

**Surveying mobile populations:  
Lessons from recent longitudinal  
surveys of Indigenous Australians**

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### **List of acronyms**

ABS	Australian Bureau of Statistics
AEDP	Aboriginal Employment Development Project
APS	Aboriginal Peoples Survey (Canada)
BWP	Barriers to Work Project
CAEPR	Centre for Aboriginal Economic Policy Research
CATI	Computer Aided Telephone Interviewing
CDEP	Community Development Employment Project
CES	Commonwealth Employment Service
DEWRSB	Department of Employment, Workplace Relations, and Small Business
DFACS	Department of Family and Community Services (Commonwealth)
DSS	Department of Social Security
HILDA	Housing, Income, and Labour Dynamics in Australia
NATSIS	National Aboriginal and Torres Strait Islander Survey
PSID	Panel Study of Income Dynamics
YTI	Youth Training Initiative

## **Executive summary**

Geographically mobile populations are notoriously difficult to survey, especially in a cross-cultural context. In broad terms, it is difficult to ensure that respondents are representative of the underlying population and that data obtained are relevant to them. At a practical level, the problem can be as basic as not having any well-formed notion of what defines a household. Consequently, the resulting analysis of households is at best imprecise and, at worst, conceptually confused.

Longitudinal data add a time dimension to surveys and the resulting analysis is potentially sensitive to the initial experience of individual respondents. This paper documents the lessons for the design and conduct of longitudinal data collection from three recent surveys of an exceptionally mobile population, Indigenous Australians. Since high levels of mobility characterise many unemployed and younger Australians, the lessons described here have wider application for general longitudinal surveys.

### ***The CAEPR household survey project***

In 1998, the Centre for Aboriginal Economic Policy Research (CAEPR) was contracted to investigate, at the community level, the policy and service delivery effectiveness and appropriateness of the payment of welfare transfers to Indigenous families for the care of their children. The research agenda is to be carried out over a three to four year period, during which two Indigenous communities (Yuendumu in central Australia and Kuranda near Cairns) will be revisited each year and particular households within them surveyed. In the first of these visits, in 1999, lengthy face-to-face interviews were carried out with a key reference person in each household. Genealogies covering all household members were recorded with these respondents (Smith 2000).

Mobility is a crucial factor in the composition and formation of Indigenous households. Adults and children in both Yuendumu and Kuranda are extremely mobile, travelling between a set of usual home bases within and across different communities. Children travel with, and without, their parents and siblings, and this flow is unpredictable. However, the nature of mobility and resulting dynamic developmental cycles of households are not ad hoc phenomena, but subject to the regulating influence of social relatedness and systems of kinship. Key economic relations tend to extend over the boundaries of a single dwelling and residents shift between these places, creating kin-related clusters of households.

In Yuendumu, censuses were taken nightly of all persons staying overnight in households over a twelve-month period. The dynamic nature of Indigenous household composition can be illustrated in one of the four-bedroom houses surveyed. A total of 27 different adults and 15 different children slept at the house over the fortnight, totalling 42 different persons. Out of this flow of 42, a core of 11 persons (7 adults and 4 children) slept at the house for the whole two-week period (Musharbash 2000).

***The Barriers to Work Project***

The second survey examined is the Barriers to Work Project (BWP), conducted by the Manguri Corporation, which investigated the employment experiences of 25 young Indigenous people (aged 20–30 years old) during 1997 and 1998. This Project showed that the same mobility which causes poor response rates among Indigenous surveys makes it difficult to keep the same Indigenous interviewers over time.

***The DEWRSB longitudinal survey of Indigenous job seekers***

The final survey examined is the Department of Employment, Workplace Relations, and Small Business's (DEWRSB's) longitudinal survey of Indigenous job seekers collected between early 1996 and late 1997. Face-to-face interviews, predominantly administered by Indigenous interviewers, were conducted in a range of urban areas, large rural centres, and remote centres. Two main issues arise in the analysis of DEWRSB's data: the implications for the analysis of the low response rates among mobile people and the effect of mobility of Indigenous interviewers.

The initial sample contained 7221 names of Indigenous job seekers. Of these, 2503 were successfully interviewed at the first wave, representing a 35 per cent response rate. Once a person had responded to the first wave the chance of being reinterviewed was somewhat higher: the people who could be interviewed were less mobile than those who did not respond.

Indigenous interviewers were either relatively mobile or harder to replace than non-Indigenous counterparts. As a result, there were considerable fluctuations in the Indigenous composition of the interview workforce, especially in non-metropolitan areas (e.g. Alice Springs).

***Surveying mobile populations in a longitudinal context***

Some key factors underlying the process of mobility in Indigenous households include access to resources ('demand sharing'), availability and quality of housing, overcrowding, conflict, the impact of death, and 'visiting' patterns. The experience of CAEPR's community-level household survey suggests the need for a multi-dimensional, nested set of definitions of 'household'. Minimally, 'household' should be defined using a combination of levels, which are increasingly inclusive: for example, incorporating the ABS standard and several alternative definitions which cover all persons staying in a particular location (including visitors) overnight or in the previous four weeks. There may be a recall problem for retrospective questions on mobility.

There appears to be a trade-off between data quality, response rates, and survey costs. The use of Indigenous interviewers does not, in itself, guarantee that response rates will be acceptable. While the use of such interviewers enhances our confidence in the quality of the data as it relates to Indigenous people's lives, more resources may need to be devoted to following up non-respondents and collecting information.

A more subtle data quality problem arises from the fluctuation in the proportion of interviewers who are Indigenous as a result of mobility, cultural-specific factors, and the fact that it is simply harder to replace interviewers from a population which is relatively rare (in a statistical sense). If the response to Indigenous interviewers is qualitatively different, then large changes in the number of Indigenous interviewers in successive waves of a longitudinal survey will lead to large apparent changes in answers to questions. These interviewer-induced changes in response can fundamentally change the results of analysis that uses longitudinal techniques (which are exceptionally sensitive to any measurement error).

In the mid 1970s, the Henderson Poverty Inquiry in Brisbane secured high response rates using two-person interview teams comprising one Indigenous and one non-Indigenous person. The training and monitoring of interviewers made this a costly process. The CAEPR survey project in 1999 also used interviewing teams, but these were differently constituted from those of the Henderson Inquiry. The CAEPR project researchers worked closely with Aboriginal research facilitators, who introduced the project interviewers to potential respondents, helped explain the nature of the research to them, and acted as translators during the interview. They did not, however, administer the questionnaire itself; this was consistently done by the project researchers. This approach was relatively cost-effective and secured similar response rates to those in the Brisbane component of the Henderson Inquiry.

Large-scale longitudinal surveys are a relatively recent phenomenon in Australia and the recent spate of such social surveys is largely driven by relatively new technology—Computer Aided Telephone Interviewing (CATI). Such surveys are cost effective because they combine interviewing and data entry tasks, but telephone interviews have limitations in the surveying of Indigenous Australians and thus it is inappropriate to rely solely on this methodology. At the very least, telephone techniques should only be relied upon after a relationship has been established with a respondent through face-to-face interviews. Ideally, if cost constraints are not at issue, face-to-face interviews should be used at every stage.

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## Introduction

A small but growing number of social surveys in Australia focus on how the experiences of respondents change over time—that is, they provide longitudinal or panel data. For example, in the May 1999 Budget, the Commonwealth Department of Family and Community Services (DFACS) was allocated funds to conduct a large-scale Australian household panel survey. The proposed Housing, Income and Labour Dynamics in Australia (HILDA) survey will focus on labour market dynamics; among other things it will track changes in income and the processes of family and household formation over time. While longitudinal data collections such as the proposed HILDA survey are relatively new in Australia, several similar studies have been undertaken in other countries. For example, the Panel Study of Income Dynamics (PSID) in the USA tracks changes in income for original family units to whatever living arrangements they experience during the survey period, and includes an over sample of poor families. There are a number of persuasive arguments as to why Indigenous Australians should be included in a future Australian household panel (see Altman 1992; Altman et al. 1997; Altman and Taylor 1996; Council for Aboriginal Reconciliation and CAEPR 1997).<sup>1</sup>

The use of households rather than families as the basic unit of analysis in HILDA increases the possibility that mobility will affect the survey methodology (Hill 1992: 10). That is, the greater the number of people per unit, especially in multi-family households, the more likely it is that respondents will move between waves. This paper presents a timely discussion of the potential methodological and practical issues that will need to be addressed in administering the HILDA survey to highly mobile respondents.

Geographically mobile populations are notoriously difficult to survey, especially in a cross-cultural context (Martin and Taylor 1996; Smith 1991, 1992; Taylor 1996). In broad terms, it is difficult to ensure that respondents are representative of the underlying population and that data obtained are relevant to them. At a more fundamental level, mobile populations raise important questions about the appropriateness of 'methodological individualism'—the dominant paradigm of many modern social science disciplines. At a practical level, the problem can be as basic as not having any well-formed notion of what defines a household. Consequently, the resulting analysis of households is at best imprecise and, at worst, conceptually confused.

Longitudinal data add a time dimension to surveys and the resulting analysis is potentially sensitive to the initial conditions for individual respondents. This paper documents the lessons for the design and conduct of longitudinal data collections from recent surveys of an exceptionally mobile population, Indigenous Australians. Since high levels of mobility characterise other Australian groups, such as the unemployed and youth, it is likely that a number of the lessons described here will have wider application for HILDA.

There is currently only one large-scale longitudinal data set of Indigenous Australians, the Department of Employment, Workplace Relations, and Small Business's (DEWRSB's) longitudinal survey of Indigenous job seekers. Other data sets are restricted to tracing how economic outcomes vary over time for a few individuals or households; often at the level of particular communities. In this paper we review the methodological and research lessons that have emerged in the collection of cross-sectional data, then discuss two relatively small-scale longitudinal surveys to illustrate the problems encountered in surveying mobile populations. We then turn to the longitudinal survey commissioned by DEWRSB to illustrate the resulting difficulties for an analysis based on individuals. The concluding section of the paper summarises the major difficulties and proposes options for future longitudinal surveys.

### **Surveying Indigenous Australians: Lessons from cross-sectional data collections**

Almost all existing studies of Indigenous people are based on data collected at a particular point in time; that is, they are cross-sectional. While cross-sectional data have different strengths and weaknesses from longitudinal data, there is considerable overlap in the methodological issues encountered when surveying Indigenous people. This section reviews the existing literature on survey methodology for Indigenous Australians before discussing issues specific to longitudinal surveys.

The main conceptual and methodological lessons from existing cross-sectional surveys of Indigenous Australians have been summarised in an unpublished report by the Centre for Aboriginal Economic Policy Research (CAEPR) to the then Department of Social Security (DSS) on the inclusion of an Indigenous sample within a proposed National Survey of Living Standards (Altman et al. 1997). We briefly review the research findings of that report in order to highlight the broad issues that need to be addressed in a longitudinal context.

It is widely recognised that all data collection exercises involving Indigenous peoples may experience data quality problems arising from the high levels of mobility of individuals and families moving between dwellings and community locations; the general distrust shown by Indigenous peoples towards government departments, their methods and officers; the low levels of Indigenous literacy in standard English; and their communication heritage based on oral transmission (Alphenaar et al. 1999; Altman 1992; Smith 1992, 2000). Additionally, data on Indigenous self-identification in the census are becoming more complex to interpret (Gray 1987; Ross 1999). Since a specific question about (self-identified) Indigenous status was first asked in the 1971 Census, it has become clear that a significant number of people may either not record their Indigenous status or change their responses between censuses (Ross 1999).

Despite the existence of an extensive literature, major deficiencies remain in the understanding of Indigenous population mobility (Taylor 1997, 1998; Taylor and

Bell 1996b). While this partly reflects the recent broad-based interest among social scientists in Indigenous mobility, and a hitherto unsystematic approach to empirical research on the subject, one of the key constraints on further analysis continues to be the lack of longitudinal data designed to capture the short-term nature of much Indigenous population movement, so clearly evident in the ethnographic record (Altman 1987; Birdsall 1988; Finlayson 1991; Taylor 1988; Young and Doohan 1989). Also problematic is the failure of standard measures of mobility to accommodate a population that tends to conceive of residential space in regional and cultural terms, rather than in terms of a single place (Taylor 1996). This casts some doubt on the analytic usefulness of the 'usual place of residence' and 'visitor' criteria used by the Australian Bureau of Statistics (ABS) as benchmarks for gauging mobility.

In the longitudinal context, this mobility manifests itself in the practical difficulty of locating Indigenous respondents to surveys and consequent poor response rates, and conceptual difficulties in defining the recurrent identity of a household over time. That is, the reasons for mobility may be of less interest, in the design of surveys, than the ability to locate individuals and households over time.

Problems with response rates are not confined to data collected from Australia's Indigenous people. The response rates for Canada's Aboriginal Peoples Survey (APS) were just over 78 per cent and varied significantly from one settlement or reserve to another. Data were not collected in 181 reserves and settlements representing 20,000 individuals because enumeration was not permitted or was interrupted before all questionnaires could be completed. When one includes the reserves and settlements excluded from the initial sample, a total of 273 Aboriginal communities were incompletely enumerated (Statistics Canada 1993: 13–16). The 1994 National Aboriginal and Torres Strait Islander Survey (NATSIS) achieved a 90 per cent response rate, which was significantly in excess of expectations. The employment of Indigenous interviewers was cited as a major reason for this achievement.<sup>2</sup>

The existing literature raises a related set of issues in regard to the terms 'family' and 'household', pointing out the need for clarity about the definitional distinction between 'usual residents' and 'visitors' to a household. The significance of visitors to Indigenous households in adding to the overcrowding of dwellings has been demonstrated (Jones 1994; Taylor 1998), and other research has noted that the census definition of 'visitor' may not be culturally valid for many Indigenous people who regard visitors as usual residents of households (Daly and Smith 1995; Smith 1992, 2000). The ethnographic literature has commented on the permeability of household boundaries; the interdependence between families living in different dwellings as manifest in high rates of economic exchange; and the impacts of high flows of visitors on the economic wellbeing of families and the stability of household membership over time (Daly and Smith 1995; Finlayson 1991; Smith 1992, 2000; Smith and Daly 1996).

Many of the definitional and methodological issues raised in this paper are not new: they were raised when canvassing options for the NATSIS and in the course

of other analyses (Altman and Taylor 1996; Martin and Taylor 1996; Smith 1992; Taylor and Bell 1996b). If future surveys, including the proposed HILDA survey, are to have representative samples of Indigenous or other mobile populations, then the nature and rate of their mobility will need to be taken into account when designing sampling frame and collection procedures. Recent ABS census and the NATSIS experience both reinforce the case for face-to-face interviewing wherever cultural or linguistic difficulties are likely to be encountered (Alphenaar et al. 1999).

Many of these issues have been further investigated by CAEPR researchers in the recent conduct and analysis of longitudinal survey data with an identifiable Indigenous component. We consider this research and issues that arise from it in more detail below, paying special attention to their implications for the planning and implementation of the HILDA survey.

### **The CAEPR household survey project**

The small research project currently being conducted by CAEPR provides insight into some methodological issues that will influence how Indigenous Australian households might be appropriately included in HILDA (see Smith 2000 for a detailed report on the conduct and outcomes of the first phase of project research).

In 1998, CAEPR was contracted by DFACS to investigate, at the community level, the effectiveness and appropriateness of policy and service delivery of the welfare payments to Indigenous families for the care of their children (specifically, of what in 1999 were termed Parenting Payment and Family Allowance).<sup>3</sup> Rapid changes were occurring in national welfare policy and service delivery, and so CAEPR favoured a study carried out over a three to four year period, during which two Indigenous communities would be revisited each year and particular households within them surveyed.

The aim of the project is to obtain both qualitative and quantitative data using a mix of informal focus group discussions, participant observation, and the administration of questionnaires at the household level to key reference persons. The first phase of field research was carried out in 1999 in Yuendumu, a discrete remote and predominantly Aboriginal township of about 900 people located to the north-west of Alice Springs in central Australia; and in Kuranda, a small rural hinterland town in north Queensland a half-hour drive from the urban and tourist centre of Cairns, with a mixed non-Aboriginal and Aboriginal population of about 700 people.

In each community, the project aims to identify the organisational structures and composition of the household and family; the sources of incomes of individual members and the nature of the household welfare economy; the key cultural parameters of child-care arrangements; patterns of mobility of children and their parents; and the impact of that mobility on child-care arrangements and the delivery of welfare payments for the care of children. The research also canvasses

the wider availability of services to Indigenous families, focusing on those relevant to children; and household members' own perceptions of local Centrelink service delivery and other issues relevant to their family.

### ***Factors influencing survey design and conduct***

The two communities were selected for a combination of reasons. The regional distribution of the Indigenous population is markedly different from that of other Australians, and they have a far greater representation in rural and remote localities.<sup>4</sup> Location is reported to be a key dimension influencing Indigenous economic wellbeing. Locational factors and community type are therefore critical sampling issues. Accordingly, it was decided to select two communities which offered a contrast between remote and rural town situations. Kuranda and Yuendumu offer potentially contrasting sets of socioeconomic, cultural, and geographic variables relevant to policy and service delivery.

At a pragmatic level, particular project researchers have a long-standing research involvement with the two communities and an overall familiarity with their residents and circumstances.<sup>5</sup> This was seen as an important factor when conducting interviews with household members about essentially private family matters.

An important early phase in the conduct of the research involved negotiating participation by the two communities. In Kuranda this was done informally during the course of conducting a pilot, through a series of discussions with local Indigenous organisations. In Yuendumu, the process involved seeking and obtaining the written permission of the Yuendumu Aboriginal Community Council (no similar representative community-level body operates in Kuranda).

A number of initiatives were also taken to ensure the Indigenous community was reasonably well-informed, in advance, about the nature of the project.

1. Project coordinators for the case studies discussed the scope and objectives of the project with community organisations and key regional departments.
2. A pamphlet describing the scope and conduct of the project, and the conditions for maintaining confidentiality, was circulated.
3. Local Aboriginal people from each community were employed as research facilitators, to:
  - assist in the dissemination of information about the project;
  - assist project researchers to secure a broad sample of people to be interviewed;
  - facilitate the level of trust needed to secure permission from each person to be interviewed; and
  - ensure the culturally relevant conduct of interviews.

These initiatives were critical to the project's acceptance by the wider Indigenous community and to the eventual high rate of individual responses.

The project questionnaire and field methodology were piloted in both communities (Finlayson and Auld 1999). The pilot phase was an instrumental strategy for refining the format and content of the questionnaire, and adapting the field methodology. It was particularly valuable in identifying culturally-based factors which would influence the conduct of research, including how to locate respondents; the nature of local kinship systems; the range of family circumstances to be expected; the broad parameters of mobility; and local communication styles. The pilot phase demonstrated that there would be substantial difficulty in locating all members of a household on any given day, or even over a given week, because of the dispersed nature of the households within both communities and people's daily mobility within and between communities. It was therefore decided that information for all members for each household would be obtained from one key reference person.

### ***Sampling issues arising from the fieldwork phase***

Sample sizes for survey research that combines qualitative and quantitative data are necessarily small.<sup>6</sup> In Kuranda, face-to-face interviews were conducted in July 1999 with key reference persons from 28 households having a total of 180 members. In Yuendumu, data were derived from interviews with key reference persons for 30 households, whose members lived in 22 houses having a total of 238 individuals. Questionnaires for the 58 combined households cover a total of 418 household members comprising 226 adults and 192 children. As a very rough indication of coverage of the project's household samples (at 1999), the Kuranda sample represented approximately 78 per cent of the total Indigenous households in that community (at the 1996 Census), and the Yuendumu sample represented around 40 per cent of the total Indigenous households there (at the 1996 Census) (see Smith 2000, Ch. 2).

There are a number of factors relevant to the sampling method used in the project. The pilot phase highlighted the potentially substantial impact of mobility on sampling households in each community. As Finlayson and Auld (1999: 7) note, there is, in each community, a small window of opportunity in which to locate and identify people and to impinge on their time. The fortnightly delivery of welfare payments creates its own momentum. Indigenous people may travel to different communities to pick up their payments and, once in receipt of them, are concerned with immediate expenditure and consumption requirements. Their short-term capacity to travel also increases. It is often easier to locate and interview people in the 'off-week' leading up to a welfare payment. Other events within a community can also effect the availability and willingness of people to participate in surveys, including sporting activities, the performance of ceremonies, deaths and funerals, and the conduct of large community meetings. People's previous experience with research projects and government departmental scrutiny will also influence their willingness to participate.

The selection of respondents was informed by the local knowledge of the Indigenous women employed as project research facilitators, the long-term

familiarity of two project researchers, and the suggestions of local residents. This 'familiarity effect' will skew the sample towards particular members of the community. To ameliorate this, project researchers and facilitators sought to secure a wide selection of family types and a spread of ages among key reference persons. They also endeavoured to interview respondents from all major residential camps and villages in both communities.

By virtue of the project focus, there was an inevitable sampling of persons receiving welfare entitlements and a bias towards women, who are the majority of recipients for child-related payments. Thus the sample is intentionally skewed towards female welfare recipients, households with children, and Indigenous spouses. Full-time employment was a rarity amongst the respondents sampled, in both communities. Given the extent of Indigenous reliance upon welfare in both communities, as suggested by Centrelink aggregate data, and the fact that the households sampled included members participating in the Community Development Employment Project (CDEP) scheme, the sample is, nevertheless, broadly representative of the Indigenous population in each community.

#### ***Interviewing issues arising during the fieldwork phase***

CAEPR project researchers employed a number of anthropological interviewing techniques. Lengthy face-to-face interviews were carried out with each key reference person. Household genealogies covering all household members were recorded with these respondents: they proved an invaluable tool for accurately identifying the kin connections between all members and clarifying familial structures. The process of eliciting the genealogy was a familiar mode of interaction for the respondents and a means of leading them into the fuller questionnaire. During the analysis phase of the project, the genealogies were also used to develop 'social maps' of the sources of income at the household level.

Previous field experience amongst project researchers suggested that individual interviews would commonly be conducted with other household members coming and going, all contributing their views. This proved to be the case. Interviews were conducted in people's homes and in public areas such as cafes, halls, and offices, invariably with relations, friends, and numerous children present. This meant questionnaires often took some time to administer and covered a variety of issues, but that they also had a more natural flow than is usually the case.

These interviewing techniques were seen as a necessary means of avoiding the inherent limitations of 'methodological individualism'. The realities of extended kin networks and geographical mobility call into question the methodological appropriateness of this dominant paradigm for understanding Indigenous families.

A methodological focus on the elicitation of information from Indigenous individuals, via a questionnaire, must be contextualised against particular cultural considerations and adapted accordingly. Interview techniques must accommodate the social dynamics and the cultural principles surrounding information exchange. For example:

- when a person answers a question they may be reluctant to refer directly to certain other people with whom they are in a kin avoidance relationship, or who have passed away (in which case their names may be restricted);
- women are better at giving genealogical and family information and do so more readily than men (who will call young women in to help them answer these questions); and
- individuals may prefer to answer some questions with particular other relations present (or absent), or defer to a more senior family member to provide certain pieces of information.

As a consequence, in an interview situation, a group of people will constitute themselves as de facto respondents, answering the key respondent's questions during the interview process.

To accommodate these interview conditions, CAEPR project researchers adopted a 'social relational' methodological approach. The social pool of people making contributions to questions were treated as impromptu 'focus groups' and included as part of the interview process, with their comments and views recorded where possible as qualitative data against the relevant question. This approach is more positively oriented to Indigenous modes of communication where the individual cannot effectively be 'quarantined' for the purposes of eliciting information.

### ***Defining the family and household***

In conducting cross-cultural longitudinal research with highly mobile populations, it is important to consider the concepts being used and their application to, and interpretation by, the people being interviewed. Terms such as 'family', 'household', and key family relationships can have different meanings in different cultures.

The ABS (1991: 60) defines a 'household' in the national population census as 'a group of people who reside and eat together (in a single dwelling) ... as a single unit in the sense that they have common housekeeping arrangements i.e. they have some common provision for food and other essentials of living.' Persons living in the same dwelling, but with separate catering arrangements, can therefore be classified as separate households. However, the identification of a household in such a manner can be problematic where people are living in improvised dwellings, sharing domestic resources across dwellings, or are highly mobile (Finlayson 1991; Gray 1987; Martin and Taylor 1996; Smith 1991, 1992; Taylor 1996).

The ABS uses the concept of a 'usual resident' who lives at a particular address for six months or more to define household membership. In a highly mobile population, where people move between a number of home bases, this definition becomes difficult to apply. The ABS concepts of 'visitor' and 'absentee' also become problematic. For people who have 'no usual address', the ABS codes the



dwelling in which they reside on census night as their 'usual address', thereby 'immobilising' people who may change residence frequently.

Another important social grouping is the 'family', defined by the ABS as 'a group of related individuals where at least one person is aged 15 years or over' (ABS 1991: 47). The ABS takes the nuclear family of parents and children as the base around which all family types are constructed. Other families within the household are placed in relation to this 'primary family'. If there are more than three families in a household, the adults in the additional family are 'disbanded' as a family and classified as related individuals who are assigned to the 'primary' family.

The census presents a 'snap shot' view of the Australian population focused on residentially stable households and therefore tends to conceal the social fluidity of many households, to truncate extended family relationships, conceal classificatory parental relationships, and create artificial family boundaries. For the CAEPR research project, the definitions of 'household' and 'family' were broadened in order to capture some of these dynamic features of Indigenous life.

Extended family formations are the norm in both the communities under study and do not easily fit into—indeed they defeat—census family definitions. The complexity of extended family formations is matched by equally complex definitions of parenting and related child-care arrangements. These complexities in turn influence household membership and domestic economies. To accommodate these complexities, the CAEPR survey used a more flexible definition and coding of the family. Extended family formations were identified via household genealogies and the actual number of families in a household was enumerated with no attempt to disband families where there were more than three in a household. Parenting was also more broadly defined to reflect the reality of who was actually looking after a child and to allow for the possibility that this person may differ over time.

For the project, the term 'household' was given a set of nested operational definitions to capture some of the basic temporal and spatial factors involved in their formation and operation. 'Household' was minimally defined as the group of two or more related or unrelated people who resided in the same dwelling the night previous to the questionnaire interview, who regard themselves as a household, and who make common provisions for food and other essentials for living. This definition is similar to the ABS census definition except it recognises the Indigenous view of visitors as household members. Visitors were recorded on household genealogies, were classified as usual residents, and their income was included in estimates of household income.

The baseline definition was expanded through recording all those people who stayed at the same location for one night or more over the previous two weeks. In Yuendumu, where more detailed observation was possible, the project researcher was able to gather data on total number, average, and actual flows of persons who stayed overnight for particular households over a fortnightly period (see Musharbash 2000). The household group within a dwelling was further divided

into groups which shared food among themselves, allowing the identification of separate households within one dwelling and across kin-linked dwellings. Additionally, in both community studies, the extent of their mobility (within and out of their community) was recorded for each key reference person and their children over the previous four weeks. This provided a more complex and dynamic picture of actual household composition and short-term developmental cycles.

### ***The impact of mobility on household composition and formation***

Mobility is a crucial factor in the composition and formation of Indigenous households. The community survey research suggests that some households may change their composition daily. Adults and children in both communities are extremely mobile, travelling between a set of usual home bases within and across different communities. Children travel with, and without, their parents and siblings and this flow is unpredictable. Their mobility has a significant impact on the economic viability of households in which they reside. More often than not, key economic relations extend over the boundaries of a single dwelling and residents shift between their usual home bases, creating kin-related clusters of households.

A brief consideration of the extent of mobility and its impact upon household membership and developmental cycles demonstrates why a more flexible operational definition of household is required. In Yuendumu, censuses were taken nightly by the project researcher of all persons staying overnight in particular households (see Musharbash 2000). The researcher had been recording such censuses over a twelve-month period and the following is one example of changing household composition over the course of a fortnight, in a particular four-bedroom house. An average of 21.9 persons stayed per night (ranging from 16 to 25 people), comprising an average of 13.7 adults (16 years and older) and 6.8 children. The project researcher also identified all individuals who slept at the house over the full fortnight period. A total of 27 different adults and 15 different children slept at the house over the fortnight, totalling 42 different persons. Out of this flow of 42, a core of 11 persons (7 adults and 4 children) slept at the house for the whole two-week period.

A number of factors were identified as underlying this process of mobility, including the need to obtain access to cash, food and other resources; the availability and quality of housing; overcrowding; conflict between household members; the impact of death; and individuals preferred 'travelling' patterns (see Finlayson et al. 2000 and Musharbash 2000). It is important to note that mobility and the resulting developmental cycles of households are not ad hoc phenomena, but are subject to the regulating influence of social relatedness, and systems of kinship and group identity. Thus, the ABS definition of 'visitor' was found to be inappropriate in both communities. All newcomers staying overnight are regarded as family and become full household members (making demands upon domestic resources) when they take up residence, no matter how briefly. Many people have multiple usual home bases.

These core and flow data present a picture of changing short-term household composition. Earlier field research in Kuranda households by Finlayson (1991) over a period of 18 months revealed the longer-term consequences of such flows for household developmental cycles which are characterised by a complex cycle of expansion, contraction, disintegration and reformation (see also Altman 1987; Sansom 1988). These developmental cycles suggest that high rates of mobility and flows through serial 'usual residences' can have substantial impacts on the economic viability of families and the stability of their households. Overcrowding and high flows can lead to the faster depreciation of housing stock and faster depletion of domestic goods, and can exacerbate environmental health problems and conflict in households. When members are reliant on low or erratic levels of income, their comings and goings can create adverse demands on the resources of other householders and diminish the savings capacity of core household members.

Data taken at a point in time may produce considerably different estimates of household composition and income, at odds with the more volatile levels of household income resulting from the mobility of members. High levels of mobility also suggest that difficulties may be encountered in subsequent survey years in locating the individual members of a household, and that the likelihood of finding the same set of people as members is remote. Thus what constitutes 'the same household' from one year to the next remains a critical methodological issue for surveying highly mobile populations.

### **The Barriers to Work Project**

The second longitudinal survey examined here is the Barriers to Work Project (BWP), which investigated the employment experiences of 25 young Indigenous people (aged 20–30 years) in a large city and a regional town during 1997 and 1998 (Öther-Gee 1999). The case studies reinforce the findings of other research into the impact that Indigenous people's values and social relations have on their participation in, and response to, surveys. Particularly significant was the commitment to family. In the context of investigating labour force participation experiences, the research found that family obligations were both a major reason to seek and stay in work, and an often-cited reason for leaving employment. The dominance of family obligations, together with a short-term focus on economic survival, influence the priorities that shape the lives of many Indigenous people.

Before discussing the survey methodology of the project it is worth outlining some of the lifestyle issues, highlighted in Öther-Gee (1999), which affect Indigenous people's prospects of gaining and retaining employment. Some of the relevant issues identified were low levels of self confidence; problems with access to transport and financial resources; a lifestyle characterised by unpredictability and lack of routine; high levels of mobility (often linked to family obligations); health and substance abuse issues; a greater level of comfort in relating to other Indigenous people and organisations rather than to others. Similar issues were encountered in the design of the CAEPR survey (Smith 2000). The BWP relates

these factors to the advantages and disadvantages of employing Indigenous interviewers.

The BWP was managed by a consultant contracted by an Indigenous organisation, the Manguri Corporation. To ensure that the survey data were culturally appropriate, Manguri hired Indigenous interviewers wherever possible. The other principle used in recruiting interviewers was that they should be, wherever possible, of the same gender as respondents.

The methodological discussion in Öther-Gee (1999) illustrates potential difficulties with using Indigenous interviewers. Some interviewers experienced life events during the project that were of far more immediate concern to them than their commitment to the survey, for example a death or illness of close relatives, offending and incarceration of a young close relative, relationship breakdown, loss of employment, loss of funding threatening an employment contract, substance abuse, loss of driver's licence, and breakdown of arrangements for child care. The impact on the project is somewhat difficult to describe but included loss of contact with staff for weeks at a time, deadlines being missed without notice, the necessity to recruit new staff, and commitments being made but not kept. Notwithstanding some disruption to the interview process, the Manguri Corporation were largely satisfied with their recruits.

Mobility is not only an issue for securing responses to surveys. The mobility of Indigenous interviewers resulted in three members of staff having to be replaced and research staff invested much time in locating interviewers. Official records of contact addresses and phone numbers were of little use and the informal network proved a far more reliable source of information about location.

Some well-established cultural communication patterns added to the challenges faced by project management. As the CAEPR project research noted, the tendency to 'say yes when you mean no' and the desire to avoid 'giving bad news' made it sometimes difficult to determine the expectations of Indigenous respondents. An additional factor in the BWP was the variable quality of written reports. While the information gathered verbally by the interviewing staff was of a high quality and very insightful, the written material provided did not always reflect this. Written reports were supplemented by lengthy verbal reports from the interviewer to the Project Manager whenever necessary.

The main lesson from the BWP methodology is that longitudinal surveys of mobile populations need to be culturally relevant in their design and implementation in order to ensure data quality. However, the use of Indigenous interviewers can be relatively expensive in terms of training, and of continuity of survey methodology. Making use of informal networks within the Indigenous community is an important way to contain survey costs as well as to minimise non-response and attrition among respondents.

### **The DEWRSB longitudinal survey of Indigenous job seekers**

The final survey examined is DEWRSB's longitudinal survey of Indigenous job seekers collected between early 1996 and late 1997. The Evaluation and Monitoring Branch of the Department of Employment, Education and Training (DEET, now part of DEWRSB)<sup>7</sup> engaged Roy Morgan Research (hereafter Roy Morgan) to conduct a longitudinal survey of Aboriginal and Torres Strait Islander (i.e. Indigenous) people. The main purpose of the survey was to study the participation of Indigenous clients in the labour market to explain the apparent lack of sustained employment outcomes noted in the 1994 Aboriginal Employment Development Policy (AEDP) Review. This was the first longitudinal survey of Indigenous people and, as a result, it is not surprising that it encountered a number of implementation difficulties. Despite the limited budget allocated to the task and the compromises that this entailed, the resulting data set nevertheless provides a basis for better understanding Indigenous labour market dynamics.<sup>8</sup>

DEWRSB's survey data are supplemented by relevant administrative data on program participation and case management. The original sample for the survey was extracted by DEWRSB from the Jobsystem database of Commonwealth Employment Service (CES) Indigenous clients. Interviews for the survey were conducted in a range of urban areas which covered metropolitan (Sydney, Brisbane-Ipswich, Hobart, and Cairns), large rural centres (Dubbo, Shepparton, Launceston, and Port Augusta) and remote centres (Broome-Derby, and Alice Springs). The sample was selected to exclude remote communities who have no access to mainstream labour markets.<sup>9</sup>

The major issues arising in the DEWRSB data are the implications of population mobility for sample design, the selection and retention of Indigenous interviewers, data quality, and consistency in survey methodology. The Roy Morgan final report on the survey methodology is briefly summarised as an introduction to the issues involved (Roy Morgan 1998). This is followed by a more detailed treatment of non-response and attrition rates, and of the implications for any analysis.

#### **DEWRSB survey methodology**

The survey employed face-to-face interviewing, predominantly by Indigenous interviewers. Roy Morgan worked collaboratively with Indigenous organisations in each region. Telephone interviews were occasionally used in the course of the research: this methodology was primarily employed when respondents had moved to an area not covered by the survey. Telephone interviews were also conducted when supervisors followed up a non-response and found that the person was prepared to participate in a telephone interview (even where they had previously been unavailable for a face-to-face interview).

Roy Morgan advertised for interviewers nationally in the *Koori Mail*, an Indigenous newspaper, and through local and regional Indigenous networks in the second and third wave of the research. Very few interviewers were actually recruited

using this method: five in wave 2 and two in wave 3. Most interviewers were, therefore, recruited through informal network arrangements, or from seeing the work advertised in local offices and meeting places such as the local CES. Sustained support was provided in the training, briefing, and monitoring of coordinators and interviewers.

Roy Morgan attempted to employ as many Indigenous people as possible and only considered non-Indigenous people if they were nominated or supported by the relevant regional partners. When it was not possible to employ Indigenous interviewers, they employed non-Indigenous interviewers who could demonstrate the necessary skills and sensitivities to carry out the work. Where non-Indigenous interviewers were employed, Roy Morgan obtained agreement from DEWRSB and the relevant regional partner about an individual's suitability.<sup>10</sup> Table 1 shows the total number of Indigenous and non-Indigenous interviewers who worked on each wave of the survey in each region. In aggregate, the number of Indigenous interviewers substantially declined over time relative to other interviewers. This observation is reminiscent of the BWP where there was considerable fluctuation in the Indigenous composition of the interview workforce over time.

**Table 1. Number of Indigenous and Non-Indigenous interviewers in DEWRSB survey of Indigenous job seekers**

Region	Wave 1		Wave 2		Wave 3	
	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous
Alice Springs	10	1	4	3	4	5
Broome–Derby	7	1	2	2	4	0
Cairns	7	2	6	3	8	2
Dubbo	11	1	7	1	5	0
Brisbane–Ipswich	11	10	10	3	7	4
Sydney	11	5	9	4	9	4
Hobart–Launceston	9	0	9	1	8	0
Port Augusta	9	1	4	2	3	2
Shepparton	9	0	9	3	4	1
Total	84	21	60	22	52	18

Source: Roy Morgan Research (1998), Table 5.

Indigenous interviewers were generally more likely to be used in non-metropolitan areas. For example, in wave 1, Alice Springs, Broome–Derby and Port Augusta

only had one non-Indigenous interviewer, but as many as ten Indigenous interviewers. At the other extreme was Brisbane-Ipswich region for whom just under 50 per cent of interviewers in wave 1 were non-Indigenous.

As Table 1 indicates, fluctuation in the Indigenous composition of the interview workforce was especially pronounced in non-metropolitan areas. For example, the number of Indigenous interviewers fell from ten to four in Alice Springs between waves 1 and 2. These variations imply that Indigenous interviewers were either relatively mobile or harder to replace than non-Indigenous counterparts. Whatever the reason, the changing composition of interviewers has profound implications for data quality if it is the case that Indigenous and non-Indigenous interviewers elicit different responses. This will be explored in more detail in the section examining the implications of data quality problems for any analysis.

### ***DEWRSB's sample of Indigenous job seekers***

Job seekers were eligible for inclusion in the sample if they resided within reasonable travelling distance from a mainstream labour market. The aim was to exclude job seekers who would be limited to CDEP scheme employment. The criterion used to define a 'mainstream labour market' was whether a CDEP scheme was the only real employment option in the region. Postcode areas which fell more than 100 kilometres from a city or town centre were excluded to limit interviewer travel costs.

A sample of job seekers aged 18–64 years were selected from CES databases as at 31 January 1995. Younger job seekers (aged 15–17 years) were selected from the databases as at 31 March and 31 July 1995. Another condition on the sample was that job seekers must have made contact with the CES in the six months before the time when the databases were actually accessed (January 1996). The rationale for this condition was that job seekers who had been registered for over one year were more likely to have participated in a labour market program. The most recent address information was extracted from the database at time of access.

Indigenous job seekers were eligible to be included in the youth sample if they were eligible for the Youth Training Initiative (YTI), by virtue of their age at the time of registration, and were registered with the CES on or after 1 October 1994. Job seekers were excluded from the original sample where duplicate records were obtained; they were recorded as deceased; they were indicated by the CES as being violent; or they had participated in a known survey since 31 August 1995 according to the monitoring system run by the Evaluation and Monitoring Branch.

The original sample totalled 5094 names. Because a higher than expected proportion of the sample could not be contacted during the first enumeration period, an additional sample totalling a further 2127 names was added. This additional sample covered six of the nine original regions, plus additions to the Brisbane and Hobart samples drawn from Ipswich and Launceston respectively as insufficient sample numbers were available in the originally selected areas.

Only the remote areas (Alice Springs, Broome–Derby and Port Augusta) did not require additional sample names.

The total sample selected for wave 1 was thus 7221 names (6362 from the general sample and 859 from the YTI sample), of whom 2503 Indigenous job seekers were successfully interviewed for the wave 1 interview, in March–June 1996. This figure represents a 35 per cent response from the sample provided by DEWRSB.

Table 2 shows the number of useable responses for the respective interviews. A slightly higher proportion of the initial YTI sample was successfully interviewed (38.4%) than of the sample of 18–64 year olds (34.0%). The rest of this subsection focuses on the data presented in Roy Morgan's final report.

The sample for wave 2 included all respondents interviewed for wave 1 and an additional 1505 names drawn as a supplementary sample. This supplementary sample was drawn by the Department of Employment, Education, Training, and Youth Affairs (see footnote 6) from the Jobssystem database as at 31 August 1996 and comprised Indigenous people aged 18–25 years, living in Sydney and Brisbane, who had had contact with the CES in the previous three months. In wave 2, 74 per cent (1859) of wave 1 respondents were successfully reinterviewed, with an additional 668 interviews achieved from the supplementary sample (44.4 per cent of that sample).

**Table 2. Initial sample sizes for each sample, and number successfully interviewed at each wave**

	Initial sample extracted	Wave 1 interview	Wave 2 interview	Wave 3 interview
General sample	6362	2162	1596	1367
YTI sample	859	330	252	213
Supplementary sample	1505	n/a	668	519

Note: Wave 3 interviews include 57 remote area respondents, 45 from the general sample and 12 from the YTI sample, who were missing from wave 2 but successfully recontacted in wave 3 (see discussion below). The last three columns refer to the number of interviews that provided some useful information, which is slightly less than indicated in Roy Morgan (1998).

The main sample for the third wave comprised the 1859 wave 1 respondents who were interviewed at wave 2. Of these, 1527 (82.1%) were successfully reinterviewed. In addition, interviews were attempted with 104 respondents interviewed in wave 1 from the remote regions of Broome–Derby, Alice Springs, and Port Augusta who, for mobility or other reasons, were not able to be interviewed in wave 2. Of these 57 were successfully recontacted at the third wave. Of the 668 respondents from the supplementary sample, 513 (76.8%) were interviewed at the third wave.



As part of the database compilation, four main samples were defined and weights were calculated for each sample. These samples are:

- main longitudinal sample—those interviewed in waves 1, 2 and 3; and the 57 individuals interviewed in wave 1 and wave 3, but not wave 2, for whom wave 2 data was imputed;
- main cross-sectional sample—those interviewed in wave 1, irrespective of their wave 2 or wave 3 status;
- supplementary longitudinal sample—those in the supplementary sample interviewed in both wave 2 and wave 3; and
- supplementary cross-sectional sample—those in the supplementary sample who were interviewed in wave 2, irrespective of their wave 3 status.

Roy Morgan calculated appropriate weights for separate age group and sex within each region. The main longitudinal sample and the main cross-sectional sample could be weighted to the source population, that is Indigenous job seekers aged 15 or over in the 11 areas covered. Similarly, the supplementary longitudinal sample and the supplementary cross-sectional sample could be weighted to the population of 18–25 year old Indigenous job seekers in Sydney, Brisbane–Ipswich. It is important to note, therefore, that it is not appropriate to add weighted estimates from the four samples—they do not represent mutually exclusive populations.

Table 3 provides a breakdown of non-response by reason for non-response. The major reason was the survey's inability to contact the respondent due to a change of address. In wave 1, where no alternative contact information was available, non-contacts for this reason accounted for 32.5 per cent of contacts attempted. As might be expected, once initial contact had been made and alternative contact information was collected, this problem decreased, accounting for 14.7 per cent and 11.2 per cent of contacts attempted in wave 2 and wave 3 respectively.

Refusal rates were low in most areas, with a rate of 2.8 per cent overall for wave 3 compared with 3.9 per cent and 7.1 per cent in waves 2 and 1. Around 0.7 per cent of the sample was identified as 'in gaol' in both wave 2 and wave 3, and interviews were not attempted except in Alice Springs, where three interviews were conducted with short-term inmates. The area with the highest proportion of the sample identified as being in gaol in wave 3 was Port Augusta, at 1.9 per cent.

While many respondents could be traced and interviewed in their new location, a significant proportion of the sample proved to be untraceable. The column 'Not available (other)' refers to situations where it was not clear whether a respondent had moved, or where they were away in a non-survey region, or were not contactable and did not return during the survey period. It also included those who were sick or in hospital. 'Other non-response' includes those who were deceased, who had moved to a new address but were not contactable, those whose address was not accurate or contactable, and those for whom alternate contacts refused to provide contact information.

**Table 3. Breakdown of response and non-response rates**

	Wave 1 Main sample	Wave 2 Main sample	Wave 2 Supplementary sample	Wave 3 Main and supplement ary combined
Total response	39.8	74.2	44.4	80.7
Total non-response	60.2	25.6	55.6	19.3
Refusals	7.1	3.9	4.1	2.8
In gaol	n/a	0.7	1.9	0.7
Not available (other)	14.1	1.2	1.7	1.9
Moved, no new address	32.5	14.7	39.3	11.2
No contact, same address	n/a	3.4	6.6	2.3
Other non response	6.5	1.6	2.1	0.4

Note: Percentages are expressed as a proportion of interviews attempted. The second and third wave response rates are not necessarily attrition rates, given that samples were augmented through various means between waves.

Source: Roy Morgan (1998), Table 10.

The only categories in Table 3 for which mobility is not a possible explanation are the 'refusals', the 'in gaol' and the 'no contact made at the same address'. Given that they account, in total, for less than one-third of non-response in the respective waves, this is *prima facie* evidence that the poor response rates and high attrition rates are related to the high levels of mobility among Indigenous job seekers.

The validity of using these weights in the analysis of the data hinges on the representativeness of the sample. If the people who responded to the survey are not representative of the population being examined, then it would be misleading to use the weights. All tables in this paper are based on the (unweighted) number of persons who responded to the respective questionnaires.

### **Representativeness of the DEWRSB sample**

The DEWRSB survey was never intended to be representative of the Indigenous population as a whole: it is based on a sample taken from the CES register of unemployed job seekers in a limited range of locations. It is also unlikely to be representative of Indigenous job seekers for several other reasons, including the questionable accuracy of the Indigenous identifier in administrative data sets; over-sampling of long-term unemployed; and other unobserved characteristics of a CES-based sample. While each of these is an issue that needs to be recognised by the analyst, they are relatively minor in comparison to the problems arising from the very high levels of initial non-response (that is, the extent to which

people who were selected to be in the survey could not be located or refused to be interviewed at the first interview).

The sample was selected from persons who were identified, for administrative purposes, as being Indigenous persons. One issue that always arises with administrative data is whether the data includes any 'bogus identification' of non-Indigenous people. However, this problem is likely to have been substantially minimised by the use of Indigenous interviewers and organisations in the survey collection.

There is an inherent tendency to over-represent the long-term unemployed in samples drawn from a register of unemployed persons at a particular point in time, for the reason that being registered with the CES implies that the current spell of unemployment is not completed. That is, the length of the unemployment spell is not known because at the time of selection a person was still looking for work. In the technical literature this problem is known as 'right censoring' of the data because the information on future unemployment, and therefore unemployment duration, is censored. There are likely to be more long-term unemployed included in the sample because their spell is more likely to be right censored.

Another reason for the over-sampling of the long-term unemployed is that people may not register with the CES for short periods of unemployment. Persons registered with the CES are also likely to differ from other Indigenous job seekers in other unobserved ways. Studies of displaced workers in Australia have found that the individuals who have the lowest probabilities of re-employment are those who register with the CES (Borland 1998).

Over-sampling of the long-term unemployed might be addressed using appropriate statistical techniques if information is provided on the duration of unemployment for all clients in the original random sample (Greene 1997). It seems reasonable to assume that right censoring of unemployment spells is apparent in the initial sample used by Roy Morgan.<sup>11</sup> Unfortunately, nothing can be done subsequently to correct for the right censoring. The tendency to over-sample long-term unemployed needs to be taken into account in the initial sample design of future longitudinal surveys, before any data are collected.

The representativeness of the sample is put most into question by the level of initial non-response. Initial non-response refers to the people who were selected to be in the survey who could not be located, or who refused to be interviewed. This is likely to be a very serious issue for the representativeness of the Indigenous job seeker data as the initial non-response rate was very high, being in the order of two-thirds (see Table 4).

**Table 4. Basic demographic characteristics of sample and wave 1 respondents and response rates**

	Total sample	Wave 1 response rate (%)	Attrition rate between waves 1 and 3 (%)
Number of observations	7221	34.4	36.4
Sex			
Male	4541	32.8	40.0
Female	2680	37.1	31.0
Age			
15–19	1698	35.7	36.6
20 +	5523	34.0	36.3
Region:			
Sydney	1407	42.6	43.7
Brisbane–Ipswich	1382	33.3	38.3
Hobart–Launceston	732	26.8	39.8
Cairns	885	29.6	40.5
Dubbo	653	52.7	24.1
Shepparton	444	46.6	39.6
Port Augusta	524	34.9	23.0
Alice Springs	596	20.0	32.8
Broome–Derby	598	18.9	31.9
Unemployment duration:			
N/a or nil	1652	38.9	n/a
Less than 12 months	1081	33.2	n/a
12 months or more	4488	33.0	n/a

Note: Respondents are those who replied to the wave 1 survey question D1, 'Do you have a job now?' Measurement of unemployment duration is confined to those people who were registered on the Jobssystem allowance database at the time of the extraction. Data on attrition rates by unemployment duration were not provided.

Few comparisons can be made between the characteristics of the survey respondents and the total sample, due to the very limited number of characteristics available from the CES administration system. Nevertheless, these limited comparisons show only slight differences between the response rates of males and females and between the youngest members of the sample (15–19 year olds) and their older counterparts (over 20 year olds). These observations might appear surprising at first glance, since young adults, and young adult males in particular, are often under-represented in sample surveys due to higher short-term mobility. However, age and sex quotas were set to ensure that male youths

were accurately represented in the final data set.<sup>12</sup> There are more substantial variations by region, with higher than average interview rates in Dubbo, Shepparton and Sydney and very low response rates for the most remote populations in Alice Springs, Broome–Derby. While right censoring of unemployment spells appears to be an issue in the initial sample, the long-term unemployed are no less likely to respond to wave 1 than short-term unemployed.

Because the Indigenous job seeker survey is longitudinal it suffers from sample attrition: some of the individuals who were initially interviewed as part of the survey in wave 1 are missing for one or more of the subsequent interviews. If the sample attrition is non-random then the data set will become less representative over time and statistics and inferences derived from the data may be biased (Verbeek and Nijman 1992). In this survey, there is a relatively high level of sample attrition amongst those interviewed after wave 1, with only a little under two-thirds (63.6 per cent) of the respondents interviewed in the main initial sample being re-interviewed in wave 3 (derived from Table 4).

The sample attrition may be related to observable characteristics such as age, level of educational attainment and degree of geographic mobility, and it may be related to unobservable characteristics such as ability or motivation to participate. In this section we analyse the effects of sample attrition between waves 1 and 3 on observable characteristics at the wave 1 interview.

Overall, attrition rates for males were higher than for females: 40.0 per cent as opposed to 31.0 per cent. In general, attrition rates were highest in capital cities and major urban areas. In Sydney, 43.7 per cent of respondents to wave 1 failed to answer the wave 3 questionnaire. In contrast, the attrition rate for Dubbo was 24.1 per cent. Despite the re-interviews for wave 3 conducted in remote areas, the male attrition rates in Broome–Derby and Alice Springs were only just below the average. However, attrition in Port Augusta was substantially lower than the average (31.9%).

Attrition rates tend to be higher among the more mobile younger age groups, although the difference is not large. This observation is also consistent with the fact that attrition rates were lowest among the wave 1 employed (35.5% and 28% for males and females respectively) and among those engaged in study (35.7% and 20.3% for males and females respectively).

The unemployed, who are nominally required to move if a suitable job is available, tend to have the highest attrition rates. For example, 42.4 per cent of unemployed males who were actively looking for work at wave 1 did not answer the last questionnaire. Interestingly, there is almost no difference in the attrition rates between long-term and other unemployed males, but attrition rates for long-term unemployed females are 6.1 per cent higher than for other females looking for work.

One explanation for the low response rates to successive waves is the substantial delay between sample extraction and completion of wave 1 questionnaires. The information on residence was up to 12 months old at the time of the first

interview, leading to difficulties in locating mobile people selected in the initial sample.<sup>13</sup>

Mobility of potential respondents explains more than half of the non-response in the respective waves (Table 3), so that the longitudinal sample is clearly biased towards those who did not move. Even among those who responded to both waves 1 and 3, a third had changed addresses in the survey period (of approximately 18 months). Of those who did move at least once, the average number of moves was 1.5 between successive waves. In most cases, respondents who were surveyed did not move too far, with 76.0 per cent of movers being re-interviewed in the same postcode as at their previous interview. Of those who responded to both waves 1 and 3, 7.7 per cent moved between Statistical Divisions.

Taylor and Bell (1996a: 397) show that, over the five-year period between 1986 and 1991, 44.6 per cent of Indigenous people changed their address. Two pertinent measures of inter-censal mobility are that 10.4 per cent of Indigenous people moved between regions in the same State, and 5.1 per cent moved interstate. While there are some small differences between our definition of region (Statistical Division) and that used by Taylor and Bell (Statistical Local Areas in remote areas and Statistical Divisions elsewhere), it appears that the survey respondents have a similar level of mobility to the rest of the Indigenous population.

Preliminary estimates of mobility from the 1996 Census confirm these observations (Taylor and Bell 1999). The overall mobility in the five years to 1996 increased to 52.2 per cent of the population, while the proportion who moved in the year before the census was more than half of this number (29.2 per cent). The five-year rate is not five times the one-year rate because many people move more than once. The majority of moves are within the local area. Taylor and Bell confirm that the unemployed are more mobile than either the employed or those outside the labour force on all measures of mobility; this is consistent with the finding of a higher rate of sample attrition among those unemployed in wave 1. This is also true for unemployed people in Australia generally, although the mobility rate among Indigenous unemployed is one-third higher than for other unemployed (Taylor and Bell 1999).

### ***Implications of data quality for analysis***

The data quality issues described above had direct implications for the scope of the analysis possible using the DEWRSB data. The three draft reports submitted to DEWRSB describe the major aspects of the data and provide preliminary analysis of relevant issues (Gray and Hunter 2000; Hunter, Gray, and Chapman 2000; Hunter, Gray, and Jones 2000). All of these reports are circumscribed by problems relating to data quality.

A subtle, but important, data quality problem arises from the variation in the Indigenous composition of interviewers over time. As discussed in the section on the BWP, the likely reason for the fluctuations in composition of interviewers is

likely to be a result of mobility, cultural-specific factors and the fact that it is simply harder to replace interviewers from a relatively small Indigenous population. If Indigenous interviewers receive qualitatively different responses from Indigenous respondents, then large changes in their numbers over successive waves of a longitudinal survey may lead to apparent changes in answers to questions. These interviewer-induced changes in response can fundamentally change the results of analysis which use longitudinal techniques, since these are notoriously sensitive to small changes in the initial conditions in the data. Consistency in survey methodology is of paramount importance when conducting longitudinal surveys. It is necessary to ensure that any changes in the data relate to individual circumstance rather than an unintentional variation in the way questions were asked.

Questionnaire design is also a crucial feature of any longitudinal survey. The failure to ask a consistent set of questions in each wave of the DEWRSB survey hampers the ability to conduct analysis of changes in behaviour over time. The lack of consistent data is an important issue for this survey. Suffice to say that such inconsistencies are not fatal, but they certainly place a limitation on the possible scope of the longitudinal analysis.<sup>14</sup>

The sampling methodology in the DEWRSB survey was inordinately intricate, primarily because of the problems encountered in locating the sample up to one year after the last contact details were recorded on CES database. But it also probably reflected the fact this was the first large-scale collection of information over time on Indigenous job seekers. To that extent, it was experimental. One way to minimise the complexity arising from this methodology is to focus the longitudinal analysis on the people who responded to all three waves (Hunter, Gray, and Jones 2000). However, in some cases, the supplementary sample can be used to boost the sample size for particular subgroups (for example, Indigenous youth).

The more substantive sticking points for the analysis are the censoring of the data and the high non-response rates.<sup>15</sup> Duration analysis and panel techniques are particularly sensitive to the initial conditions experienced by individual job seekers. For example, if we do not know the true unemployment duration of an individual it is difficult to estimate the probability of their leaving unemployment or moving between other labour force states. It is almost impossible to construct a statistical model of labour market transitions that will not be sensitive to small changes in unemployment history. Techniques such as random effects and fixed effect estimation place a lot of stress on rather subtle changes in an individual's labour force status and it would be inappropriate to use them on the DEWRSB data. However, it is possible to describe the sample using elementary cross-tabulations and an analysis that estimates the probability of getting a job and retaining it.

Notwithstanding any broad similarities between the respondents and the underlying population of Indigenous job seekers, the high non-response and

attrition rates mean that it is not possible to be confident about using weights in any analysis.<sup>16</sup>

DEWRSB's Indigenous job seekers longitudinal survey data has obvious limitations. Nevertheless, the results discussed above show enough promise to encourage those policy makers who are concerned with Indigenous employment outcomes to pursue further longitudinal studies. The data are unique, and all three draft reports to DEWRSB provide insights into the dynamics of Indigenous labour market behaviour (Gray and Hunter 2000; Hunter, Gray, and Chapman 2000; Hunter, Gray, and Jones 2000). That is, despite the poor response rates and high attrition rates, the analysis of job retention and changes in labour force states provides the best basis yet for policies aimed at achieving a 'practical reconciliation' in the area of Indigenous employment. The DEWRSB survey was conducted at a fraction of the cost of the NATSIS. Given that it is longitudinal in nature, it represents value for money.<sup>17</sup>

While the DEWRSB survey highlights the role of mobility in longitudinal surveys, it is important to reiterate that it is based on an administrative sampling frame and is neither a population nor even a household survey. It is therefore intrinsically different from the proposed HILDA survey. Having noted this fundamental distinction in methodologies, we conclude by generalising from the lessons that can be derived from the three surveys described here, to the issues that will need to be addressed when surveying mobile households as part of the HILDA survey, or any other national longitudinal survey.

## **Conclusion: Surveying mobile populations in a longitudinal context**

### ***Issues of definition and measurement***

The experiences of longitudinal surveys which include Indigenous people highlight the importance of taking into account patterns of mobility and household and family formation in their design and implementation. However, one needs first to define and measure the factors underlying these patterns.

It should be noted from the outset that a lack of longitudinal data on short-term population movement is a deficiency common to all studies of Australian mobility and is certainly not unique to studies of the Indigenous population (Taylor and Bell 1996b). Mobility of potential respondents to DEWRSB's longitudinal survey explains more than half of the non-response in the respective waves, so the sample is clearly biased towards those who did not move. Therefore, whatever the size of the Indigenous sub-samples of future surveys, it is important to ensure that geographically mobile populations are adequately represented among survey respondents. Unfortunately, mobility is multi-dimensional and is not easily measured.<sup>18</sup>

There are a number of relevant factors for measuring mobility and its impact, including the number of places a person has stayed both since the last interview (or in the last 12 months), and for a specified short period immediately preceding



the next interview (for example, the previous 4 weeks); the length of time spent at all residences in this period; the location of each place (usually, a postcode identifier); the reason for moving; whether the place is a 'usual residence' in the ABS sense of the term (a place where a respondent resides for at least 6 months of the year); and the number of places regarded as being usual residences by the respondent.<sup>19</sup> While some of these are standard items in most questionnaires, others take into account important characteristics of highly mobile household members. It should always be remembered that there may be a recall problem for any retrospective questions on mobility.<sup>20</sup>

As indicated above, mobility is an important factor in household formation. The social fluidity of Indigenous households reveals a pattern of core and more residentially stable members, with a peripheral number of transient members, giving rise to dynamic developmental cycles of formation and dissolution. These cycles and characteristics will pose particular problems for securing repeatable and relevant data sets (see Daly and Smith 1996; Smith 2000).

Adult mortality is another important factor driving family formation (and dissolution) among Indigenous households: many children are forced to live with other relatives or friends (Gray 1987, 1990). The unresolved issue is how to secure an operational definition of an Indigenous household which can be easily measured by questionnaires, but which also bears some resemblance to the realities of Indigenous family and community life.

The experience of the CAEPR survey confirms earlier research (Altman et al. 1997), suggesting that a longitudinal survey which includes Indigenous households will need to use an expanded operational definition of 'family' and 'household'. A multi-dimensional set of definitions is recommended, operating at the following combination of levels:

- all relationships within a household should be coded on the basis of kinship, to all families, not just to the primary family, with an emphasis on maintaining the functional reality of extended family formations;
- a household should be minimally defined as group of two or more related or a household unrelated people who usually reside in the same dwelling, who regard themselves as a household, and who make common provisions for food and other essentials for living;
- additionally, a measure of the core household should include all those people (including all visitors) who stayed at the same location the previous night; and
- a measure of short-term flows should include all those people (including all visitors) who stayed at the same location for one night or more over the previous fortnight (or possibly 4 weeks).

These combined definitions should be employed in conjunction with the following guidelines:

- data should be obtained sufficient to identify the core and peripheral household residents over a four-week period;

- all visitors should be coded as such, but also classified as usual resident members of a household and their income included as household income for the period in which they are resident;
- a genealogy should be taken of all household members at the time of interview in order to identify precisely the classificatory and consanguineal relationships between all members.

These guidelines will allow more accurate measures of short-term maximum and minimum household structures for mobile groups, and a more realistic assessment of household income levels.

The key social and economic linkages operating between extended family members across physical dwellings constitute a fourth dimension to the operational definitions of household that has been highlighted by the CAEPR survey and other research (see Daly and Smith 1996; Finlayson 1991; Smith 1992). However, it is difficult to investigate these linkages other than by intensive fieldwork. The economic influence of these formations on household income levels could, however, be adduced by asking a set of relevant questions about common or regular forms of cross-household support. For example, the CAEPR survey permits an analysis of the extent of members' reliance upon other households for the payment of domestic accounts and access to resources and additional cash; the extent of extended family child-care; and the range of kin relations relied upon for such recurrent support.

### ***Cost-effective strategies for surveying Indigenous Australians***

Once suitable research questions are decided upon, longitudinal survey design needs to collect quality data in a cost-effective manner. The main impediments to achieving an adequate data quality are low response rates and culturally inappropriate data collection techniques. While these problems are obviously linked, we will examine each in turn.

The poor response rates in DEWRSB data occurred despite Roy Morgan's concerted effort to use Indigenous interviewers. The use of Indigenous interviewers does not, in itself, guarantee that response rates will be acceptable. While the use of such interviewers enhances our confidence in the quality and cultural relevance of the data, more resources may need to be devoted to following up non-respondents and filling in gaps in recorded information.

It cannot be taken for granted that Indigenous interviewers automatically provide quality data. One way around the variable quality of written reports is to enhance the training and supervision of Indigenous interviewers (see the 'Indigenous Enumeration Strategy' in Alphenaar et al. 1999). This was demonstrated in the mid 1970s, when a small number of community case studies were carried out with rural and urban Indigenous Australians as part of the Henderson Poverty Inquiry (Henderson 1975). Diane Smith, one of the authors of this paper, was one of the project coordinators for the Brisbane case study (Brown et al. 1974), which was a questionnaire-based, direct interview survey carried out over a period of one year. The differing approaches taken in that early survey and the recent

CAEPR survey suggest some options for the implementation of cost-effective strategies for HILDA.

The Poverty Inquiry Brisbane case study (Brown et al. 1974) and final report (Henderson 1975: 260) both noted the difficulty in securing the trust of Indigenous respondents, and their reluctance to participate and reveal their incomes to non-Indigenous interviewers. To obtain a reasonable response rate, and confidently use data on income, employment and housing, Brown et al. developed a comprehensive program for the employment, training and supervision of Indigenous interviewers. Advertisements were placed in local newspapers for local Indigenous people to be employed as interviewers, and informal networks were used to promote the availability of employment with the project.

All interviews for the Brisbane study were conducted by two-person teams comprising one Indigenous and one non-Indigenous person. Project researchers ran intensive training programs for teams covering interviewing techniques, survey processes, and research objectives. Interview teams participated in training interviews, conducted a preliminary information phase to make contact with Indigenous community groups, and participated in an intensive pilot phase to test both the questionnaire and their interviewing skills. The teams functioned by having the Indigenous team member facilitate the initial contact with the household and explain the nature of the survey. Then, on a rotation basis, both team members administered the questionnaire. On all occasions, two interviewers were present.

During the pilot phase, interview teams were debriefed after the completion of each questionnaire. Difficulties experienced with interviewing techniques, gaps in question response, and the cultural relevance of format and wording, were identified and discussed with project researchers before teams administered the next pilot questionnaire to another household. Teams were also asked to follow up every piloted questionnaire where there were gaps in the information.

This supervision and debriefing process continued throughout the main interview phase. The advantages of this intensive monitoring were a reasonably high rate of response and coverage of data (including income) in each questionnaire. The use of teams encouraged a supportive working relationship between paired interviewers who stayed together during the entire survey period. This may have assisted the retention of both Indigenous and non-Indigenous interviewers. The disadvantages were that the process required a major ongoing commitment of time and human resources and was therefore costly.

The CAEPR survey project in 1999 took a different approach. In Kuranda and Yuendumu, project researchers worked closely with Indigenous research facilitators from each community, who introduced the project interviewers to potential respondents, helped explain the nature of the research, and acted as translators during the interview. They did not, however, administer the questionnaire itself; this was consistently done by project researchers. This strategy had the advantage of enabling a more culturally suitable approach to be taken in securing people's participation and understanding of questions during

the interview, but reduced the time and resources needed to train and supervise a larger number of Indigenous people as interviewers. It worked extremely well within the budgetary and time constraints of the project, and was relatively more cost-effective. The approach did not appear to diminish response rates.

Since mobility appears to make it difficult to keep the same, or an adequate number of, Indigenous interviewers over successive waves, one might expect that attrition rates among Indigenous research facilitators might also be high. There are several reasons why this was not, in fact, the case. First, the facilitators' responsibilities entailed relating to other Indigenous people from their community rather than asking personal questions of them. These duties are less onerous than those of interviewers, who are responsible for both administering personal survey questions. Furthermore, the time required of facilitators was much shorter than that involved in the administration of the full questionnaire, and interviews were arranged to tie in with their availability each day. It appears then that employing Indigenous people to facilitate the location and participation of others in a survey may be more cost-effective and as productive of response rates as employing them to actually conduct the interviews.

Another lesson from the surveys described here is that telephone interviews cannot be relied upon to guarantee a suitable response rate from Indigenous persons in longitudinal surveys.<sup>21</sup> The reliance on telephone interviews to follow people who are poor and who move is a particularly flawed strategy for approaching members of the Indigenous population, since not every Indigenous household has a phone. This observation is given weight by the experience of the PSID in the USA where a representative sample of Latinos (a relatively mobile population) was only achieved after additional interviews were conducted in person (Hill 1992: 13).

The uneven access to telecommunications across Australia is an ongoing political issue and there is significant anecdotal evidence that standard telephone services and payphones are not reasonably accessible to all Australians wherever they live. The relative concentration of Indigenous population outside the major metropolitan areas means that access to telephones may be particularly problematic for many. For instance, the interviews conducted by CAEPR staff in Kuranda, a community less than 60 kilometres from a major metropolitan area (Cairns), revealed that very few households had access to a telephone in their own home (Finlayson et al. 2000). Access to telephones in Yuendumu was largely through community or Indigenous organisations (see Musharbash 2000). Even where a telephone was readily accessible there may have been restrictions on its use, such as embargos on outgoing calls. The use of the telephone as an instrument to track Indigenous respondents is clearly ineffectual.

One technique for securing a good response rate is through the use of supplementary surveys. However, the DEWRSB survey practice showed this to be potentially problematic. The general complexity of sample design, and of the supplementary sample in particular, makes it difficult to utilise all of the DEWRSB data. For example, the supplementary sample was designed to augment

sample size following the poor response rates to the first wave. The data generation processes for the supplementary and main samples probably differed significantly, given the geographically restricted nature of the supplementary and the fact the timing of the first interview was very different to that in the main sample. It is obviously preferable to get the survey design right before proceeding with data collection. This entails, *inter alia*, taking into account the mobility of potential respondents and hence the likely non-response and attrition rates.

A final lesson arising from the DEWRSB survey is that the effect of mobility may be lessened if the lead-up to first wave is kept to a bare minimum. For example, if a survey is based on a sub-sample from administrative data, then the survey design should minimise the time between sample extraction and the completion of questionnaires to maximise response rates and minimise attrition rates.

Large-scale longitudinal surveys are a relatively recent phenomenon in Australia and the recent spate of social surveys with a time dimension is largely driven by relatively new technology, the Computer Aided Telephone Interviewing (CATI). While such surveys are cost effective because they combine interviewing and data entry tasks, the limitations of telephone interviews in surveys of Indigenous Australians means that it is probably inappropriate to rely solely, or even largely, on CATI methodology. At the very least, telephone techniques such as CATI should only be relied upon after a relationship has been established with a respondent through face-to-face interviews. Ideally, if cost constraints are not at issue, face-to-face interviews should be used in every wave.

The most cost-effective strategy for collecting longitudinal data depends upon the way it is collected. It is obviously more difficult, and hence more expensive, to collect data from all residents of a household than to use one resident as a reference person. For example, as household structure changes and people move to new households, the data collection agency will need to visit exponentially more houses to track all the original residents. While tracking a particular reference person reduces costs, it probably limits the scope of analysis of household formation (and dissolution). Also, the results may be sensitive to the process used for choosing the reference person. However, the basic issues raised in this paper apply, whether or not a reference person methodology is adopted.

### ***Augmenting the Indigenous sample in future longitudinal surveys***

Since the Indigenous population is a very small proportion of the total Australian population it will be necessary to over-sample Indigenous households in order to achieve a large enough sample size to allow valid statistical analysis of family formation, household income and labour dynamics. Including an Indigenous identifier may permit analysts to state the obvious—for example, that Indigenous people are poor and disadvantaged—but it does little to tease out the distinct processes which lead to these seemingly intractable outcomes.

There are some precedents for over-sampling the Indigenous population. For example, augmenting the recent National Housing Survey with an additional 600 or so Indigenous households cost the ABS approximately \$200,000. One of the

reasons for this cost was the need to ensure the over sample was correctly geographically stratified with respect to the most recent census. Therefore, in a longitudinal context, the cost per wave may fall once the sample has been selected.

The mobility-related issues documented above are likely to increase the costs of any longitudinal survey, especially those with an adequate sub-sample of Indigenous respondents. This paper has detailed several strategies for minimising the cost of such a survey while guaranteeing the quality of the data. While these strategies are particularly relevant when sampling Indigenous people, they have wider ramifications for all mobile populations who might be included in a longitudinal survey such as HILDA.

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## Notes

1. There are only a handful of longitudinal data sets in Australia. The Australian Longitudinal Survey, the Australian Youth Survey, the Longitudinal Survey of Immigrants to Australia and the Survey of Employment and Unemployment Patterns (SEUP) are the main data collections. While all these surveys include an Indigenous identifier, the Indigenous sub-sample is too small to conduct any substantial analysis of Indigenous labour market dynamics.
2. NATSIS methodology recognised that survey data were best collected by Indigenous people (ABS 1996). Consequently, Indigenous people were recruited to do the interviews wherever possible. The recent Indigenous Employment Strategy argued that only Indigenous interviewers had a chance to overcome distrust of government surveys.
3. CAEPR researchers involved in the research project during 1999–2000 were Diane Smith (anthropologist), Anne Daly (economist), Julie Finlayson (anthropologist), Yasmine Musharbash (anthropologist) and Tony Auld (statistical research officer).
4. See Taylor and Bell 1996b, 1999, and Altman et al. 1997 for a review of the implications of this fact for survey sampling.
5. Julie Finlayson has a long-standing research involvement with the Kuranda community dating back to the 1980s, and Yasmine Musharbash has developed a similar involvement with households in Yuendumu during the course of postgraduate field research.
6. As Hoinville, Jowell and Associates (1978: 17) note, because of the difficulties in analysing and absorbing qualitative information, it is rare for more than 50 in-depth interviews or 12 group discussions to be undertaken in a survey that obtains both types of data.
7. Between the start of the project and the second wave, the Department of Employment, Education and Training (DEET) was restructured as the Department of Employment, Education, Training and Youth Affairs (DEETYA). Following the election of the Howard Government in 1996, the responsibility for the survey was

handed over to DEWRSB. In this report, the responsible Department is referred to as DEWRSB throughout.

8. The total cost of collection was around \$800,000 for the three waves.
9. For further details of the survey methodology, readers are referred to Roy Morgan (1998) and Hunter et al. (2000).
10. Note that DEWRSB did not check the suitability of each individual interviewer. Roy Morgan was only required to get approval from the Department to proceed with non-Indigenous interviewers.
11. Unfortunately, this information on unemployment duration has only been provided at an aggregate level for a sub-sample of those extracted from the CES register (see Table 5). It was only possible to get information on uncompleted unemployment duration for job seekers included in the Jobssystem allowance records. This should provide a reasonable indication of unemployment duration given that Daly and Hunter (1999) estimate that about 94 per cent of Indigenous unemployed receive some government benefits and therefore should have an allowance record. By focusing on this sub-sample, albeit a rather substantial portion of job seekers registered at the CES, it is only possible to get a rough guide to the biases resulting from right censoring.

The National Aboriginal and Torres Strait Islander Survey (NATSIS), collected in the middle of 1994, provides the only benchmark available for proportion of long-term unemployed in the Indigenous population. About one-half of Indigenous unemployed have been out of work for at least 12 months from unpublished NATSIS cross-tabulations. In comparison, 80.6 per cent of job seekers with a Jobssystem Allowance records were long-term unemployed at the extraction date (derived from Table 5). If all the people without Jobssystem records in the initial sample were actually short-term unemployed, the proportion of long-term unemployed at the extraction date would fall to 62.2 per cent. Note that the operational definition used in Jobssystem records permit 'allowable breaks', or short periods of not looking for work as part of the current unemployment spell, which may increase the estimated duration of unemployment relative to those which use the standard ABS definitions. While both these estimates are much larger than the unemployment duration estimated using NATSIS data, it is not possible to discount the possibility that this is due to the bias inherent in the 'allowable breaks' methodology.

12. A more subtle issue arises from the need to resample youths and males in order to secure the correct proportions. It is probable that the persons found are unrepresentative in terms of their mobility and characteristics associated with mobility. That is, if Roy Morgan were more likely to find residentially stable young males each time they re-sampled, then the final data collected would not be representative of the underlying population being sampled.
13. As indicated above, the point of contact information (including residential address, post office boxes, or alternative contact information) was collected in the six months prior to January 1996 and the survey was collected between March and June 1996.

Therefore this information was between two and 11 months old at the time of the survey.

14. The process of designing a longitudinal survey questionnaire is extremely complex. One principle that should be followed is that a reasonably consistent set of questions should be asked at each wave. This was clearly not done for a wide range of variables in the DEWRSB survey. For example, the income question is asked in a different way in each wave. The wave 1 questionnaire asks about gross income from all sources but wave 2 and 3 ask separately about wage and income from government benefits, pensions or allowances. To complicate matters further, the wave 2 question asks about gross wages before tax while wave 3 enquires about after tax pay.

There is a trade-off in longitudinal studies between asking the same question in a consistent fashion and getting new information. Asking the same question helps exploit the longitudinal nature of the data so that an analyst can isolate the effects of changes in behaviour over time. However, if the initial question asked in the first waves were wrong or the question of interest changes, then subsequent questionnaire can be updated to reflect such changes. There is clearly a need for a rigorous pilot survey that involves all the relevant stakeholders. Given the nascent development of longitudinal analysis in Australia it may be necessary to consider using experts from the international academic community in the evaluation of a pilot survey.

The evaluation of a particular question also depends on the reason why it was asked. For example, if one is trying to identify the role of wages in changes to labour market behaviour over time, then one needs specific information on employment income. Even then it is debateable whether one needs before or after tax income. After tax income indicates disposable income available but tends to mix up family circumstance with the wage that can be commanded in employment. Therefore the research question of interest to policy makers needs to be clearly enunciated before a survey is designed. Furthermore, it is important that those commissioning the data collaborate with the academic sector to ensure that the data to be collected can answer the questions set using the latest techniques available. The historical lack of expertise in Australia on longitudinal techniques is a substantial factor behind the inadequate design of the respective questionnaires.

15. The censoring of the data referred to here includes left censoring as well as right censoring. Left censoring is where it is not possible to accurately gauge when a particular status commenced (for example, when a period of unemployment started).
16. The use of a weighting procedure would imply that the survey respondents are representative of the population. Unfortunately, one cannot be certain that this assumption is valid. Therefore, any analysis of the data will show only patterns of responses of those who answered the survey questionnaires and only provides a rough indication of Indigenous job seekers who were registered with the CES. Consequently, it is inappropriate to use the weights provided to make inferences about a wider population of job seekers.



17. Despite the additional costs inherent in conducting a longitudinal survey, the cost of data collection for the DEWRSB was less than 20 per cent of that incurred in conducting the NATSIS survey. However, the scope and coverage of the NATSIS survey is considerably broader.
18. The complexity of mobility is illustrated in Alphenaar et al.'s (1999) discussion about nominated discrete community enumeration in recent censuses and the fact that it does not actually occur on Census Day. The importance of frequent circular mobility in the daily, periodic, and seasonal round of activities associated with Indigenous social and economic life in remote Australia needs to be taken into account when undertaking enumeration of Indigenous populations (Martin and Taylor 1996). Some cultural, climatic, sporting, or social events lead large numbers of Indigenous peoples to travel to other communities, or to urban areas within their own, or other States. These events can result in communities almost closing down for weeks at a time. Where such movements occur, a flexible approach to enumeration is adopted, subject to the requirement to ensure that people were counted once and once only. In these instances, actual census enumeration has always taken place over a period of weeks although an effort is made to maintain the 'as enumerated' concept (i.e., counting people where they were on Census Night). Unfortunately, the longer enumeration is delayed past Census Day, the larger will be the inaccuracy introduced because of 'recall bias'.
19. Bell (1996) has employed data from the 1992 ABS Survey of Families to develop new measures of chronic mobility for the Australian population. These he derived from migration history data collected by the survey, including the year that each person, aged 15 years and over, started living at their 'current address' and the number of times they had moved house over the five-year period prior to the survey.
20. The NATSIS Family and Culture Technical Reference Group Meeting on 7 September 1993 found that there was a problem with recall with all the mobility questions in NATSIS.
21. Telephone interviews were only used as a final option for DEWRSB survey respondents in remote areas to chase up a very small number who had moved a considerable distance from the survey regions.

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