longitudinal component – previous respondents have one follow-up, run at the same time as a new cross-section is also surveyed.)

Pros

Generally, repeated cross-sectional surveys with their probability samples of a population at a point in time provided better cross-sectional estimates and meet objectives a, b and c (see section 3 above) better than longitudinal surveys.

Cross-sectional designs are less expensive than panel surveys to estimate population parameters or changes in population parameters at a fixed level of precision. These designs do not suffer from the attrition problems of panel surveys and therefore obtaining a more representative sample should be easier (respondents only have to agree to one interview).

Respondent burden is more evenly spread, especially if previous respondents are selected out of future repeats.

If necessary, the survey can be 'tweaked' on repeats with less consequence than needing to change a second or subsequent wave of a longitudinal survey because of a problem in the first wave.

Cross-sectional surveys provide, along with panel surveys, estimates of subjective response variables that are unlikely to be in administrative datasets.

Cons

Cross-sectional designs provide no measure of *individual* change, only population change. Causative inferences are weaker compared to longitudinal designs. They offer less scope for investigation of broader relationships since what is known about a particular individual or group is restricted to a single point in time. However associated limitations can be overcome, at least to an extent, by including retrospective 'change factor' questions in the survey instrument.

Inability to re-survey the same individuals may make it difficult to sample rare populations.

Design 3: Longitudinal administrative

Description

Longitudinal administrative datasets are broadly equivalent to a longitudinal panel survey the same individuals are repeatedly 'sampled' in successive waves – but they are not surveyed by interview/self-completion. Instead, data are obtained from existing records compiled for administrative purposes – e.g. ATO Notices of Assessment or Centrelink records of payment.

A contributing factor in the increased interest in administrative data for longitudinal studies is that administrative data can now be used more effectively.

Examples

The former Department of Families and Community Services (FaCS) formed an administrative longitudinal dataset called the Longitudinal Data Set (FaCS LDS). The FaCS LDS was constructed from a 1% sample of the Centrelink operational databases, from records first entered between June 1995 to June 2000. The LDS recorded information on the interaction of Centrelink customers with the welfare payments system over successive fortnights. It did not contain information on individuals when they were not on welfare payment programs.

The LDS contained information on the personal, demographic, income, assets and welfare payment data of customers, in fortnightly periods. The FaCS LDS was used by researchers to analyse the dynamics of welfare receipt and participation in welfare programs.

Pros

Longitudinal administrative datasets are less expensive than surveys – there are no survey development or interviewer costs. Because the data are already collected for administrative purposes, there is no additional respondent burden. There is potential to link different administrative datasets with each other (subject to confidentiality and privacy restrictions) to increase the richness of the data.

Administrative datasets have the potential for very large sample sizes. They do not suffer from subjective recall effects, interviewer effects or respondent fatigue, which means lower non-sampling error compared to survey techniques. Because individuals do not have to be followed up, they do not suffer from the attrition problems of panel surveys.

Because they track the same people over time, longitudinal administrative datasets enable the kinds of strong causative inferences and individual change over time as panel surveys.

Administrative datasets enable the collection of data retrospectively. Data may also be available more quickly and there is potential to go back in time.

Cons

Coverage and quality may be an issue. Administrative records vary in terms in terms of their purpose which is a prime determinant of their coverage and quality, and therefore statistical usefulness.

Coverage of the population is determined by administrative needs, not research needs (e.g. those without taxable income do not need to report to the ATO)

Record fields are defined for operational purposes and may not overlap with standard classification and definitions. Additionally, legislation and other changes can mean discontinuities in definitions and can change the coverage of the dataset.

Data quality is only as good as the quality of the administrative records and it cannot be improved retroactively.

Even enhanced/linked data may not be able to address some particular research questions/needs – e.g. some of the questions in the LSIA included:

- What was your main reason for migrating to Australia?
- How well do you speak English?
- What was the main problem, if any, that you've had in finding work?

Such subjective response/evaluation questions are beyond the scope of administrative data sets and yet they may be the primary variables of interest.

Can the Settlement Data Base (SDB) alone be a possible source of data for creating an administrative longitudinal data? There is no specific 'outcome' information in the SDB, and existing records are updated only when needed, making the SDB alone an unsuitable source for a longitudinal administrative dataset.

Design 4: Statistical Longitudinal Census Dataset and Census Data Enhancement - combines elements of longitudinal and linked administrative sets

Description

In 2005 the ABS put forward a proposal to enhance the use of the Census of Population and Housing. This comes under the umbrella name Census Data Enhancement (CDE) Project. A key feature of the CDE Project is the investigation of the feasibility of creating the Statistical Longitudinal Census Dataset (SLCD) which entails choosing a random sample of 5% of persons in the 2006 Census of Population and Housing and endeavouring to bring together those persons' 2006 records with their records from the 2011 and subsequent Censuses. A feasibility study *has been* conducted (Simulated SLCD Quality Study) and the recommendations are now being acted upon and the project is moving forward towards the creation of the SLCD. The plan is that at each Census, the SLCD will be augmented with a 5% sample of children, who have been born, and immigrants, who have arrived, since the previous Census. There will also be some provision for topping up the sample to maintain a data set that is consistently 5% of the Census population. In line with ABS policy, the links between records from successive Censuses would be made without using name and address.

The CDE Project is also considering linking the SLCD with non-ABS datasets (hence will be called enhanced SLCD). One of the possible dataset it will be linked to is the Settlement Data Base (SDB). Linking will be done using probabilistic statistical techniques. A feasibility study on this was already undertaken.

When formed, the longitudinal data will take advantage of the richness of data that Census provides. The Census provides information on topics such as family structure; education and qualifications; work, including hours worked, occupation and industry; income; and housing. Patterns in individual experiences over time in these areas, and factors that might influence these experiences, would be those where the SLCD would provide most insight. Examples include studies of the impact of parents' education and labour force participation on their children's subsequent participation, and the impact of factors such as family structures and household income on these outcomes.

Pros

The enhanced SLCD will enable the comparison of migrant outcomes to those of the wider Australian population because the same collection instrument is used for both populations (the Census).

An enhanced SLCD shares many of the same advantages as administrative data collections, including reduced cost, no additional respondent burden, and very large dataset sizes (reducing sampling error). It also shares many advantages with panel surveys, including strong causation inferences and information about individual change.

Even though the enhanced SLCD uses only a 5% Census sample, the number of 'respondents' would be comparable to that of a large survey.

Cons

An enhanced SLCD is a relatively untested approach - only evaluation studies have been conducted at this stage. The longitudinal component of the dataset does not contain any migrant-specific data items. That is, the questions in the Census are aimed at general information about the totality of the Australian population, rather than asking about variables that might be more relevant for migrant outcomes.

Different linking techniques have different success rates. There is the potential for significant problems with missing data, due to inability to link all records. Attrition could occur over time for records as the number of records that can be matched are reduced.

There is a five-year window between Censuses and this will not capture short term trends.

Could SLCD answer DIAC questions? Provided SDB administrative data is able to be linked with SLCD longitudinal data (rather than just same point-in-time Census cross-sectional data), this dataset should be able to provide longitudinal information for migrants that covers a broad set of social characteristics. However, SLCD is unlikely to be able to offer the timing and specificity of data items that a targeted panel survey will provide.

Longitudinal Surveys – issues to consider

The following issues were extracted from an internal (unpublished) ABS document (Sutcliffe, A. 2000).

The issues associated with undertaking a longitudinal survey are in the following areas:

- planning considerations
- data quality
- analysis and data dissemination
- resources.

Issue 1: Planning considerations

Adding the dimension of time to a survey increases the complexity of a survey. Sufficient resources are required to ensure that the survey can be designed and tested so that it can meet its objectives. As with all surveys the planning stage of a survey impacts on how well the survey meets its objectives. For panel surveys, the decisions made for the first panel impact on all subsequent waves and it is often difficult to make changes in later waves.

Defining the objectives of the survey and the key outcomes required is an important part of the planning process. Narrow objectives can provide some savings by reducing the amount of data needed to be collected by either a reduction in the questions or in the sample size. However, narrow objectives also reduce the analytical capacity of the data. On the other hand, broad objectives increase the analytic capacity but usually at an increased cost.

Ensuring adequate resources for the planning stage of a panel survey is crucial in the success of the survey.

As noted, the dimension of time increases some of the issues that need to be considered in the planning and development stage. All aspects of a survey are affected and in particular the survey developer needs to consider:

- panel issues
- methodological issues
- content issues
- collection issues.

Issues such as data dissemination and storage also need to be considered in the planning stage.

Panel Issues

In keeping with the objectives of the survey, there are several factors which need to be considered and can impact on the overall survey design:

- length of the panel
- length of the reference period
- number of waves
- overlapping or non-overlapping panels
- size of panel.

Each of these decisions will impact on the sample design and field procedures. The longer the panel lasts the greater the wealth of data obtained for longitudinal analysis. However, the longer the panel the greater the problems of maintaining a representative sample for cross-sectional estimates at later time periods.

The length of the reference period is an issue faced by all surveys and is often a compromise between cost and data accuracy. The longer the reference period, the greater the risk of recall error.

Closely related to the length of the panel and the reference period is the number of waves (times the panel will be interviewed). The greater the numbers of waves, the greater are the risks of panel attrition and time-in sample effects; the higher is respondent burden; and the survey will be more costly.

A 'rolling sample' methodology can be implemented under which a proportion of the sample is contacted/interviewed at various points across a specified period. For example, the initial wave can occur about six months after the date-of-arrival for any particular migrant but these interviews are spread out over 18 months. This makes collection points less 'lumpy' and affords greater potential for ongoing monitoring/evaluation and implementation of fixes where required. It also 'smooths out' potential seasonal/temporal effects. This approach has been largely adopted by previous LSIA's.

These considerations impact on the decision of whether to have overlapping and non-overlapping panels. One panel in the field at one time is simpler in terms of field work but must be weighed against the impact on cross-sectional estimates. Overlapping designs have the benefit that bias analysis can be undertaken through comparison of the results of the two panels for a given time period.

These choices also influence the panel sample size along with other methodological issues such as the level at which estimates are required and the variability within the population. The need for cross-sectional estimates will also impact on the size of the panel.

Methodological Issues

In developing a panel survey issues such as sample size are not only affected by the survey objectives and the desire to meet pre-defined accuracy requirements but also by panel decisions and the level at which estimates are required. If cross-sectional estimates are required the overall sample design may need to include supplementary samples for later waves.

Over sampling of subgroups is widely used in cross-sectional surveys but caution is needed in applying this to longitudinal surveys. With long-term panels the objectives of the survey may change over time and over sampling to meeting initial objectives may reduce the analytical capability later in the life of the panel.

Secondly, there is the issue of identification of the desired sub-group and whether panel members can move in and out of the sub-group over the life of the survey. Identification of the subgroup can be costly in terms of screening or developing appropriate sample frames.

The method of dealing with non-response can introduce a complexity that is not usually found in repeated cross-sectional surveys. In particular, how to deal with individuals who respond to some waves but not all. In a panel survey with three waves, this can lead to eight different response patterns from responding to all waves to responding to no waves. While the non-response patterns can be dealt with by adjusting survey weights this leads to another complexity of multiple weights which is undesirable and compromises need to be made to deal with these weights.

The unit of collection and analysis and methods of dealing with changes to these units need to be considered at the planning stage. For example, with Business surveys, business rules may need to be developed to define how to treat changes such as mergers and expansion of the business. For household surveys, consideration must be given on whether to follow individuals or households.

The concept of a household poses relatively few analytical problems for cross-sectional surveys because the household is easily defined at a point in time. However, this becomes a problem when trying to extend this concept to households over time as households can change composition due to a variety of reasons. Duncan and Hill (1985) noted that in the US a large fraction of the population undergo some fundamental change in household arrangements during relative short periods of time.

The key problem in defining a longitudinal household is understanding when the household is the 'same' as the previous wave. The definition of 'same' is extremely important and can in fact mask some of the changes occurring in households.

Some analysts argue that a better way of approaching the issue is to use the household as unit of measurement and the individual as the unit of analysis. This means changing the way the analysis questions are posed from:

- what proportion of households are classified as poor to
- what proportion of persons live in households classified as poor.

Using the individual as the unit of analysis has fewer conceptual problems and better facilitates analysis of the role of the household composition change in individual's behaviour and outcomes.

Whatever the method is used for longitudinal households, it is individuals that are tracked over time. There is no rigorous way of defining households which would allow them to be

unambiguously followed across time. Individuals are more stable in the longitudinal context and are easier to track and follow.

Another methodological issue that needs to be considered in the planning stage is the rules for following respondents. This is relatively simple when only longitudinal estimates are required. However, when cross-sectional estimates are required, the rules can become quite complex as they need to describe how to treat original sample members and who to track when there are changes in the household. For example, how to treat individuals that enter a household or leave a household.

Generally, the rules involve tracking all original sample members and if they split off their original household to form new ones interviewing all members of their new household. For some surveys it may also involve following the children of original sample members and interviewing them once they come in scope of the survey.

Content issues

In developing the survey content consideration must be given to ensure that concepts will be consistent over time. Thorough testing of the questions and content is important as to ensure consistency across time and changes to questions should be kept at a minimum. User consultation on data use and expected analysis needs to be considered at this stage.

Data Collection

As with any survey design a decision is needed about the whether the survey data is collected face to face, by telephone, by self-completion or whether to use computer assisted interviewing. For panel surveys, the method of data collection can differ for each wave and this needs to be considered during the design phase.

Different migrant sub-types may require different modes of collection. Mail and CATI-based response modes are cheaper than face-to-face interviewers, but may be less suitable for humanitarian immigrants who are more likely than the other sub-types to require a translator.

Another issue is the possibility of feeding back to respondents their responses at earlier waves of the collection. This method can secure more consistent responses across waves. There is a danger that an undue level of consistency is generated.

Issue 2: Data Quality

This section looks at the following issues affecting the data quality:

- non-response and coverage
- time-in sample bias
- recall error.

Non-Response and Coverage

While non-response is an issue for repeated cross-sectional surveys the impact on panel survey is compounded over time. Generally, the attrition rates level off after the first two waves with later waves having much higher response rates but even so the level of response can decline significantly. For example, an initial response rate of 75% with all subsequent waves having response rates of 95% means that after five waves only 50% of the original sample is being enumerated.

In a survey of immigrants, the survey may be subject to considerable non-response risks, especially from humanitarian migrants who are more likely to have poorer levels of written and

spoken English and who could be more suspicious of government agencies undertaking surveys, due to past persecution or traumatic experiences in their origin countries. If tracking individuals through waves or time, non-response bias will be a more significant problem for longitudinal surveys.

Attrition can come from several sources:

- respondents leaving the population of interest (i.e. death, emigration, moving to institution)
- failure to contact respondents
- failure to trace respondents who have moved
- refusal to be interviewed.

The impact on the estimates and calculation of response rates depends on the source of attrition. For example, respondents leaving the population will not affect the response rates but will lead to a reduction in the effective sample size. This source is equivalent to sample loss and is not included in the calculation of response rates. However, the other three sources not only reduce the effective sample size but also affect the response rates.

Attrition is a major concern for longitudinal surveys and can impact on the representativeness of the sample. It is known that non-response to longitudinal surveys does not occur completely at random. There tends to be differential non-response among different sub-populations. In some longitudinal surveys, the SEUP for example, the sample attrition between the waves varied between different sub-groups, where the survey lost more males than females, young people than older people, and renters than non-renters. In the U.S. a similar pattern was found for the Panel Survey of Income Dynamics (PSID) where non-whites are more likely to leave the sample and that leaving the sample was related to mobility, having moved or planning to move in the near future (Lillard 1989).

These more mobile population groups are likely to have different characteristics to other groups in the population. For example, it is more likely they will have different income and employment characteristics. This can introduce bias into the results and while the method of adjusting weights can be used, it does rely on the assumption that the respondents and non-respondents will have the same responses for the characteristics of interest.

There are several ways of minimising the impact of attrition, such as adjusting the survey weights; fieldwork procedures; and appropriate sample design.

Time-in-sample bias

Time-in-sample bias may occur in longitudinal surveys. There is some concern that there can be a change in the reporting behaviour and actual changes in behaviour due to the participation in a panel survey. There has been research into this time-in sample bias or panel condition and while it has been noted it appears that they are not pervasive (Kalton and Citro 1993).

Examples of possible changes in reporting behaviour is where there is a large amount of sequencing and respondents will respond so that they will minimise the number of questions they need to answer. However, it can also have a positive impact where respondents may prepare for later interviews and collate information required. For household panel studies the evidence of panel conditioning is inconclusive (Buck, Ermisch and Jenkins 1995).

Recall Problems

With all surveys the length of the reference period is important because it influences the level of recall required by the respondent. In panel surveys one of the advantages cited is the reduction in recall error but this only occurs if shorter recall periods are used. One problem for panel surveys that can be attributed to recall error is the seam effect. The seam occurs at the point where two records are matched to produce a longitudinal record. It has been found that the number of transitions observed between the last month of one reference period and the first month of

another is far greater than the number of transitions observed between months within the same reference period (Bailar 1989).

This seam effect is caused by response errors, by either placing the beginning or end of a spell or completely forgetting about a spell (Cotton and Giles 1998). An analysis of the seam effect in Canada's *Survey of Labour and Income Dynamics* (SLID) has found that one way of overcoming this problem is to use dependent interviewing, that is informing respondents of their previous year's result.

Issue 3: Analysis and Data Dissemination

The analysis and dissemination of longitudinal data introduces an additional level of complexity of how to treat the measurements across time. There are several components that can impact on the use of data from longitudinal surveys:

- access and useability
- analytical skills.

In the planning and development phase of the survey these need to be considered carefully to maximise the useability of the data. The first two issues are closely related but the third relies on the skills not only of those analysing the data but the users of that analysis.

Access and Useability

Access to the data is an important consideration for users. The benefit of longitudinal data is the ability to look at the changes across time for an individual, which means users require access to the individual records rather than aggregated data. This access to individual records can be safeguarded by over-confidentialising the data. Maintaining confidentiality of individuals becomes important as the potential to identify individuals increases as the amount of information held for each individual increases.

The added dimension of time affects not only how the data is stored but also on how variables are derived. There is the added complexity of creating derived variables such as spell duration data and the format of keeping each individuals data together. In setting up a longitudinal survey, the design of the database should be considered carefully to take into account of the data that will be added each year. The database needs to be flexible in its design to take into account the different types of research being undertaken. Linking between households and families with individuals can become more complex as the panel ages.

When providing data into the public arena consideration needs to be given to the users of the data. Most output from longitudinal surveys is in a rectangular file structure with links across records. While this meets the needs of most researchers it can be limiting to other users without appropriate statistical computing packages. Using relational databases or survey specific packages to help users to create tables etc. may need to be considered.

Analytical Skills

The level of a useability for longitudinal data not only relies on the skills of the researcher but also on the users of the analysis. The skills in longitudinal analysis appear to vary across various academic fields. For example, anecdotal evidence suggest that in Australia researchers in the labour and economic area have more experience in using longitudinal data and analysis techniques. Most analysis of LSIA had been undertaken on the economic and labour components with other data areas being underutilised.

There is substantial and rapidly expanding literature on the analysis of longitudinal data. Common themes in the analysis of longitudinal data are:

- measurement of gross change
- analysing relationship between variables
- survival analysis
- transition analysis
- estimation of spell durations
- multilevel modelling
- structural equation modelling.

Longitudinal analysis is often more complex than cross-sectional analysis and requires skills beyond basic statistical analysis, especially if imputation procedures are used.

Issue 4: Cost and Resources

For longitudinal surveys there are additional costs to those incurred in a cross-sectional survey. Buck, Ermisch and Jenkins (1995) noted that the following factors may serve to increase costs relative to cross-sectional survey:

- declustering of original sample over time
- response rates
- panel maintenance.

The other area of increased cost is in the development phase of the survey. As noted earlier, the decisions made in the first panel impact on subsequent waves and it is important to get the survey right from the first wave.

The declustering of the original sample can remove some of the economies in interviewer travel times and time created by the spatial clustering. This will depend on the level and pattern of migration and the density of population of interviewers trained to work on the survey. The movement of individuals from urban to rural will have a bigger impact on costs and the availability of interviewers.

As noted, high response rates are crucial to the long term viability of the survey. Additional fieldwork procedures are required to ensure high response rates; this includes interviewer training, multiple calls and refusal conversions.

Panel maintenance requires continuing year round activities to maintain contact with respondents, to make repeated mailings and to implement tracing and tracking procedures. In some cases, it may be necessary to consider using incentives to maintain long term response rates.

The other issues that need to be considered are the quality of the sample frame and other risks involved, very briefly described below.

Quality of the sample frame

The quality of the sample frame is an important consideration. The sample frame is the list of immigrants from which the sample is to be drawn.

Initial contact information for previous LSIA cycles came from DIAC's Settlements Database (SDB).

A review by the ABS's National Migrant Statistics Unit (NMSU) of the SDB in 2006 showed that 72% of entries had a complete residential address but this varied by visa category:

- 88% of humanitarian migrants had a complete address
- 78% of family migrants had a complete address
- 65% of skilled migrants had a complete address

This indicates that skilled migrants are more mobile than other categories of migrants. Humanitarian migrants use more government and non-government support services and thus will be easier to track over time.

Despite the above frame issues, there is no conceivable alternative to the SDB as the source of the sample frame for a survey. Analysis by the NMSU in July 2008 shows that only 0.3% of households would contain a migrant of interest as defined by the previous waves of the LSIA. An area-based sampling method would need to contact 330 000 households to obtain the same sample sizes as previous LSIA cycles.

The cost implications alone, let alone the logistical improbability of such an operation, rules out area-based sampling. Even relaxing the time-of-arrival criterion yields 50,000 households as a minimum contact pool, which is one-and-a-half times the size of the ABS's Labour Force Survey.

During discussions between the ABS and DIAC in 2008, four methods for maintaining the address field on the frame were raised. These were:

- use of an initial recruitment letter or arrival wave – either including some LSIA information in the visa application process or using a short survey (the “arrival” wave or Wave 0) that collects basic demographic information
- continued use of the ‘friends and relatives’ strategy from LSIA 3 – asking respondents for the number of a friend or relative in Australia in Wave 1 who can be contacted if address information becomes out-dated;
- making ‘intended address’ a compulsory item on all visa application forms – however intended addresses may genuinely not be known or can change before or shortly after arrival; and
- utilising a broader range of administrative data – e.g. from ATO, Centrelink and the Migrant Resource Centres.

Project risks

Panel survey waves are dependent on future funding. Between waves there can be changes in government policy (and governments) which may make data less useful (e.g. redefining a visa type/eligibility); also, changes in government may mean that the variables chosen for the first wave may no longer be the dimensions of interest for subsequent waves.

Conclusion

This paper explained the merits and disadvantages of various survey designs concerned with measuring subjects over time. A repeated cross-sectional survey, with its probability samples of a population at a point in time, provide better population estimates at each point in time. A longitudinal survey, on the other hand, will track the same individuals at every point in time, allowing for studies of the dynamics and changes happening at the individual level.

The research objectives or the policy issues that the decision makers want to address should determine the design chosen. Data from a longitudinal survey or from an administrative data source may answer some questions related to changes at the individual level. It can shed light on changes in the migrant's circumstances between successive waves. It can provide an understanding of how and why programs facilitate settlement outcomes, in the context of

changing circumstances. Because the same individuals are followed over time, it can make the crucial distinction between transitory and persistent characteristics and study flows or transitions between states or circumstances, e.g. from being unemployed to employed, and the duration of each circumstance.

The above would likely to be achieved if respondents could be effectively and efficiently tracked over the life of the survey. In addition to attrition, the list of issues for consideration when planning a longitudinal is wide-ranging. There are issues to consider around the panel, e.g. length of the panel; length of the reference period; number of waves; overlapping or non-overlapping panels; and size of panel. A few methodological issues need to be carefully considered, e.g. sample size, dealing with non-response and unit of collection and analysis. Content consideration must also be given to ensure that concepts will be consistent over time.

There are also risks to be considered, such as changes in priorities between waves. Cost will be a major consideration. Longitudinal surveys are more expensive and have greater risks attached, but can be tailored much more easily to answer specific research questions.

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2. Horses for Courses: The pros and cons of short policy focused surveys versus longitudinal collections

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Introduction

In the past few years the Department of Immigration and Citizenship (DIAC) has commissioned a number of small, one-off surveys to evaluate the performance of its programs. This is an approach that is both:

- **Resource intensive** – setting up a survey involves a lot of work with approvals from Ministers required, tenders to be evaluated, privacy concerns to be addressed and contracts to be signed before any real work begins and
- **Wasteful** - with the results of all this effort have limited application in other parts of the department's business.

The *Continuous Survey of Australia's Migrants (CSAM)* uses a different approach and represents a smarter, more strategic way of thinking. So rather than limit itself to narrow range of DIAC clients, the CSAM encompasses all family and skill stream visas, and has sufficient capacity within it's questionnaires to enable emerging issues to be evaluated.

In its current form however, the CSAM is still only a survey with limited aspirations. A standard set of questions with an economic focus find their way into every CSAM survey, and questions concerning other policy issues are included and analysed in a fairly simplistic way on an occasional basis. The cause and effect aspects of policy remain the domain of more sophisticated survey methodologies.

With this in mind (and to paraphrase Shakespeare), the purpose of this paper is neither to bury nor praise CSAM, instead it is to provide an honest assessment of the survey.

To do this we first learn a little more about the survey's methodology and objectives, followed by discussion on the strengths and shortcomings of the survey from a range of different perspectives.

Finally we consider the future of this type of survey and whether it complements or competes with a fully-fledged longitudinal survey.

What is the CSAM?

The CSAM is a new survey administered by DIAC that is mostly designed to provide timely information on the labour market outcomes of recent migrants from the Family and Skill Stream. Breaking this statement down into its components:

CSAM is a survey of recent migrants

It comprises:

- Migrants who arrived in Australia on an offshore visa around six months earlier and
- Migrants who were granted a permanent visa onshore about six months earlier. These particular migrants are people already living in Australia on a temporary visa such as a student or subclass 457 visas, and who make the transition to permanent residence.

CSAM is a survey of Family and Skill stream migrants only

Humanitarian migrants are out of scope of the CSAM largely because these migrants face a much wider range of issues than your typical skilled or family migrant. A survey like the CSAM, which is intended to be non-confrontational and straightforward, would not adequately cover the range of highly sensitive and personal issues these migrants face.

CSAM is mostly designed to measure labour market outcomes

The CSAM does have a strong economic focus with questions on labour force status, income and occupation enabling us to measure the productivity and participation of different migrant groups. While this is a very narrow objective there is sufficient spare capacity in the CSAM questionnaires to gather information on other topics such as qualifications assessment, housing issues and use of government services².

How is it run?

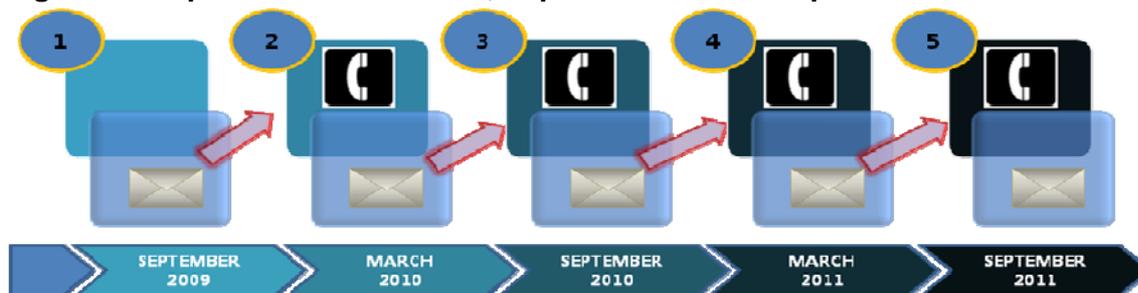
Operationally the CSAM is run like a monitoring survey, with migrants surveyed on two occasions

- There is a mail out survey of migrants who are in scope of the survey – either arriving or being granted their permanent residence visa within the last six months and
- These same migrants then take part in a follow-up telephone survey six months later.

As well as this, a new cohort of migrants is introduced into the survey every six months. This means that while one cohort of migrants is being surveyed via the follow up telephone survey – a newly introduced cohort is being surveyed in the mail-out survey.

This process of introducing new migrants and following up previously migrants surveyed is then repeated every six months (Figure 2.1).

Figure 2.1: Operation of the CSAM, September 2009 to September 2011



² A copy of the CSAM questionnaires is at Attachment A.

It should also be noted that this mixed methodology is forced on us to some extent. Extracts from DIAC's administrative systems that are used to provide the survey sample-frame only contain people's name and address. Therefore it is not possible to run the entire CSAM as a telephone survey. Instead the mail out survey is used to collect people's contact phone numbers, and this contact information is then fed into the telephone survey.

Scale of the CSAM

For each mail-out survey, forms are sent to approximately 8500 recently arrived primary applicants along with an accompanying approach letter. Following this is a 10 week fieldwork period, during which two reminder letters are sent. At the end of the fieldwork phase, around 4000 completed survey forms are received – a response rate of just under 50 per cent.

Six months later, these 4000 respondents are approached to take part in the telephone survey. The success rate for this exercise is about 80 per cent – meaning that 80 per cent of respondents were successfully contacted and agreed to take part in the follow-up survey.

Table 2.1: Parameters of the CSAM

Scope of the survey	Skilled and Family stream only
Who we survey	Onshore migrants granted visa 6 months ago Offshore migrants arrived in Australia 6 months earlier
Survey method	Mail out survey followed by telephone survey 6 months later
Current funding	September 2009 to September 2011
Approximate survey size	4000 mail out respondents 3200 telephone respondents
Frequency	Every six months

Positive features of the CSAM

The CSAM is an attractive survey from a financial perspective, in meeting the needs of policymakers, in its analytical potential and in terms of low respondent burden.

The financial point of view

The CSAM is a very cost effective survey. The budget for the first two and a half years of the project is well under a million dollars which translates into a cost per respondent of around \$33. There are two reasons for this. First running a short mail out survey followed by a more detailed telephone survey enables a lot of information to be gathered and processed quite cheaply. Second, because the survey is so straightforward, considerable savings can be made by doing most of the data analysis and reporting in-house.

The respondents' point of view

The CSAM is kind to respondents. Questions in the survey are mostly very straightforward and should not require people to look through personal records, payslips or financial statements. Respondent burden is further reduced by capturing people's demographic information beforehand from DIAC's administrative systems.

The mail out survey in particular is very easy to do. It is a three page questionnaire containing only about 40 very simple questions pages and should take the typical respondent only about 10 minutes to complete.

The mail-out survey's benign nature is intentional. The survey is completely voluntary and choosing not to participate has no impact on people's other business with the department. Therefore making the survey as simple as possible is one of the ways that people are encouraged to take part³.

As mentioned previously the telephone survey also allows more in-depth information to be gathered. Furthermore because the telephone questionnaire is actually a computer assisted telephone interview (CATI) it can incorporate sequencing instructions to enable targeted questions to be asked of particular migrant subgroups. This adds to the efficiency of the survey and enables the average 15 minute telephone survey to gather a considerable amount of detailed information.

The policy makers' point of view

The main selling point of the CSAM is that because of its frequency and its simplicity it can deliver timely findings to its primary stakeholders – the Minister and DIAC policymakers. Findings from the CSAM should never be more than six months out of date and will therefore keep abreast of changes in the Migration Program. This is far better than the previous situation where the department had relied on results drawn from its third longitudinal survey – findings that were more than three years old, and which predated the Global Financial Crisis and the 2007 reforms to General Skilled Migration.

Another benefit is that it enables outcomes for different migrant groups to be evaluated, enabling policy decisions to be justified (if the findings are favourable) or reviewed (if they are not). For instance the first round of the CSAM demonstrated the labour market virtues of employer sponsorship – with 60 per cent of employer sponsored migrants being placed in management or professional occupations, 90 per cent in skilled employment and an unemployment rate of just 1 per cent.

The survey also showed that the outcomes of Independent GSM migrants from offshore were good as well, with more than nine in ten employed and of those employed; more than 90 per cent were in a skilled job. This was a good outcome, given that these migrants arrived and had to find work in Australia at the height of the economic downturn.

On a less positive note the survey showed that GSM migrants who received an onshore visa were less likely than other skilled migrants to secure full time employment and far less likely than other skilled migrants to secure full time employment in a skilled job. One reason for this is that a large proportion of onshore migrants are relatively young, former international students with limited work experience. It has been noted in previous research that these migrants do have difficulties finding skilled work.

The CSAM is also a very flexible survey. Only about half of the survey questionnaire is taken up with core-questions on labour force status, income, occupation and English proficiency, so there is always some spare capacity to ask additional questions on an adhoc or semi-regular basis. Policy makers can get involved in this process, contributing questions to the survey to address a particular program issue or get a better understanding of an emerging topic (Table 2).

³ The other thing that is done to encourage higher response is a prize-draw

Table 2.2: Topics introduced to CSAM on an occasional basis

Round 1	Round 2	Round 3
Reasons for migrating to Australia	Analysis of people's location choices	Community participation
Evaluation of skilled migration expos	Pathways to employer sponsorship	Settlement and wellbeing
Evaluation of qualification assessment process	Satisfaction with job	Evaluation of DIAC's Skill Matching database

The utility of the CSAM is further enhanced from a policy-makers perspective because it can be easily linked back to other DIAC administrative data. For example administrative data on skilled migrants points test scores has already been linked with their employment outcomes from the CSAM to help in the re-design of the GSM points test. It would also be possible to link CSAM survey data with people's visa history to see what sorts of pathways from temporary to permanent migration are associated with better labour market outcomes.

The analysts' point of view

The CSAM can be thought of as a series of small surveys run at regular intervals. Because of this there are three different ways in which the data can be analysed.

- Data can be analysed longitudinally – Migrants are surveyed on two separate occasions, meaning for example that we can determine how migrants' employment outcomes at the 12 month stage of settlement compare with their situation six months earlier. The extent of this analysis is of course very limited as we only have two closely spaced waves of longitudinal data.
- Data can be analysed cross-sectionally – For example the labour market outcomes of a group migrants surveyed in September 2011 can be compared with similar groups arriving earlier, producing a time-series of outcomes.
- Data can be pooled – Because the surveys run so close together data from consecutive cohorts can be combined to produce a much larger cohort. The advantage of doing this is that it introduces the potential for analysis at the State level or more robust particular migrant-groups.

Shortcomings of the CSAM

With such a simple, cost-effective methodology there are trade-offs in terms of the analysis that can be undertaken.

First, because the CSAM only covers a twelve month reference period it is not suitable for measuring people's long term settlement outcomes.

Second, the CSAM is not a measure of causality. With a comprehensive 'face to face' longitudinal survey there is the opportunity to collect a very wide range of detailed information that can then be used to determine the relative importance effects of interventions on outcomes. For instance it would be possible to distinguish if it was English language courses and better English skills that resulted in better employment outcomes or whether the presence of a strong local community network was a more significant factor.

In contrast the CSAM can only measure the actual outcome, and use descriptive statistics to associate it with characteristics like English language skills, country of origin, age and birthplace.

Third, the CSAM does not include all migrants. This is happening in two respects.

- The CSAM does not include Humanitarian migrants for the very good reason that they face issues that are markedly from other migrants. If the CSAM was to include these migrants there would be significant additional costs – not just because of the extra survey data that would need to be collected and processed, but also through higher unit-costs due to longer telephone interviews and increased use of interpreters.
- The CSAM only asks questions of the Primary Applicant. This is for two reasons. First it makes running a telephone survey more efficient if the interviewer is talking to just the one person; second it saves around 50 per cent on running costs. The downside of this is that the experiences of the spouse and other members of the household unit – which can be very different than those of the Primary Applicant are not directly captured. The CSAM does attempt to cater for this by asking the respondent to provide answers on behalf of their spouse, but this is far from an ideal solution.

With a response rate of just under 50 per cent to the mail-out survey, the CSAM performs quite well by the standards of other voluntary surveys. This can be attributed to the fact that the survey comes across to potential respondents as a DIAC product and a perception by respondents that they 'owe something' to the organisation that facilitated their entry into Australia.

A response rate of less than 50 per cent does of course mean that more than half of the potential sample is not responding. This leads to legitimate concerns about survey bias. This bias is partially offset by weighting the survey data against known variables such as age, origin and reporting category.

Another issue is the variable quality of the name and address data from which the sample is drawn, with quality concerns taking two forms:

1. **Enumeration** – More than 90 per cent of onshore migrants have a valid Australian address. Compared with just over two-thirds of offshore migrants. In the case of migrants on provisional business skills visas the proportion of valid addresses is even lower at just 25 per cent. These rates are so low in fact that passenger card records need to be interrogated just to provide enough valid name and address records to produce an adequate sample size.
2. **Currency** – Addresses are based on extracts from DIAC's Settlement database, a database that is regularly updated via DIAC's change of address form, Medicare address updates and from enrolments data from the Adult Migrant English Program. The likelihood of an address being up to date will therefore depend on whether a migrant had submitted their change of address and their engagement with AMEP providers and Medicare.

Importantly, it should also be noted that these concerns would also apply to any longitudinal survey that was drawn from DIAC administrative data.

Horses for courses?

The CSAM is truly a survey that is fit for purpose. The attributes that make it successful however – its timeliness, flexibility and simplicity are the very things that we could not expect from a longitudinal study.

A longitudinal survey or other similar study would instead unlock a lot of relevant policy information, particularly in understanding the effects of interventions. It would however, represent a very significant financial and resourcing commitment – although some of these costs could be defrayed by entering into partnerships with other agencies.

Policymakers would also have to be very patient as it would take several years for findings to be released. This delay might then introduces a lag effect where the cohort being reported in a longitudinal survey is a snapshot of a Migration Program structure from a few years earlier that doesn't reflect the current program. Also if a longitudinal survey is being run face to face it may not be possible to provide proper representation at the regional level.

Because both surveys have differing policy objectives and because neither offers the complete survey solution there is a strong argument for both to exist. The CSAM would therefore continue to focus on providing timely analysis of specific policy issues. The longitudinal survey on the other hand would address an information gap that has existed for almost a decade providing the evidence-base for in-depth research on 'classic' integration and settlement issues that have long-term policy value.

Finally there is potential to improve the CSAM by including Humanitarian migrants and to go beyond the first year of settlement. As the basic infrastructure of the CSAM is in place this could be done relatively cheaply and would help fill in some information gaps while waiting for a longitudinal study to be established.

While cost-effective, the following limitations would still remain.

- We would only survey the primary applicant
- The telephone interviews would be short and it would be inappropriate to ask sensitive questions of Humanitarian applicants.
- Attrition between survey waves would be more of a problem. Therefore more effort would need to be put into tracking of respondents.

As there are more survey waves, the response rate in the mail-out survey would also need to be improved. This could be done by reminder phone calls to non-respondents. Products like Macromatch which would match name and address information against White Page databases to generate phone numbers would help in this process.



3. Running longitudinal surveys: the New Zealand experience

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Background to the Longitudinal Immigration Survey: New Zealand

The Longitudinal Immigration Survey: New Zealand research programme grew from concerns in the early to mid-1990s about the lack of information available to assist in facilitating positive settlement for migrants, and the need for a detailed assessment of the impact of immigration on New Zealand.

International immigration research has demonstrated that one of the most effective ways to obtain policy-relevant and timely information on immigration and settlement is through longitudinal studies. Longitudinal studies are used to collect information from a sample of migrants on several occasions, thus capturing an understanding of the complete dynamics of the migration and settlement processes. Governments in Australia and Canada initiated such studies on immigration and settlement in the 1990s, and these surveys have been instrumental in the development of the LisNZ.

In 1997/98, the Department of Labour proposed that a comprehensive evidence base involving a longitudinal immigration survey was required if it was to robustly track migrant outcomes and develop informed immigration policy.

Early work on the New Zealand survey focused on identifying the options for longitudinal research and examining the feasibility of those options. In June 1999, the Government approved the LisNZ, and Statistics New Zealand (SNZ) subsequently became the Department of Labour's partner in developing and undertaking the survey.

It was agreed that the research needed to fulfil a number of criteria including to:

- be useful for broad policy development
- be generalisable, allowing inferences to be made regarding other migrants
- be a substantial long term project which will provide information about migrant settlement and outcomes over time
- have short term information gains such that, amongst other results, there are reasonably rapid information gains which can be used for policy consideration purposes and
- be useful for long term monitoring such that any future projects could potentially build on the initial results.

A pilot survey was conducted in 2001 and 2002, with its findings published in 2004. The main purpose of the pilot survey was to test the survey methodology and questionnaire in the field in preparation for the main survey. This pilot study also allowed for a test of the electronic questionnaire and survey methodology, including ways to establish and maintain contact with those migrants taking part in the survey.

About the LisNZ Survey

The LisNZ project involved interviews with the same group of migrants at three ‘waves’ – six months (wave 1), 18 months (wave 2), and 36 months (wave 3) after they have taken up permanent residence in New Zealand.

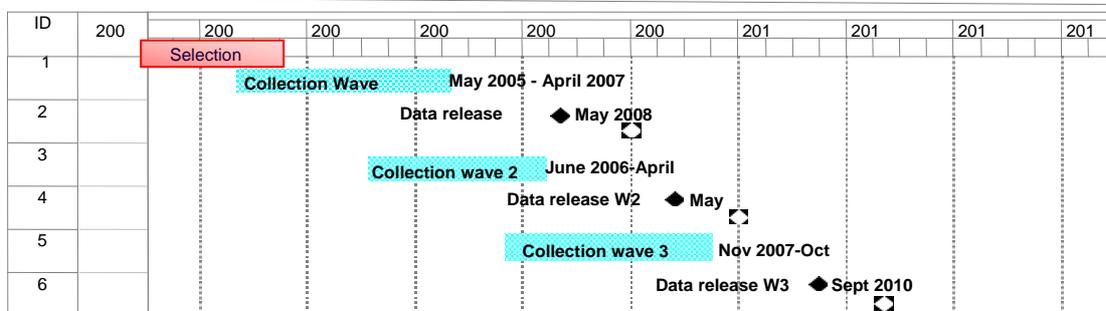
The survey sample was selected from migrants who were approved for permanent residence in New Zealand from 1 November 2004 to 31 October 2005. The wave 1 interviews were conducted between 1 May 2005 and 30 April 2007. The wave 2 interviews were conducted from June 2006 to March 2008, and the wave 3 interviews were completed in October 2009. The full survey achieved over 5,000 completed interviews at wave 3.

Despite all efforts to locate migrants selected for the survey, a number of migrants could not be interviewed for a variety of reasons. From the 12,202 migrants selected for the first wave, 217 were not eligible to take part in the survey, 145 did not arrive in New Zealand in time, and 984 had no initial contact address in New Zealand. Of the remaining 10,856 migrants, 7,137 were interviewed at wave 1. This corresponded to a 66 percent response rate.

Most of the ‘non-response’ at wave 1 was due to non-contact (84 percent) rather than refusal by respondents. Non-contact was particularly high for migrants who were approved offshore, where the response rate was 57 percent, compared with 70 percent for those approved onshore.

Of the 7,137 migrants interviewed for the first wave, 6,069, or 85 percent, were interviewed at wave 2. Of the 6,069 migrants interviewed for the second wave, 5,144 were interviewed at wave 3. This corresponds to an 85 percent response rate.

Table 3.1: Collection Waves



The target population for LisNZ included all migrants (excluding refugees) aged 16 years and over who were approved for permanent residence in New Zealand. The population included those who were approved for residence offshore as well as those approved onshore. Migrants were sampled at the time they were granted residence. Migrants who are approved offshore have 12 months from the date of their residence approval to arrive in New Zealand and take up residence.

Specifically, the survey included all people granted residence through the:

- Skilled category
- Business category
- Family category (includes the Family Partner and Family Parent)

- Pacific Category (includes migrants from the Pacific Access Category and Samoan Quota).

The population included principal applicants and secondary applicants from the approved application. The population excluded temporary visitors and people from Australia, Niue, the Cook Islands, and Tokelau, as they don't require a permit to live and work in New Zealand. The sample frame was constructed from Immigration New Zealand's administrative databases.

The design for the main survey was a stratified random sample using strata based on the three variables:

- immigration category
- region of origin
- type of application (offshore/onshore).

Key Objectives of the LisNZ

The broad objective of the Longitudinal Immigration Survey: New Zealand was to gain knowledge about the initial settlement experiences and outcomes of migrants. This knowledge has been, and continues to be, used to assess the net benefits of immigration, and to improve immigration selection and settlement policies. The core focus is to investigate how outcomes and experiences vary between groups of migrants, and by different selection or settlement factors.

We are interested in identifying differences that may be amenable to policy change; that is where benefits from immigration could be increased through possible changes to:

- selection criteria and / or systems (including changes in immigration levels)
- support systems for migrants following arrival in New Zealand.

The following key objectives were identified by the DOL and a wide range of other agencies and groups for the LisNZ:

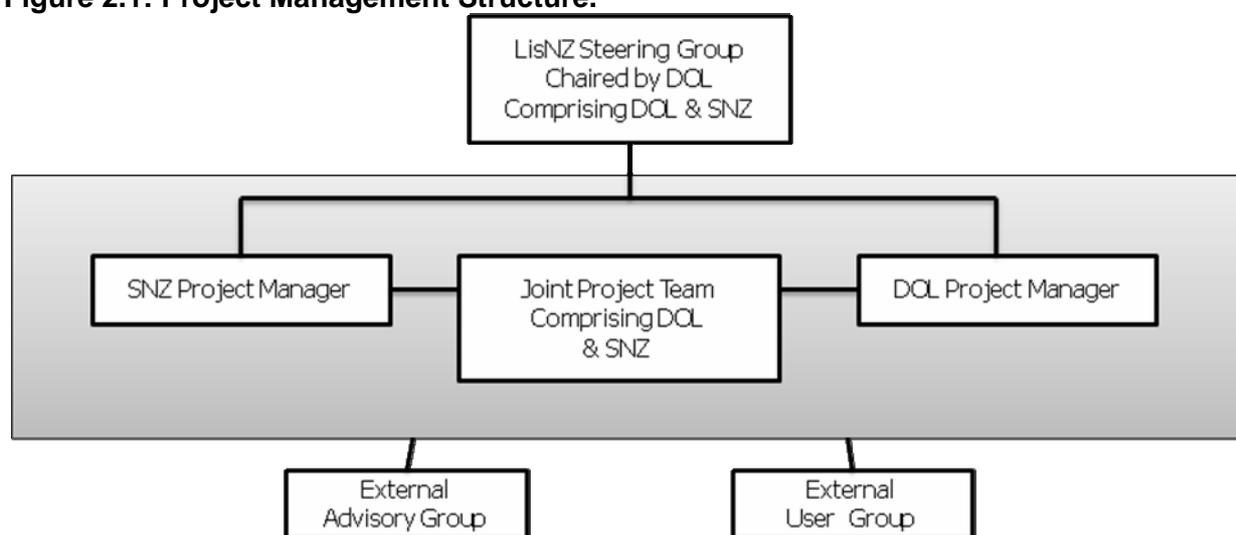
- To describe key individual, family, household and other general characteristics of migrants
- To describe the reasons for migration, migration information sources used, locations chosen within New Zealand, and perceptions of and satisfaction with New Zealand
- To describe the types of housing used by migrants, the problems experienced in accessing suitable housing, and satisfaction with housing in New Zealand
- To describe migrants' labour market experiences and identify issues associated with labour market integration
- To describe the characteristics of migrants involved in business and the nature of their business activities
- To describe levels of personal and business assets brought to New Zealand, and levels of migrant income and expenditure
- To identify levels of English language proficiency, issues relating to language proficiency, and English language acquisition and training for migrants
- To describe levels of schooling and qualifications on arrival, factors affecting use of qualifications, participation in schooling and further education and training in New Zealand, and issues related to schooling in New Zealand
- To identify migrants' need for and use of government and / or community social services and health services, and difficulties experienced in accessing these services

- To describe the social networks which migrants develop, identify factors affecting the establishment of these networks, and investigate some initial indicators of settlement
- To identify migrants' perceptions of their health status
- To collect key information on partners of migrants which can be analysed as characteristics of the survey respondent.

Governance Structure

The LisNZ Survey is managed by Statistics New Zealand and the Department of Labour in accordance with the management structure depicted in Figure 2 below.

Figure 2.1: Project Management Structure.



The LisNZ Steering Group is chaired by the Department of Labour and has the primary responsibility for overseeing the work in the survey, determining issues critical to the survey, monitoring the progress of the survey, and setting the ongoing direction of the survey.

An external user group was established to keep key stakeholders with a strong interest in the survey informed about Survey progress and provide an opportunity for them to provide feedback to DOL and SNZ on this progress. This was an informal group of agencies, groups and individuals with an interest in the survey that meet periodically on an as needed bases.

The external advisory group provided advice and review on the various components of the survey. This group played a major role in determining the content of the survey and assuring its high quality development. The areas of the survey covered by the advisory group included contributing to its content (through informing the identification of information needs), questionnaire development, sample design, longitudinal survey design, and ethics.

Core Policy Questions and Contributions from the LisNZ

Residence policy concerns the allocation to individuals of the right to enter and remain in New Zealand, and to participate in the labour market and in society generally. In seeking to maximise the national advantage from (permanent) immigration, the government has four types of tools at its disposal:

- control over the absolute level of residence approvals
- selection of different types of migrants (including indirect selection influences, such as through marketing)
- provision of post-arrival services to assist migrants to settle and
- imposition of post-arrival requirements and conditions (e.g. restrictions on access to welfare, investment requirements for business migrants).

The information needs addressed by the LisNZ survey focus most on the last three of these policy tools, although there are also some links to the macro question of the optimal level of new migration, particularly in the areas of assessing the overall net benefits from immigration. In designing policies using these tools, the key questions typically involves both the choice of policy instrument and, within that, the effects of different specific policy options.

For example, we need to know how important English language is relative to other factors in determining migrant outcomes to decide whether it should be a factor in immigration policy. Then we need information about the likely impact of different policy options in order to choose between provision of post-arrival English language assistance, or one of various selection mechanisms that encourage selection of migrants who are able to speak English.

The core policy questions relevant to the LisNZ project follow from the tools available to Immigration Policy to influence immigration outcomes. The core questions have been identified as:

- What are the settlement processes and outcomes for migrants under present immigration policy and how do they impact on national advantage?
- What would the impact be of alternative selection criteria or systems (including changes to immigration levels) on national advantage?
- What would the impact be of increased / alternative settlement support systems for migrants following arrival in New Zealand?

The LisNZ provides us with critical information for developing effective immigration policies and settlement services by:

- examining how outcomes (social, economic) vary among groups of migrants and over time
- identifying the settlement needs for different groups of migrants over time
- comparing migrants' outcomes to those of the existing NZ population (Census, HLFS)
- assessing how migrants are doing in NZ compared to migrants in other countries (i.e., Australia, Canada).

Informing Strategic Policy and Service Delivery

Research findings from the LisNZ have had an ongoing contribution to a number of immigration policy areas. In addition, through regular consultation with policy makers, a number of LisNZ research projects have been directly aligned with a number of priority areas. These policy areas include the following:

New Zealand Residence Program (Size and Composition), and Review of Skilled Migrant policy

Results from the LisNZ focusing on the labour market integration of migrants from different sources (i.e., region of origin), and by differing selection criteria (i.e., immigration category) provide ongoing information to policy development. For example, recent findings from the longitudinal survey have provided information to the New Zealand Residence Programme, and are currently also contributing to the Review of Skilled Migrants policy.

Pacific Review

LisNZ data investigating pacific migrants' settlement and participation in the labour market at 6 to 18 months after taking up permanent residence has contributed to policy development through the Pacific Review.

Review of pathways to work and residence

One of the government's priority areas involved the role of international students in New Zealand. LisNZ results have contributed to a piece of research entitled, International Students Transitioning to Permanent Residence, which examines the social and economic integration of international students who have transitioned from study to work and residence in New Zealand.

International collaborations

The LisNZ programme has also involved a number of international collaborations using data from other long term surveys from Australia and Canada. These projects include current research partnership with DIAC to undertake the New Zealand/Australia Comparative Skilled Migration Project, and a Metropolis study entitled International Competition for High Skilled Migrants, examining international competition for migrants using data from Canada, Australia, and New Zealand.

Settlement Issues

Another focus of the Department that the LisNZ data has contributed to involves the area of settlement. A number of projects are underway examining migrant settlement and experiences, including studies looking at regional differences among migrant settlement, and family settlement.

Lessons Learnt and Issues to Consider

The development of the LisNZ presents a number of complex issues. These issues need to be addressed through the survey design and development processes and include:

Variable Selection

Refinement of information needs during questionnaire design. As the questionnaire was developed and tested some of the information needs were modified. The feasibility of collecting information on some topics was also tested. The interview length impacted on the number of information needs which were ultimately included in the questionnaire. Although key variables were selected to maximize the utility of the survey and minimize respondent burden, the questionnaire was still lengthy, taking up to 80 minutes to complete.

Scope of the Survey Population

Consider whether to include refugees, and/or temporary migrants in addition to the permanent resident population. The LisNZ included only permanent residents (onshore and offshore applicants), and excluded temporary migrants and refugees since the experiences of these two groups were considered to be substantially different, and outside the scope of the LisNZ framework.

A large proportion of permanent residents to New Zealand, however, tend to apply from onshore, and have therefore spent a significant period of time living and/or working in New Zealand prior to taking up permanent residence. The variation of time migrants have spent in New Zealand will need to be taken into consideration during the analytical phase of the research.

Other Data Sources

Consider whether data is available through other sources. Can key administrative data be linked to the survey (e.g., demographic and movement data)? The LisNZ has added additional information from our administrative migration system to the survey file allowing us to identify whether participants in the survey have left the country long term, but further matching may have been beneficial (e.g., records of previous permits held).

Respondent Management

Consider how contact with migrants will be maintained over the survey period. The methods used in the LisNZ for tracking respondents who moved residence between waves was carefully monitored throughout the entire survey timeframe. This improved our response rate and allowed us to estimate attrition rates more accurately. The techniques adopted involved a multi-method computer tracking approach that included: 1) use of named contacts such as sponsors or employers; 2) telephone directories, electoral rolls; 3) data held by NZIS or SNZ; 4) voluntary notification of change of address such as change of address cards, and free phone numbers to call; 5) contact with respondents between waves such as a telephone call, as an early indication that tracking needs to occur. The survey development may also consider including a follow up question for participants to allow for further data collection if desired.

Timeframes

Consider the timeframe for the carrying out of a longitudinal survey. Timeframes should be considered carefully, both in terms of length of time that will be required to plan and carry out the survey, and in terms of the effects that time may have on the relevance of the information to be collected. For example, longitudinal information that was originally designed to respond to particular policy questions is susceptible to policy changes that can influence applicability of the findings.

Data Access and Dissemination

Consider who will have access to the data. Stakeholders' ability to access data for research purposes will have a significant impact on the management of resources required for the dissemination of the findings. For example, data that is collected by the official statistics system such as the LisNZ (run by Statistics New Zealand and therefore covered under the Official Statistics Act 1975) can only be accessed under regulated conditions. For example, researchers must use the data lab and international use of the LisNZ data is impossible under the current SNZ structure. While there are many strengths to conducting Statistics New Zealand run surveys, including high quality data and good response rates, the data may be less accessible and more costly to access for researchers.

Budget Allocation

Consider what resources will be needed over the course of the survey and at what stage to allocate more or less resources. The costs of different stages of the survey development,

implementation, and reporting should be considered to allow for appropriate allocation of funds to ensure that there is sufficient funding to complete each phase.

The costs for a longitudinal survey are higher than those for a cross-sectional survey. This is partly because methodologies for longitudinal surveys are more complex. There are a number of extra costs to be considered when running a longitudinal multi-year survey, including:

- Computer processing system development—the system needed to capture, edit, weight and output data is more complex for longitudinal data. Records for respondents have to be able to be linked across time. Different weights are required for each interview period and for the analysis of cross-sectional data.
- Sample design—the sample design is more complex because of the need to accurately measure changes across time. For the longitudinal survey the population will enter the country while the sample is being taken, therefore the final population size must be predicted ahead to ensure that the correct sample size is achieved.
- Survey design—for the longitudinal survey, this includes development and testing of the methodology to track respondents who move as well as development and testing of the initial contact method. Included is the cost of developing a small gift (for example a calendar or key ring) to be provided to each respondent, as an aid in running the survey and to assist with tracking. Also included is the cost of training interviewers and supervisors, including any required training in cultural issues.
- Set up and management—the length of the development time and complexity of the task means that full-time project management is required. Also included is the cost of providing publicity for the survey, which will be important to maintain response rates over time.
- Interview costs—other operational costs for longitudinal surveys include:
 - interviewer time;
 - travel time to conduct interviews, and pre-interview or mid-wave contact;
 - tracking respondents who move;
 - cost of data capturing and editing the completed questionnaires.

Conclusion

This presentation highlights many of the key lessons learned from the LisNZ, and some of the challenges that have been faced in applying relevant survey information to policy.

Findings from this survey will continuously be used to inform the development of immigration policy. In addition to informing immigration policy, the findings will assist a variety of government agencies and community groups to develop services that will contribute to effective and positive settlement outcomes for migrants.

With these aims, the Department of Labour will be releasing ongoing special topic reports based on the LisNZ that address priority areas. These reports will contain more detailed analysis of key policy issues, thus providing valuable input into the policy review process.

4. How Longitudinal Surveys Will Enable us to Identify Service Gaps, Develop more Effective Policies and Deliver Better Services to Refugees and Other Vulnerable Migrants

Professor Graeme Hugo

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Introduction

Australian migration and settlement policy over the post war period has benefited greatly from insights gained from longitudinal surveys. This has especially been the case for the Longitudinal Survey of Immigrants to Australia (LSIA) (Hugo, 2004) but also the earlier work of Appleyard (1962a and b, 1964, 2009) and Appleyard, Ray and Segal (1988). Other studies included the work of Richardson (1974), Beijer *et al.* (1961), Scott and Scott (1982, 1983, 1989), Kunz (1988) and some initiatives funded by the Immigration Department (Reark, 1985). In addition, insights into settlement has come from other longitudinal surveys of particular groups such as those undertaken by the Australian Institute of Family Studies, the Australian Longitudinal Survey on Ageing, HILDA and longitudinal surveys of youth and women (Hugo, 1999).

All migrants face challenges in adjusting to new conditions after they have settled in a destination but it is apparent that some groups are more vulnerable to experiencing difficulty than others. The first part of this paper outlines the major migrant groups arriving in Australia who are most at risk of experiencing difficulties in adjustment. It then argues that there is near unanimity among migration researchers globally that longitudinal approaches to researching migration provide a deeper understanding of the processes of migration and settlement than other methodologies and outlines some of the reasons for this. Then a number of key issues relating to the adjustment of vulnerable groups to life in Australia which need to be examined through a longitudinal survey are discussed. Finally, some of the lessons which have been learned from the Longitudinal Survey of Immigrants in Australia (LSIA) are discussed.

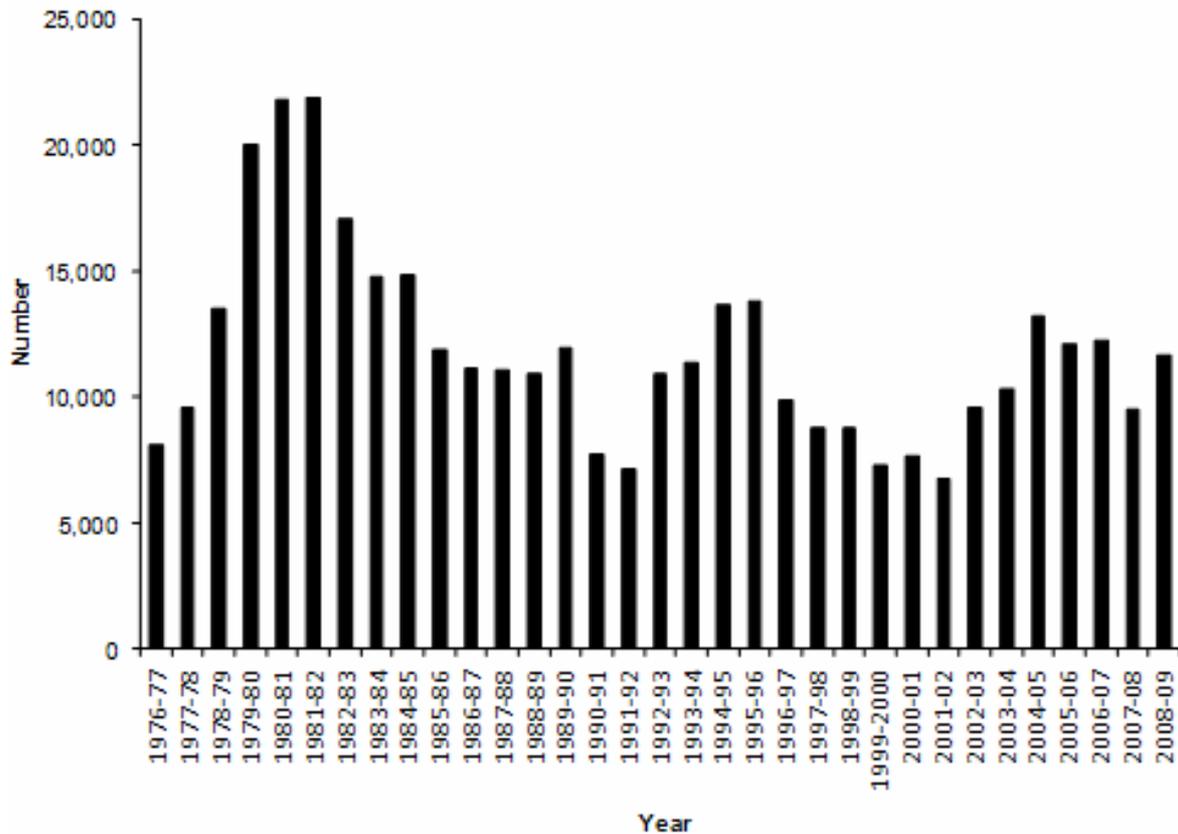
Vulnerable Groups in Australian Immigration and Settlement

International migration is seen by most migrants as a means for achieving a better life for themselves and their families and this is the major motivation for them moving. However, by virtue of the fact that immigrants are entering a foreign labour market, lack local knowledge, often lack social networks etc., they can have greater vulnerability than the non-migrant population. This vulnerability is magnified for refugee-humanitarian migrants because:

- They have by definition been forced out of their homeland and not moved voluntarily
- They often have been unable to prepare for migration to a new country
- They often lack the language, education and workplace skills to facilitate their entry to Australian labour markets or Australian society generally
- They often have experienced trauma
- They have been unable to repatriate their financial and other resources from their home country
- They often lack the family-based and other social networks in Australia of other migrants.

Inevitably then, as a group, they are more likely to experience difficulties in adjustment. The inflow of refugee-humanitarian settler arrivals since the introduction of the contemporary Australian migration system in the late 1970s is shown in Figure 4.1. The contemporary Australian permanent immigration program is a highly controlled one with the government each year setting caps on the family, skill and humanitarian migration intakes. Table 1 shows that the planning level for the number of humanitarian entrants was increased from 13,000 in 2007-08 to 13,500 in 2008 to 2009 and again to 13,750 in 2009 to 2010.

Figure 4.1: Humanitarian program arrivals in Australia, 1976-2009



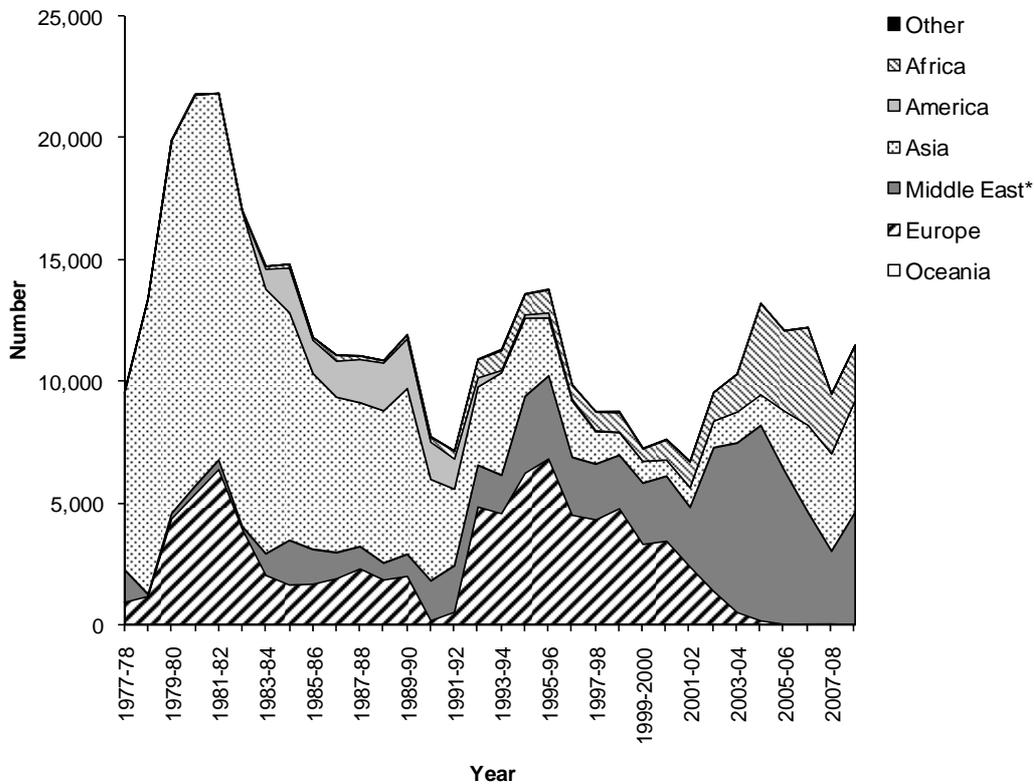
Source: DIAC, unpublished statistics; DIMIA, *Australian Immigration: Consolidated Statistics* and DIAC *Immigration Update*, various issues

Table 4.1: Australian Immigration Program: Planning Levels 2005-11 and Outcomes 2005-09 by Migration Program Category

Year		Humanitarian	Family	Skill	Special Eligibility	Total
2005-06	Planning Level	13,000	42,000	97,500	500	153,000
	Outcome	14,144	45,290	97,340	310	157,084
2006-07	Planning Level	13,000	46,000	97,500	500	157,000
	Outcome	13,017	50,080	97,920	200	161,217
2007-08	Planning Level	13,000	50,000	108,500	300	171,800
	Outcome	13,014	49,510	108,540	220	171,284
2008-09	Planning Level	13,500	46,500	115,000	300	185,300
	Outcome	13,507	56,370	114,780	180	184,837
2009-10	Planning Level	13,750	60,300	108,100	300	182,450
2010-11	Planning Level	13,750	54,550	113,850	300	182,450

Source: DIAC, unpublished statistics; Evans, 2010

Figure 4.2: Refugee and Humanitarian Arrivals to Australia by Region of Birth, 1977-78 to 2008-09



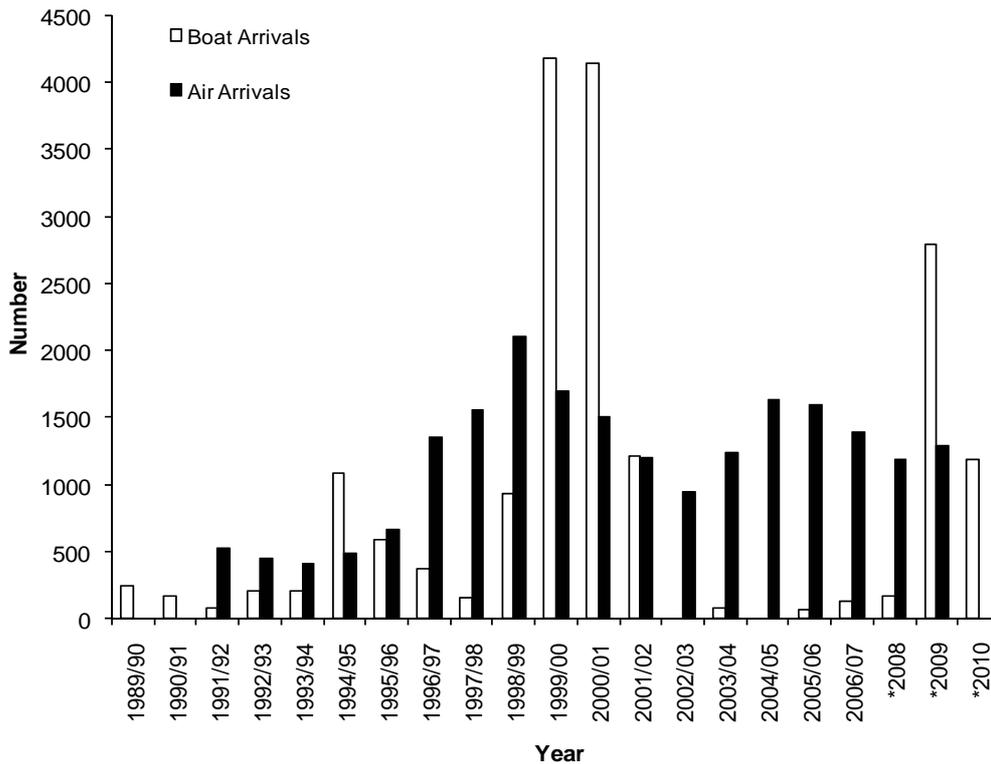
* Includes North Africa from 1990-91

Source: DIMIA *Australian Immigration Consolidated Statistics* and DIAC *Immigration Update*, various issues

The changing nature of the refugee-humanitarian inflow to Australia since the introduction of the sub-program in 1978 is depicted in Figure 4.2 which shows the numbers and region of origin of refugee-humanitarian arrivals settled in Australia since the Humanitarian Program was introduced in 1978. The peak inflows were experienced in the late 1970s and early 1980s when there were major inflows of Indo Chinese, and, to a lesser extent, Eastern Europeans.

Since then, however, it is apparent that the mix of regions of origin has shifted as Australia responded to refugee crises in different parts of the world with the Middle East and Africa increasing in recent years. A key feature of the refugee-humanitarian intake which is evident in Figure 4.2 is the ‘wave’ nature of the inflow with different particular groups being dominant in different periods in response to the outbreak of political upheaval in different parts of the world.

Figure 4.3: Australia: Unauthorised arrivals, 1989-90 to 2010

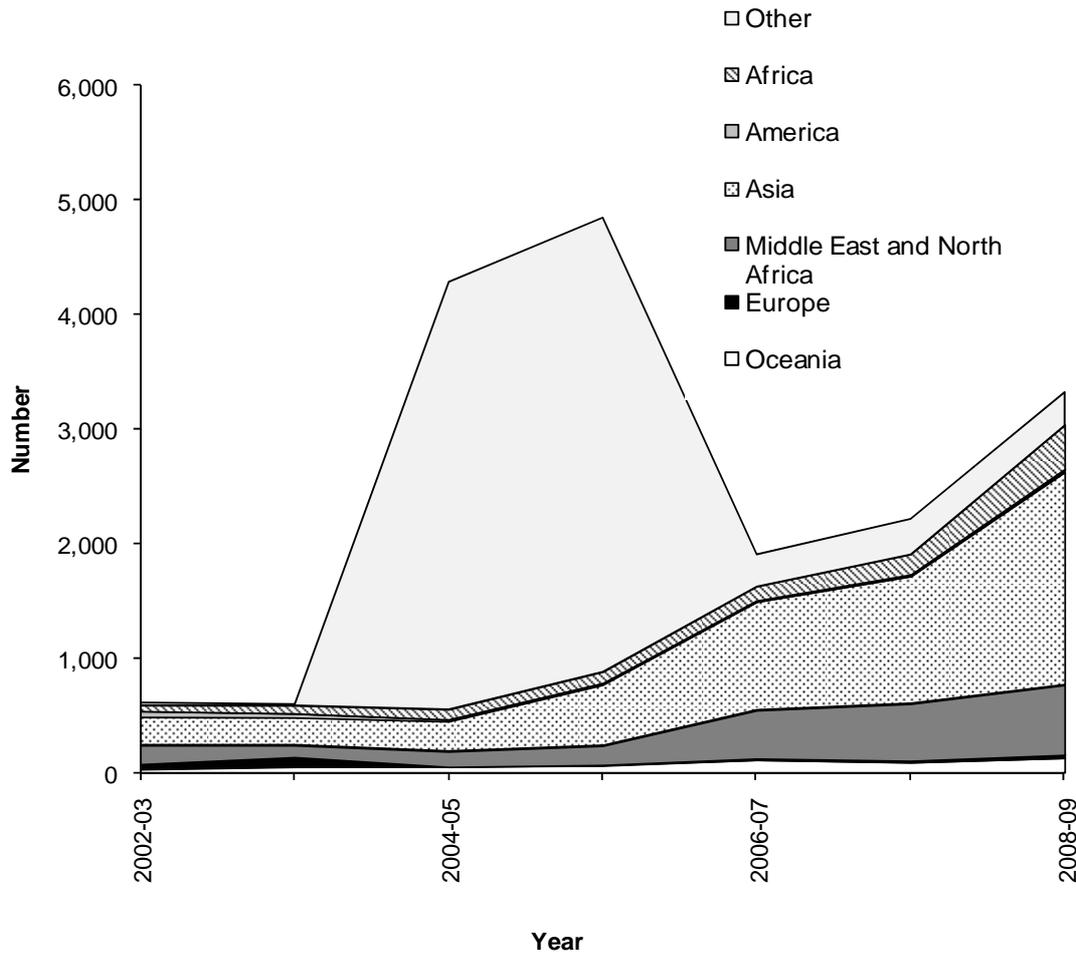


* In 2008 and 2009, boat arrivals are for the calendar year. In 2010, boat arrivals are for the calendar year to 16 March 2010 and air arrivals are not available

Source: DIMIA 2002, 2004 and 2005; DIAC 2007, 2009b and c; Bolt, 2010, 22

However, the arrivals data presented in Figure 4.2 depict only part of the Australian Humanitarian Settlement Program. Figure 4.3 shows that over the last two decades there have been an ebb and flow of asylum seekers arriving by sea or air in Australia and applying for asylum. Accordingly, the numbers of refugee-humanitarian settlers, as is the case for other migrant groups, are made up of 'onshore' arrivals. Table 2 shows the numbers of 'offshore' and 'onshore' refugee-humanitarian settlers in recent years are shown. The 'onshore' settlers have been less diverse in their countries of origin as is evident in Figure 4.4.

Figure 4.4: Onshore Refugee and Humanitarian Arrivals by Region of Birth, 2002-03 to 2008-09



Source: DIAC *Immigration Update*, various issues

Table 4.2 indicates that over the last 15 years the total annual intake of refugee-humanitarian settlers has varied between 9,900 in 1999-2000 to 14,700 in 1994-95. Each year the government sets a quota for the Economic, Family and Refugee-Humanitarian elements within the immigration program.

Table 4.2: Humanitarian Program Outcomes in Australia: Visas Granted, 1994-95 to 2008-09

Year	Onshore	Offshore	Total	% of Total Immigration Intake
1994-95	1,480	13,220	14,700	13.6
1995-96	1,200	15,050	16,250	13.8
1996-97	2,250	9,650	11,900	11.3
1997-98	1,590	10,470	12,060	12.0
1998-99	1,830	9,530	11,360	10.8
1999-2000	2,460	7,500	9,960	8.8
2000-01	5,740	7,990	13,730	9.9
2001-02	3,900	8,450	12,350	9.6
2002-03	870	11,660	12,530	9.1
2003-04	2,049	11,802	13,851	9.3
2004-05	1,082	12,096	13,178	8.4
2005-06	1,386	12,758	14,144	7.8
2006-07	1,831	11,186	13,017	6.8
2007-08	2,215	10,799	13,014	6.3
2008-09	2,497	11,010	13,507	6.2

Source: DIAC *Population Flows: Immigration Aspects*, various issues; DIAC, 2009c

There are a number of key issues relating to humanitarian immigration which need to be stressed:

- The size and origin of the intake is highly dynamic and has changed substantially over the last two decades
- The refugee-humanitarian intake is highly diverse
- Over a long period research on immigrant adjustment in Australia (Hugo et al., 2010) has demonstrated conclusively that refugee-humanitarian settlers in Australia have experienced greater difficulty than other migrant groups in adjusting economically, socially and culturally.

The latter issue is especially relevant here and applies not only in Australia but in other countries with substantial immigrant intakes that include refugees, especially in the United States, Canada and European countries. A ubiquitous phenomenon which has been identified in these countries is the '*Refugee Gap*' (Connor, 2010, p. 377). Refugee-humanitarian settlers in all these countries on average have less English language ability, less educational experience, different and less access to family support, poorer mental and physical health and a high proportion live in disadvantaged areas. However, one of the most perplexing issues relates to the fact that once key determinants of disadvantage for all immigrants, such as English language ability, education, work experience etc. are controlled for, refugee-humanitarian settlers still have lower occupational, employment and earnings as well as other outcomes than other migrant and non-migrant groups. A gap remains. Understanding of this is a major gap in our knowledge of migrant adjustment, not only in Australia but elsewhere as well.

Advantages of a Longitudinal Survey in Analysing Immigration and Settlement

In recent years there has been a growing recognition that a longitudinal approach is a fundamental requirement to increasing our understanding of the dynamics of the immigration-settlement process and better inform policy makers and planners. Indeed the unanimity in this view has been forcefully argued in Australia (e.g. see Wooden *et al.*, 1994; Morrissey, Mitchell and Rutherford, 1991), and several other overseas authoritative reviews of immigration data have

called for more longitudinal surveys of immigration-settlement. A Report of the Subcommittee on Migration Statistics of the Population Association of America (1988, p. 47) concludes that the conventional sources of immigration statistics in the US do not provide a sufficiently comprehensive assessment of the consequences of international migration and that longitudinal studies provide a solution. The National Academy of Sciences Panel on Immigration Statistics (Levine, Hill and Warren, 1985) in the United States concluded their review of immigration statistics by arguing that a longitudinal panel survey of immigrants and refugees was necessary to understand the social and economic impact of their settlement on the existing co-resident population. Most recently an international committee on migration statistics set up as part of the Global Initiative in Migration and Development (Centre for Global Development, 2009) has concluded that longitudinal approaches provide more comprehensive insights into, and more relevant policy direction regarding, the migration and settlement processes. What are the particular advantages of longitudinal surveys of migration and settlement?

Half a century ago Moser and Kalton (1961, pp. 137-143) summarised the major advantages of longitudinal studies over cross-sectional approaches as follows and there are clear implications for immigration and settlement research:

1. They are the best way to study trends and changes in any phenomena - whether in behaviour or attitudes. This is partly because the results are not as influenced by recall problems as is the case with longitudinal studies.
2. 'A panel study nearly always measures changes with greater precision than does a series of independent samples of the same size' (Moser and Kalton, 1962, p. 138). Precision is a statistical measure of the extent to which a sample estimate of a variable accurately reflects the size of those variables in the total population.
3. They can be used to study the effects of specifically introduced measures such as the impact of English language training programmes on immigrants because the respondents are studied before and after the measure has been introduced.
4. They enable us to study not only changes but also the changers and the non-changers.
5. They enable the inter-relationships between variables relating to different times to be investigated. The time context at various stages of processes is controlled.
6. Because respondents are interviewed at different points in time when they are actually in the process of change the results are not as influenced by recall difficulties and post hoc rationalisations.
7. It provides evidence of the temporal ordering of variables - an important factor in causal analysis since an effect cannot precede its cause. Cause and effect can sometimes get confused in cross-sectional studies.
8. There are several administrative advantages such as:
 - overhead costs of sample selection can be spread over several surveys
 - once people have agreed to give information it is generally possible to obtain fuller and more reliable data than in a single survey.

It is important however to identify some of the specific advantages and disadvantages which longitudinal studies have in the study of migration and settlement.

Much of the longitudinal research on migration has been conducted by French scholars and is only available in the French language. Findley (1982, pp. 25-26) has summarised much of their literature and drawing largely on Roussel (1971), Haeringer (1968), Gregory (1977), ORSTOM/INSEE/INED (1971) and Gould (1976) has identified the major advantages of conducting multiple round studies in migration as being:

1. Unambiguous observation of migration, assuming use of residency rules and no omissions of absents or visitors. Roussel (1971) suggests defining migration as residents or sojourners who appear or disappear between rounds.
2. Controls for history and maturation effects through observation of a cohort of migrants and non-migrants at successive points in time (Rowland, 1979).
3. Variables collected before and after migration, facilitating analysis of both migrant causes and consequences, particularly if the sample includes sending and receiving areas. Since the variables are collected directly as current status information in each round, they are not weakened by recall errors. Problems associated with the use of proxy respondents are also minimised.
4. Possibility of expansion of schedules. If additional details are desired, subsequent rounds can use an expanded schedule. Alternatively, the details may be collected from a sub-sample only.
5. Aids to editing. Certain items are expected to be identical or logically consistent between rounds, which facilitates editing.
6. Observation of period differences. Longitudinal surveys are the only means to observe patterns of change over time. Because migration rates and patterns can be highly variable, especially in rapidly urbanising nations, the longitudinal survey can provide a more complete picture of migration patterns than a single cross-sectional study (Roussel et al., 1968).

With particular reference to studies of immigration and settlement a number of other writers have observed some substantial advantages of longitudinal studies. Jasso and Rosenzweig (1987, p. 1226), for example, have stressed the following advantages of using longitudinal approaches in immigration research:

1. The unravelling of cohort and experience effects:

It is well-known that social science research based on cross-sectional data cannot reveal the patterns of dynamic processes and cannot disentangle age, period, and cohort effects. Thus, when cross-sectional data are used to study immigrant behaviour, it is impossible to distinguish between the effects of experience in the United States and the effects of factors associated with the immigrant's vintage - that is, with conditions in both the origin country and the United States at the time of entry (including the rules for the selection of immigrants in effect at the time of admission to permanent resident status). For example, as Borjas (1985) notes, in studies of the earnings of immigrants based on cross-sectional data, it is impossible to distinguish between two potential facts: (i) that immigrants improve their earnings as their time in the United States increases, as hypothesised by Chiswick (1978); and (ii) that each successive entry cohort of immigrants has possessed lower earnings potential (possibly as a consequence of the law for the selection of immigrants).
2. Jasso and Rosenzweig (1987, p. 1227) further point to an additional weakness of cross-sectional data in the study of migration processes which is especially crucial in the Australian case:

The respondents enumerated in the decennial censuses represent the survivors of entry cohorts, cohorts which may be selectively and differentially trimmed by emigration decisions (Jasso and Rosenzweig, 1987). If immigrants who subsequently emigrate from the United States are non-randomly self-selected and if the selection mechanisms operate differentially across entry cohort and/or country of origin - for instance, if the low achievers from the 1955 entry cohort leave while the high achievers from the 1965 entry cohort depart - then the true adjustment effect cannot be identified. Tracking the progress of an aggregate cohort across successive cross-sectional data bases may thus confound, because of selective emigration, the life-course mobility of individuals with shifts over time in the composition of their entry

cohort. For example, if the high earners in a cohort emigrate, it may appear that the cohort has made no progress when in fact the survivors (initially low earners) have substantially increased their earnings.

In this context it is interesting to note the vast bulk of immigration/settlement research in Australia (e.g. as reviewed in Wooden et al., 1994) is based primarily on census data sources. Census data only presents information on immigrants who have survived and remained in Australia between their time of arrival and the date of the census. They are a highly selected group given the high levels and distinctive characteristics of emigrants from Australia (Hugo, 1987; Hugo, 1994; Hugo, Rudd and Harris, 2001, 2003). The same criticism applies to surveys, even those which use as sampling frame arrivals in particular policy and/or birthplace categories drawn from Department of Immigration and Multicultural Affairs sources. Reviews of several of these studies (Hugo, 1987; Hugo, 1988) show that in most cases less than two-thirds of the sample were interviewed even when a very short time had elapsed between arrival in Australia and interview. It is clear that such surveys simply cannot give an accurate and representative picture of the experience of immigrants because it is absolutely certain that the people who had left Australia, were especially difficult to find or refused to be interviewed and will be different in many important ways from those people whose experience is reflected in the survey results.

3. A third absolutely vital issue raised by Jasso and Rosenzweig (1987, p. 1238) is that longitudinal data are necessary adjuncts to cross-sectional data if a full understanding of adjustment processes is to be achieved:

If significant progress is to be made in the scientific understanding of migration phenomena, data that permit the estimation of micro models of adjustment to the US society and economy are urgently needed. Inquiries into language acquisition, marital adjustment, fertility behaviour, occupational and earnings attainment require not only information on these variables (such as that in censuses) but also detailed information on the immigration history of the individual, together with data on sending-country characteristics. To avoid the biases associated with cross-sectional data, especially those due to emigration selectivity, the data must be longitudinal.

It is clear that an understanding of adjustment processes is going to be more readily achieved if we are able to follow and observe individual immigrants and their families and talk to them at various stages of that process rather than to ask them to recall the various stages of that process in a cross-sectional interview.

4. A Longitudinal Survey has the advantage of having immediately available at any single point of time a panel of respondents who can be stratified and subsetting along a huge range of dimensions for specific and targeted studies. For example if a particular policy or program issue were to suddenly emerge effecting a specific group the relevant subset of the panel of respondents could be identified and be the subject of a focused survey or in-depth case study.

It is important also to point out some of the disadvantages:

- High costs
- Delays in getting results
- Difficulties of tracing and keeping track of settlers
- Capturing new groups and types of immigrants that are introduced after the survey is underway.

Why is this especially important for Refugee Humanitarian Settlers?

As was indicated earlier, as a group refugee-humanitarian settlers in Australia face more substantial barriers to adjustment than other migrant groups. They are less well equipped with resources – financial, social, human capital, psychological – to make the transition to living in Australia. There are three areas relating to refugee-humanitarian settlement in Australia where a longitudinal survey can provide important insights. All three are dynamic processes, the full dimensions of which cannot be captured in cross-sectional data. They include:

- Understanding of the key transitions and adjustments which settlers are required to make;
- Understanding the changing resources which settlers are able to call upon to assist in the adjustment process
- Understanding the changing extent to which settlers are able to access government services to assist in the adjustment process.

Firstly, longitudinal approaches can assist in our understanding of the dynamics of the adjustment process itself. Cross-sectional approaches can provide a snapshot of levels of adjustment at a single point in time and rely on recall or future intentions to capture the dynamics of the process. Adjustment is a dynamic process and there are a number of dimensions where the understandings of the changes taking place are crucial including:

- Participation in the labour market
- The housing market
- Health – physical and mental
- Education
- Living arrangements, family situation
- Engagement with the wider community
- Mobility

Holton (1990, p. 216), in his comprehensive review of Social Aspects of Immigration in Australia stresses:

'... the urgent need to mount longitudinal studies of migrant experience over time. The predominantly short-term policy-oriented focus of much existing research has led to some unfortunate gaps in our understanding of many key issues. In particular there is an urgent need to follow the life course of individual migrants and their families over time in order to help settle unresolved debates in the area of social mobility and other community formation'.

It is apparent that the longitudinal approach is especially appropriate to better understand the problems faced by refugee-humanitarian settlers in making the key transitions necessary for successful adjustment.

The second area relating to adjustment where a longitudinal survey will provide better understanding relates to the resources which settlers can call upon to assist them in adjustment. Access to these resources can be crucial in the adjustment process and there are a number of different types of resources which are relevant:

- Human capital
- Social capital
- Economic resources
- Community resources

- Family services
- Accessibility to these resources changes over time and there is little understanding of these dynamics.

The third area where the longitudinal approach offers key insights is in the area of service provision. Inevitably, refugee-humanitarian settlers are going to rely on government and community provided services to assist in adjustment more than other groups. Establishing what services is needed and, crucially, when they are needed is accordingly a crucial ingredient in successful adjustment. As Morrissey, Mitchell and Rutherford (1991, p. 79) conclude in their study of the Family in the Settlement Process:

'A number of policy documents assert that there are different phases of settlement during which service needs vary, both in relation to the level of service needs and to the type of service required. Our literature review demonstrates that it is impossible to map out how and when these changes might take place, because we have virtually no reliable data available. Our argument has been that only research conducted over time (longitudinal research) can give answers to the relevant questions. Our survey results strengthen this argument by default. They indicate that there may well be a cycle of welfare and usage, but they provide little insight into the scale and contours of this cycle, since we have no longitudinal element. Our survey is a snapshot of a point in time. At the very least longitudinal research is necessary if we are to give some empirical content to the widespread belief that there is some qualitative distinction between 'initial settlement' and longer term needs. It is also necessary if we are to assess the argument that there is some point at which settlement may be said to have been accomplished; that is a point at which service needs of a given group of immigrants no longer differ from those of the non-immigrant population. In this context it is important to realise that we cannot answer these questions by simple reference to the behaviour of post generations of immigrants.'

Recently arrived and immediately expected immigrants differ from their predecessors in terms of their ethnic composition and very possibly in terms of their socio-economic profile. They are also arriving into a society much changed from the 1950s, 1960s and 1970s. At the level of settlement needs and service usage, we would propose a series of longitudinal studies which 'track' selected groups of people over (at least) a three-year period following arrival. The focus would be:

- usage of general welfare provisions
- usage of migrant-specific welfare provisions
- usage of English language provisions
- geographical mobility
- employment experience
- patterns of household formation.

Such studies would necessarily make provision for examining the particular needs of individual ethnic groups of women and of refugees.

The weight of research evidence is that judicious provision of services can facilitate adjustment, especially among vulnerable groups. Connor (2010, p. 393) has indicated that refugee adjustment can be facilitated by interventions from government and non-profit agencies across a range of programs:

- English language programs
- Educational programs
- Recognition of qualifications, upgrading of qualifications
- Other social support services – child care, educational loans

- Greater access to affordable housing
- Programs to facilitate community engagement.

There is then a clear message – Intervention does make a difference and refugees need that intervention more than other migrant groups. However, it is not just a matter of providing services. It is apparent that the effectiveness of services in assisting adjustment depends on a number of factors:

- What type of service?
- How should it be delivered?
- When should it be delivered?
- Where should it be delivered?

Only research carried out over time can provide detailed answers to these questions.

One of the key advantages of longitudinal surveys in considerations of the role of service provision in migrant adjustment is its potential to allow particular service provision interventions to be monitored and assessed. The effectiveness of particular programs and interventions can be assessed and indications given regarding whether or not to continue with such programs or what modifications need to be made to increase their effectiveness. A key question in the provision of such services is whether special services need to be developed to meet the needs of refugee settlers or whether mainstream services need to be adopted to meet the needs of settlers. Again, longitudinal approaches have a greater potential to inform such decisions than cross-sectional approaches.

Lessons from LSIA

LSIA was a comprehensive survey of the settlement experiences of three waves of immigrants to Australia. It is not intended here to provide an exhaustive description and analysis of LSIA as this has been done elsewhere (Hugo, 2004; Gartner, 1996; Cobb-Clark, 2006). A few points need to be noted, however, because data from LSIA have been used extensively to portray the experience of refugee-humanitarian settlers in Australia (e.g. see Cobb-Clark and Khoo [eds.], 2006; Richardson *et al.*, 2001, 2004).

The three waves of LSIA were as follows:

1. LSIA 1 – Interviewed 5,192 primary applicants aged 15 and over and 1,837 migrating unit spouses who arrived between September 1993 and August 2005. This represented around 7 percent of the total in scope principal applicants. The sample is stratified according to visa category and region/country of origin. They were interviewed initially between three and six months of arrival and they were reinterviewed approximately 18 months (Wave 2) and 42 months (Wave 3) after arrival.
2. LSIA 2 – Interviewed 3,124 primary applicants and 1,094 migrating spouses or around 10 percent of in scope principal applicants settler arrivals between September 1999 and August 2000. It was stratified in a similar way and the sample was reinterviewed only once approximately 18 months after arrival.
3. LSIA 3 – Interviewed only applicants from the Family and Skill Migration Streams. The number were 9,939 who either
 - arrived in Australia between December 2004 and March 2005; or
 - were granted an onshore visa between the dates.

They were surveyed again 12 months later.

Unlike LSIA 1 and 2 which involved personal interviews, LSIA 3 used a mail back survey in Wave 1 and a phone survey in Wave 2.

The LSIA surveys represent a major landmark in our understanding of the settlement experiences of immigrants in Australia. They do suffer from some shortcomings including the following:

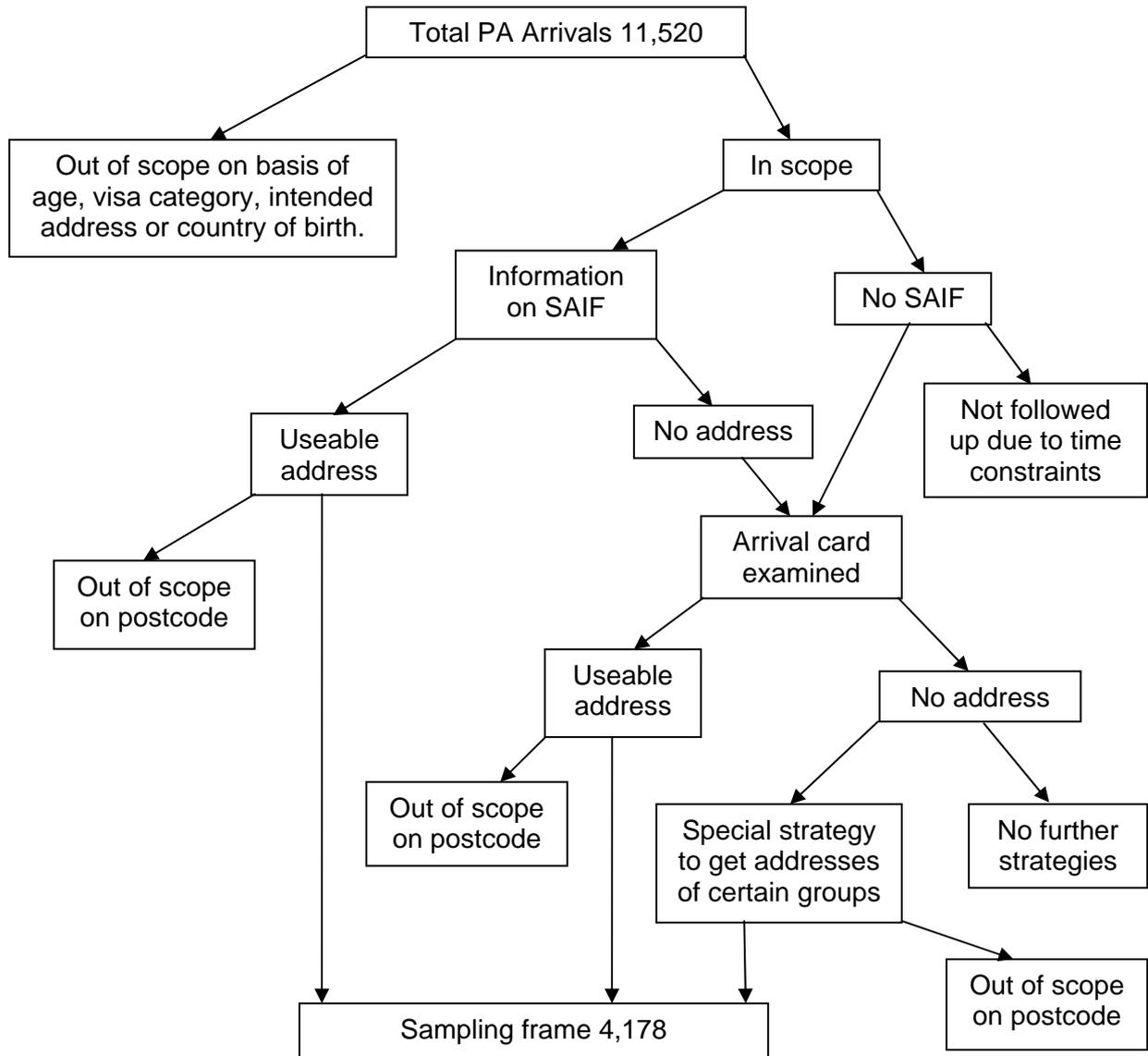
- The first two waves did not include onshore migrants.
- LSIA only included permanent settlers, yet temporary migrants are now a crucial element.
- The LSIA 3 did not include refugee-humanitarian migrants and hence is not useful to the present study.
- The data largely refers to immigrants arriving in Australia a decade or more ago.
- As Cobb-Clark (2006, pp. 213-216) shows, the data indicate only the early years of adjustment 'rather than long run equilibrium behaviour. The shortness of the two panels leaves many important questions regarding long term immigrant settlement unanswered'.

The key issue is that the immigration program and intake is constantly changing and the ability to be able to add new groups to the study or new categories of immigrants and settlers are introduced is important.

Another issue which bears especially on the LSIA results on the refugee-humanitarian stream relates to the representativeness of the sample. The efforts to obtain a random sample in LSIA 1 and LSIA 2 were exhaustive (Hugo, 2004). It is important to recognise that while every possible effort was made to achieve randomness there was an attrition of the sampling frame at several points of the process which reduced the representativeness of the final sample drawn. This can be illustrated with respect to LSIA 1.

Figure 4.5 shows that there was significant attrition even in the development of the sample. A complex rolling procedure was used to identify and recruit the sample and the numbers in Figure 4.5 are only for the first 6 months of the 2 year sampling period. Nevertheless it will be noted that of the 10,141 in scope PA arrivals, only 4,178 (41.2 percent) usable addresses were found so that there was an attrition of 58.8 percent even before the sample was drawn. Since it is likely that the addresses of a potential sample member would be more likely to be available if the migrant was in receipt of government services, it may be that the sample is biased in favour of those settlers who are receiving government services like unemployment benefits. This is perhaps especially the case for refugee-humanitarian settlers. Addresses for the sampling frame were accessed through the Settlement Data Base (SDB) but it was found that the contact addresses given in the SDB varied in quality between groups and the information quality varied between groups. For example it was especially poor among refugees so extra contact information was obtained from the Humanitarian Settlement Services Section (HSSS) and Business Skills Area of DIAC. This may have produced bias toward those using services.

Figure 4.1: Developing the LSIA Sampling Frame for the First Six Month Segment for the First Interview of the First Wave



Source: Modified from Gartner 1996, Figure 15a, 15b

Further attrition of the sample occurred after the sample was drawn. Table 3 shows that of the 8,754 selected 5,196 were actually interviewed. Clearly again there was a significant loss of the original sample population of the 40.6 percent. There was also a further attrition in Wave 2 and Wave 3 of LSIA 1 as Table 4 shows.

Table 4.3: LSIA: Response and Non-Response in Wave 1

	Number	Percent
Total selected	8,754	100.0
Total interviewed	5,196	59.4
Unable to track	1,561	17.8
Refused	228	2.6
Overseas	1,470	16.8
Other	299	3.4

Source: Modified from Gartner, 1996, Figure 23

Table 4.4: LSIA: Cohort 1: PAs Interviewed in Wave 1 by Interview Status in Waves 2 and 3

Interview Status	Wave 2		Wave 3	
	Number	Percent	Number	Percent
Interviewed	4,468	86	3,752	72
Unable to track	251	5	563	11
Refused	109	2	225	4
Overseas temporarily	204	4	289	6
Overseas permanently	78	2	234	5
Out of scope in Australia	27	1	41	1
Deceased	4	0	19	0
Other	51	1	69	1
Total	5,192	100	5,192	100

Source: DIMA, 1999, 31, 32

The issue being raised here is not at all to discredit LSIA and its findings. The surveys have been enormously useful in research and policy development. The point being made is that one has to be quite careful about extrapolating from the survey of the entire refugee population for at least the following reasons:

- The data only relate to the early years of settlement in Australia.
- The sample is a selective one which may give people who are on federal benefits a greater chance of selection.

In all studies of migration one of the greatest barriers is the inability to assemble sampling frames which are fully representative of all relevant migrant groups. It is crucially important in any future longitudinal survey that strenuous efforts be made to obtain a comprehensive sampling frame and a representative sample of refugee-humanitarian settlers as well as other migrant groups.

One of the major limitations of LSIA was that it covered immigrant settlers only in the first few years of their settlement in Australia. A recent study of the economic, social and civic contribution of refugee-humanitarian settlers in Australia demonstrated how this contribution needs to be assessed over a longer period if a balanced assessment is to be achieved. Longitudinal surveys need to be extended over a longer time period if they are to provide more comprehensive insights into the adjustment process. One issue which also needs to be explored is the potential for including the second generation in longitudinal survey panels.

Another aspect which needs to be considered relates to the fact that there needs to be a non-migrant population to make comparisons of change over time with migrants. Working out ways in which this can be achieved is an important consideration.

Finally, an important consideration relates to the need for geographical specificity in any longitudinal survey. If the location of the residence of respondents can be geocoded it opens up a range of opportunities. It is apparent in the research on refugee-humanitarian settlement that *where* people live makes a difference to their adjustment. Geocoding will open up the opportunity to analyse the nature of the community and environment in which they are living. It also provides the chance to link the information collected in the survey with a range of other data relating to their specific location and the community in which they are living. The lack of geographical specificity in LSIA is a disadvantage.

Conclusion

Over recent years Australia has resettled more refugee-humanitarian immigrants per 1,000 residents than any other nation. Humanitarian migration is an important and continuing element in national political discourse and part of this discussion involves the costs and benefits of refugee settlement. The prime motivation of the refugee-humanitarian program has always been, and must remain, a humanitarian one with Australia accepting its responsibility as a good international citizen. However, an important part of that responsibility must be putting in place the structures which facilitate and assist refugees to adjust to life in Australia and participate fully in the community. Putting in place the right services, in the right place, in the right amount at the right time is of fundamental importance to achieving this goal. There is abundant evidence that refugee-humanitarian settlers face greater barriers to adjustment than other migrant groups (Refugee Council of Australia, 2010). While there is evidence that refugee-humanitarian settlers converge toward the total population with increased time in Australia there are also clearly groups that are left behind (Colic-Peisker and Tilbury, 2006). There is also evidence, however, that policy and program intervention is a crucial ingredient in facilitating the transition to life in Australia. A longitudinal survey can provide the basis to design such interventions so that they are appropriate, effective and timely.

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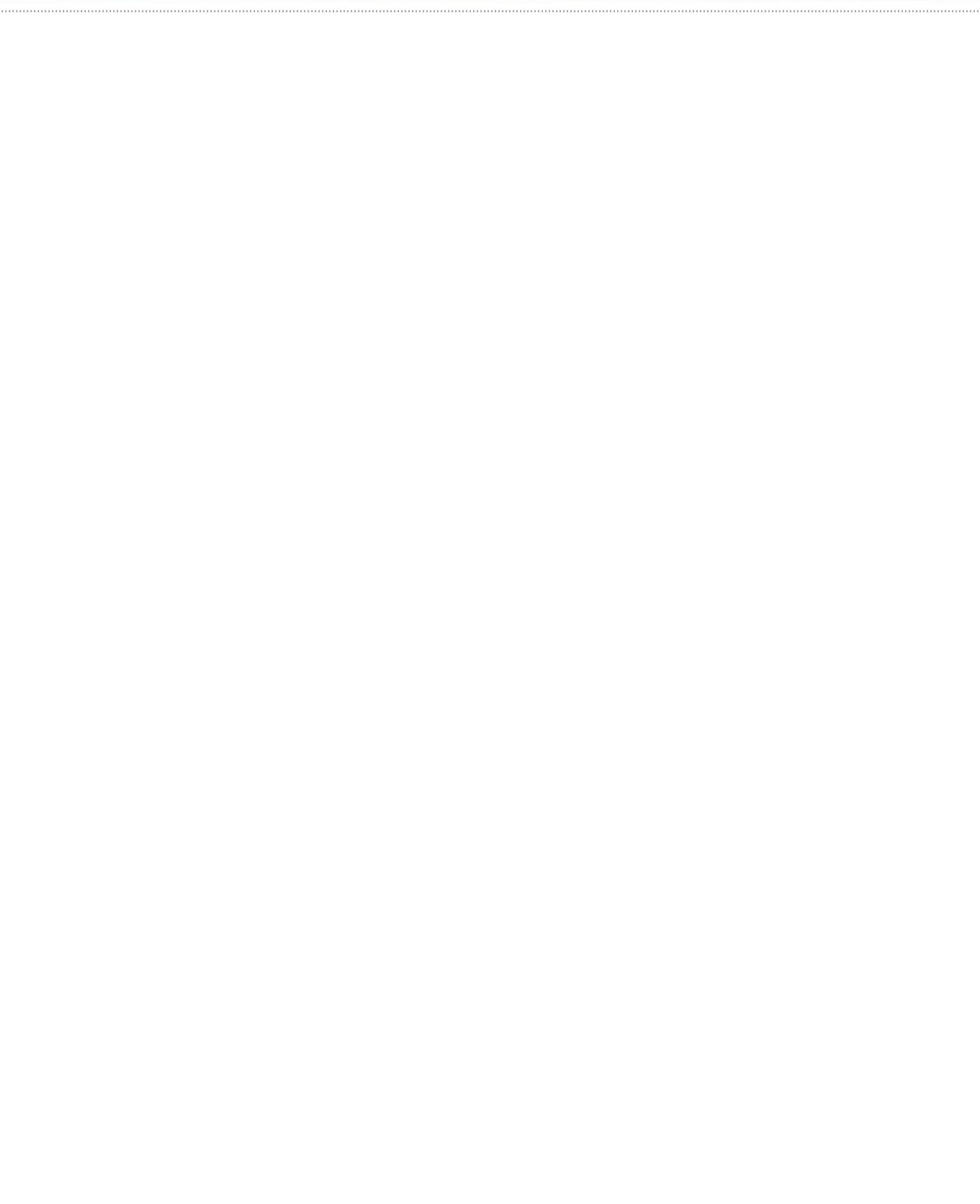
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5. Using longitudinal analysis to better understand labour market transitions and evaluate policy settings

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Introduction

Around the world, there has been an explosion in the use of longitudinal analysis and panel data to understand a vast array of economic and social behaviour. There are at least three primary explanations for this. First, longitudinal analysis expands our capacity to model complex, dynamic economic and social decision making. Second, is the dramatic expansion in the availability of the panel data necessary to support longitudinal analysis. Finally, there have been a number of important methodological and computational advances in estimation techniques which allow the power of longitudinal analysis to be exploited (see Hsiao 2005). The purpose of this paper is to provide an overview of the ways that longitudinal analysis is contributing to our understanding of labour market outcomes – in particular labour market transitions and labour market dynamics. We will pay particular attention to the contribution of longitudinal analysis to our understanding of the immigrant experience and the impact of public policy on labour market outcomes.

In Section 2, we begin by reviewing the technical statistical and econometric arguments for the use of panel data and longitudinal analysis in studying labour market outcomes. Section 3 explicitly considers these issues of immigrants. In Section 4, we consider where we would be without panel data and longitudinal analysis. Finally, conclusions are presented in Section 5.

The Technical Advantages of Panel Data and Longitudinal Analysis for Studying Labour Market Outcomes

Panel (or longitudinal) data typically refer to time series observations for a number of cross-sectional units, i.e. individuals, firms, countries, etc. Panel data dramatically expand our capacity to understand complex and dynamic human behaviour relative to either cross-sectional or time-series data alone. In particular, it is notoriously difficult to infer very much about dynamic behaviour from a single cross-section, while a single time series often masks the heterogeneity of responses across individual units.⁴

Panel data allow analysts to exploit both inter-individual variation (i.e. individual heterogeneity) and intra-individual dynamics to more fully understand complex behaviour. As Hsiao (2005) notes, this has a number of statistical and econometric advantages including: (i) controlling for omitted variables, perhaps most importantly unobserved individual effects (i.e. unobserved heterogeneity); (ii) allowing for the construction and testing of more complicated behavioural hypotheses; and (iii) more precise estimation and consequently, more accurate inference.

⁴ To put it differently, it is often difficult to generalise from the behaviour of a single individual, firm, or country to the entire population, all firms, or all countries.

Women's labour force participation provides one of the most frequently cited examples of the importance of panel data for labour market analysis. In an early study of women's labour supply, Ben-Porath (1973) found that among a cohort of women at a point in time approximately 50% appear to be working. Cross-sectional data, however, are unable to tell us whether this occurs because (i) each woman works on average approximately half of her lifetime or (ii) because approximately half of the population of women can be thought of as "workers" while the other half are better classified as "nonworkers". These alternative explanations obviously have very different implications for the interpretation of labour market functioning and the design of public policy. If the former is correct then we should expect that job turnover will be a frequent phenomenon as women move in and out of the labour market. Policy would be best focussed on the process, timing, and circumstances underlying these transitions. If, on the other hand, the latter is correct then a woman's current employment status would completely predict her future labour market behaviour. Policy makers would do well to focus on understanding the economic and social factors that lead some women work while others do not.

The simple example highlights the critical importance of accounting for unobserved individual characteristics, i.e. unobserved heterogeneity, in any labour market analysis. Unobserved heterogeneity is a form of omitted variable bias which leaves us unable to correctly interpret labour market phenomenon. In the above example, we can think of women as differing in their inclination to or preference for working. Some women may like working and may be firmly attached to the labour market, while others are not. We need to be able to account for these differences in order to fully understand women's labour supply. Unfortunately the inclination to be at work is unobserved in most data sets. Panel data and panel data models, however, allow us to account for individual heterogeneity even though it is unobserved.

The Case of Immigrants

Historically, immigration research in Australia—and indeed in most countries worldwide—has been based on cross-sectional data. Census data in particular are the major source of information about immigrants in many countries in large part because they are reliable, fully cover the population, and provide information about a range of immigrant characteristics. It is difficult to find panel data sets which are useful for studying the immigrant population because panel surveys which are based upon a representative sample of the population as a whole often do not capture enough immigrants for analysis. Like other relatively small subpopulations, it is often necessary to over sample immigrants. Moreover, in order to maintain the representativeness of the immigrant population over time, panel studies must have some mechanism for allowing new arrivals to enter the sample. In many cases, it can be challenging to find an appropriate sampling frame from which to sample new arrivals.

Immigrant settlement and labour market adjustment are, however, inherently dynamic processes that are better understood through the analysis of longitudinal rather than cross-sectional data (see Cobb-Clark 2001). It is these dynamic processes which allow for a deeper understanding of the way in which new arrivals settle into life in their new country. Understanding how immigrants fare in the labour market over time is central to assessing the immigrant settlement process. Settlement is facilitated when immigrants make a smooth transition into the host-country labour market (Wooden, et al. 1994). Not surprisingly then, economists have spent a great deal of time investigating how relative labour market outcomes—for example, labour force participation rates, employment/unemployment rates, and earnings—of immigrants change over time as immigrants accumulate host-country-specific human capital.⁵

⁵ For a review of the literature assessing how immigrants perform in the Australian labour market see Wooden, et al., 1994.

Data from a single cross-section tell us very little about the dynamics of this labour market adjustment process. In particular, Borjas (1985) was among the first to demonstrate that changes over time in the characteristics of immigrants or in the circumstances surrounding immigrant employment can confound cross-sectional estimates of the effect of years since migration on the relative labour market performance of immigrants. Repeated cross-sections can help in separately identifying period, cohort, and ageing effects. However, panel data are much more useful in estimating the actual employment dynamics of immigrants. Moreover, panel data permit the use of econometric models to remove the bias generated by certain forms of unobserved heterogeneity (see Section 2) and estimate changes in immigrant outcomes over time much more accurately (Baltagi 1995; Hsiao 2005).

Cobb-Clark (2001) reviews the advantages and limitations of the Longitudinal Survey of Immigrants to Australia (LSIA) for analysing immigrant settlement in Australia. In particular, LSIA data are particularly useful for understanding the role of selection criteria in the settlement process because of the availability of accurate information about detailed visa categories. Moreover, the LSIA survey instrument is very detailed and respondents are asked to provide information about important dimensions of the immigration process itself—for example, the visa application, entry, and settlement process, the motivation for immigration, intentions to remain, etc—which are often absent in other data sources. At the same time, usefulness of the LSIA is severely constrained by its lack of a comparison sample of native-born Australians. Moreover, the panel is too short to do more than provide information about the early settlement process leaving many critical questions regarding immigrant settlement completely unanswered. The Household Labour Dynamics in Australia (HILDA) survey provides an important opportunity to study the dynamic labour market experiences of immigrants and their families. The HILDA survey includes a sufficiently large estimation sample of immigrants, has extraordinary detail, and includes New Zealanders, who are excluded from the LSIA sampling frame. This HILDA sample, however, is representative of the Australian immigrant population as it existed in 2001. Over time, however, without an immigrant top up sample HILDA will become less and less representative of the experiences of immigrants as a whole.

Where Would We Be Without Panel Data and Longitudinal Analysis?

Our ability to understand labour market transitions and evaluate public policies would be severely limited without panel data and longitudinal analysis. In this section, we review some of the most critical issues.

Causal Estimation:

A range of econometric challenges including reverse causality, omitted variables, endogenous variables, etc make it next to impossible to generate causal estimates from a single cross-section.

Yet policy initiatives fundamentally rest on understanding causal mechanisms. For example, research typically shows that the labour supply of mothers is negatively related to the numbers of children they have. If policy makers wish to increase the labour force attachment of mothers it is important to know whether mothers' relatively low participation rates stem from their difficulties in balancing their family and work obligations (a causal link) or because women who have low attachment to the labour market have more children (unobserved heterogeneity). The first case leaves policy makers with many options, while the second may leave them with no options at all.

Dynamics Behaviour:

Cross-sectional data tell us next to nothing about dynamic behaviour. Yet nearly all of the behaviour that policy makers are seeking to influence is in fact dynamic. This includes:

- Human capital investment: (i) formal education; (ii) training decisions; (iii) job search; and (iv) migration.
- Labour market behaviour: (i) wage growth; (ii) unemployment dynamics; (iii) job turn over; (iv) industrial and occupational shifts; and (v) entry and exit.
- Poverty dynamics: (i) movement off and on benefits; (ii) movement between programs; and (iii) movement in and out of poverty.
- Saving and consumption behaviour: (i) savings; (ii) wealth accumulation; (ii) asset portfolios; and (iv) housing.
- Demographic processes: (i) partnering (marriage, divorce, and re-partnering); (ii) fertility (timing, spacing, and total fertility); and (iii) household formation.
- Intergenerational issues: (i) educational decisions; (ii) transmission of disadvantage; and (iii) family support.

Conclusions

It is hard to escape the conclusion that panel data and longitudinal analysis are absolutely essential to understanding and evaluating labour market behaviour. This is particularly true for immigrants who may have different labour market trajectories to those of native-born Australians. Moreover, understanding labour market outcomes is essential to understanding the immigrant experience as a whole.

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6. How longitudinal surveys can be used to better measure how well immigrants are settling in Australia.

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Introduction

Australia is one of very few countries (Canada, New Zealand and United States of America are the others) with a longstanding and relatively large scale settler migration program. Immigration has contributed nearly half of the country's total population growth over the past sixty years. The 2006 census showed that 22 per cent of the population were foreign-born, most of whom were either naturalised citizens or had rights to permanent residence. The immigration program has always emphasised permanent settlement for migrants. Therefore, besides its responsibility for managing the entry of people to Australia, the Department of Immigration is also concerned with the settlement of migrants and refugees after their arrival in Australia.

Immigrant settlement policy in Australia has evolved over the years in response to demographic, social, economic and political considerations. In the 1950s and 1960s, immigrants were expected to assimilate to the Australian way of life. An important aspect was becoming proficient in the

English language and adult English language classes were provided, which evolved into the Adult Migrant English Program still operating today. With increasing immigration from non-English-speaking and non-European countries in the 1970s and 1980s, Australia adopted a policy of multiculturalism that recognised ethnic, cultural and linguistic diversity among its immigrant population. Since the 1990s, the focus has been on immigrant settlement. The current Department of Immigration's website defines 'settlement' as "the process of adjustment that (new immigrants) experience as (they) become established and independent in Australia."

In this paper, I have been asked to discuss how longitudinal surveys can be used to better measure how well migrants are settling in Australia, particularly in relation to current patterns of migration, and the information gaps that a longitudinal survey can address in advancing our understanding of this issue. The paper begins with a review of previous studies and past and present government policy and views about immigrant settlement success. Based on this discussion of the different perspectives of successful settlement or settlement success of immigrants, I then outline what I consider to be some essential criteria or indicators of successful settlement for immigrants to Australia. This is followed by a discussion of the information needed and how it can be collected in a longitudinal survey of immigrants.

What is "successful settlement"?

There have been studies in Australia and other countries of immigration that have attempted to address this question. In the year 2000, the Department of Immigration and Multicultural Affairs (DIMA) commissioned Peter McDonald and me to develop a set of indicators for measuring "potential and actual settlement success". The indicators were to be developed based primarily on the first Longitudinal Survey of Immigrants to Australia (LSIA1). The study also required us to establish a set of benchmarks that can be used for comparison with the indicators.

At that time DIMA's Settlement Services guide had a definition of successful settlement of immigrants as their achieving "active economic and social participation in Australian society as self-reliant and valued members" (DIMA 2000: 9). We used this definition as a starting point to explore further the meaning of successful settlement and chose to relate it to the concept of wellbeing promoted by Amartya Sen (1982: 334) that included the importance of human functioning or having the capability to function. Based on these two criteria of participation and wellbeing, we proposed a framework for measuring successful immigrant settlement outcomes in four dimensions: social participation, economic participation, economic wellbeing and physical wellbeing. A number of indicators were developed for each dimension using data from LSIA1, the population census and other data collections (Khoo and McDonald 2001). These indicators included English language proficiency, participation in education by immigrant youth, Australian citizenship, labour force participation, income, home ownership and health. We also undertook statistical modelling to examine how the four dimensions were related and their relative importance as measures of positive immigrant settlement outcomes. Our findings suggest that the four dimensions are closely related and together form an interlinked system.

More recently, Laurence Lester has written a PhD thesis at Flinders University on measuring and modelling labour market success and successful settlement of immigrants using data from LSIA1 and LSIA2 (Lester 2008; 2009). His model is based on four indicators of successful settlement selected from LSIA data: level of satisfaction with life in Australia; mental health; decision to immigrate was right; and encourages others to migrate to Australia. He considers labour market success as only one of several factors that influence immigrant settlement success since not all migrants seek to enter the labour force. His study uses a longitudinal structural equation model to examine the factors that contribute to successful settlement as measured by the four indicators.

Earlier studies of how well immigrants are settling in Australia have also considered a number of indicators of social and economic adjustment such as labour force participation, employment and unemployment rates, occupational status, income, home ownership, English language proficiency and citizenship (Wooden et al. 1994). Data from the first two LSIA's have also been used to examine the role of immigration policy and selection criteria for economic migrants in contributing to their successful settlement as measured by a range of indicators including the time taken to find the first job after migration (Thapa and Gorgens 2006), English language proficiency (Chiswick and Miller 2006) and housing outcomes (Khoo 2006).

A study of immigrant settlement indicators by Canadian researchers also suggests examining the settlement experience in terms of multiple dimensions or spheres of social life. These include linguistic, economic, occupational, social and cultural adaptation and physical and mental health (Neuwirth et al. 1989). They also suggest that a longitudinal survey of immigrants be designed to collect the data needed to develop indicators to measure immigrant settlement outcomes in each of these areas.

The definition of successful settlement also depends on the conceptual and policy framework relating to immigrant settlement. According to the assimilation framework that prevailed in the past, assimilation to the receiving society would be considered successful settlement and the question would be on how assimilation is measured. The terminology used in today's multicultural context, as stated on DIAC's current website, is that migrants are expected to *settle* and that "*settlement is the process of adjustment (migrants) experience as (they) become established and independent in Australia*". The reference to becoming independent is similar to the notion in DIAC's settlement policy statement in previous years of migrants being self-reliant as a measure of settlement success.

Previous research such as that based on the first two LSIA's has shown that the settlement experiences of migrants vary significantly by migration category because of their different criteria for migration. Refugees, economic migrants and family reunion migrants differ in many aspects of their settlement experiences and settlement outcomes because they are selected on very different

characteristics and criteria for migration. Notions of successful settlement may be different for different categories of migrants.

The meaning of successful settlement may also differ between the migrants themselves and the receiving country and society. Obviously migrants' perception of their own settlement experiences matters in assessing whether their settlement is successful.

Equally the expectations of the receiving country of what constitutes successful settlement also matter in attempting to measure whether migrants have settled successfully. For individual migrants, settlement success is likely to be correlated with the achievement of their migration goals and pre-migration expectations. Expectations are likely to vary with type of migrant. Refugees are likely to have different expectations from skilled migrants. The measurement of settlement success from such a perspective would require information about the individual's migration expectations and goals and whether they have been met. From this perspective, immigrants' satisfaction with their life in Australia and their intention to settle permanently may be considered to be the best overall assessment of successful settlement, while expressions of dissatisfaction and the intention to return home or migrate to a third country would be considered signs of settlement failure. Indeed the earliest studies of immigrant adjustment in Australia were prompted by concerns of settler loss among British migrants in the 1950s and early 1960s and had focused on why the migrants were not settling successfully and were returning home (Appleyard 1962a; 1962b). However, satisfaction with life in Australia may also be a relative measure for migrants depending on their background and home country experiences. From Australia's perspective as a settler migration country, the most basic measure of immigrant settlement success is that migrants settle permanently and become citizens that they become *established* and do not return home or immigrate to another country. However, this criterion may be less applicable to refugees or humanitarian migrants who do not have the option of returning home or few resources to remigrate to a third country, and family migrants who may also not have that option because of family ties. Permanent settlement by itself is therefore not a sufficient measure of successful settlement and there need to be other measures as well.

For migrants to settle successfully in Australia, being able to speak and understand English is essential because it is the language of commerce, instruction and almost all daily interchange in Australia. It is for this reason that the Adult Migrant English Program has been the mainstay of Australia's settlement assistance program since the 1970s. Migrants whose English language ability is limited will be restricted in their interaction with others beyond their family and ethnic community. It limits their participation in the community and in Australian society.

Participation in the community and in the society is also an important element of successful settlement, and settlement policy statements have alluded to this. Participation in the community can take many forms. It can include participation in the economy and the work force, but it is not restricted to this. It can include participation in any community or social activities such as playing sports, attending community events and volunteering. As Lester (2009) points out in his study of immigrant settlement success, not all migrants participate in the labour market. Other avenues of migrant participation in the community and in Australian society should be included in any assessment of successful settlement.

Based on the above discussion and considering the perspectives of both the receiving country and the individual migrant on what constitutes successful settlement, I would suggest that successful settlement in Australia involves the following four preconditions:

- Permanent residence and citizenship
- Proficiency in English
- Participation in community and society
- Satisfaction with life in Australia

Obviously the four measures are interlinked and correlated, particularly the second with the third and also the first with the fourth. The important criteria are that they meet both the individual migrant's and the receiving country's perspectives on successful settlement and that they are applicable across all types of migrants, not just economic but also family reunion and humanitarian migrants. They should also be applicable in the context of changing migration patterns.

While these four measures of successful settlement are applicable across migration categories, different types of migrants are likely to face different time trajectories in achieving these outcomes. It is also important to assess the factors that are likely to lead to positive or negative outcomes in these measures. These include the migration context, such as whether migrants are onshore or offshore visa applicants; migrants' own social and economic circumstances; their migration goals and expectations; their health and wellbeing; and other post-migration experiences including access to and the role of family and non-family support networks. Because of the importance of the time dimension in any analysis of immigrant settlement experiences, a longitudinal survey is the most appropriate approach to obtain the data needed to evaluate the role of these factors and their contribution to successful settlement.

A longitudinal approach to assessing migrants' settlement experiences

The first two LSIA's and Deborah Cobb-Clark's paper for this workshop have demonstrated some of the advantages of using panel data to assess migrants' settlement experiences. Cobb-Clark (2001) has also pointed out some of the limitations of the LSIA, the most serious of which I think is that the panel was followed for only the first three and a half years after migration to Australia in LSIA1 and even less time in LSIA2. Because different migrants may have different time trajectories in adjusting to life in Australia – and our research has indicated that humanitarian migrants may take considerably longer than other migrants to achieve some measures of settlement success (Khoo and McDonald 2001) – the migration cohort in a future LSIA will need to be followed for a longer period if the objective is to assess properly how well different types of migrants are settling in Australia according to the various measures of settlement success.

As indicated earlier, immigrants' satisfaction with their life in Australia and their intention to settle permanently may be considered to be the best overall assessment of successful settlement. A longitudinal survey is essential to obtain this information from recently arrived migrants and to follow them over a period of time to assess whether attitudes and intentions – both positive and negative – change or are translated into actual behaviour of permanent residence or settler loss. A longitudinal approach is also necessary to obtain detailed data on migrants' circumstances and experiences in the years after migration that are associated with either settler loss or permanent settlement and citizenship later on. Since eligibility for citizenship is now a minimum of four years of residence, migration cohorts should be followed for at least five years after migration to assess their permanent residence and citizenship outcomes.

While cross sectional surveys can provide data on the other measures of successful settlement, only a longitudinal survey can provide data on the changes in migrants' circumstances during the period of settlement as they adjust to living in Australia that will help to inform the observed settlement outcomes later on in relation to these measures. There is now increasing interest in demographic and social research in using a life course approach to understand a range of issues relating to people's life experiences including family formation, mobility and migration, participation in work and other activities, health and well-being because of their linkages over time. This approach requires data from longitudinal surveys but provides a more definitive analysis of causal factors in assessing outcomes. It is important from a policy perspective to examine the factors and migrant experiences that can result in positive or negative settlement outcomes so that settlement policy can focus on appropriate initiatives to help migrants achieve successful settlement.

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