

Longitudinal Surveys of Australian Youth

Research Report 50

Movement of Non-metropolitan Youth towards the Cities

Kylie Hillman
Sheldon Rothman

January 2007

This report forms part of the Longitudinal Surveys of Australian Youth,
a research program jointly managed by ACER and the
Australian Government Department of Education, Science and Training (DEST).

The views expressed in this report are those of the authors and not necessarily of the
Department of Education, Science and Training.

Published 2007 by
The Australian Council for Educational Research Ltd
19 Prospect Hill Road, Camberwell, Victoria, 3124, Australia.

Copyright © 2007 Australian Council for Educational Research

ISSN 1440-3455

ISBN 978 0 86431 502 1

Contents

Tables	iv
Figures.....	iv
EXECUTIVE SUMMARY	v
1. INTRODUCTION.....	1
Previous research.....	2
The contribution of the current report.....	4
2. DATA, DEFINITIONS AND METHODS	6
Definition of ‘non-metropolitan’	6
Variables.....	7
Methodology.....	10
3. POST-SCHOOL ACTIVITIES AND PATHWAYS OF NON-METROPOLITAN YOUTH	11
Movement between non-metropolitan and metropolitan areas.....	11
Annual activities of the non-metropolitan sample	13
Activities before and after moves between non-metropolitan and metropolitan areas.....	16
Activities in 2004.....	20
Summary.....	21
4. INFLUENCES ON THE GEOGRAPHIC MOBILITY OF NON-METROPOLITAN YOUTH	22
Influences on moving to the city between 1997 and 2004.....	22
Influences on returning to non-metropolitan areas	26
Summary.....	27
5. OUTCOMES FOR GEOGRAPHIC GROUPS: STAYERS, LEAVERS AND RETURNERS	28
Social and emotional outcomes at age 23.....	29
Financial and career outcomes at age 23	30
Summary.....	34
6. DISCUSSION AND CONCLUSIONS	35
REFERENCES.....	38
APPENDIX 1: DATA.....	40
APPENDIX 2: METHODOLOGY	41
APPENDIX 3: SUPPLEMENTARY TABLES.....	44

Tables

Table 1	Australian Bureau of Statistics ASGC (Australian Standard Geographic Classification) Classification of Remoteness	6
Table 2	Background characteristics of the non-metropolitan sample.....	9
Table 3	Annual movement by the non-metropolitan sample between non-metropolitan and metropolitan areas, by gender, 1997–2004.....	12
Table 4	Main activity of the non-metropolitan sample, 1997–2004, by gender.....	14
Table 5	Main activity of the non-metropolitan sample, by gender and geographic area, 1998–2004....	15
Table 6	Activity and location in 1999 of the non-metropolitan sample who were living in non-metropolitan areas in 1998, by 1998 activity	17
Table 7	Activity and location in 2000 of the non-metropolitan sample who were living in non-metropolitan areas in 1999, by 1999 activity	17
Table 8	Activity and location in 2003 of the non-metropolitan sample, by location and activity in 2002.....	19
Table 9	Main activity of the non-metropolitan sample in 2004, by location.....	20
Table 10	Variables included in Cox regression analysis of leaving a non-metropolitan location.....	23
Table 11	Geographic groups by gender and 2004 location, column percentages	28
Table 12	Social outcomes for geographic groups in 2004, column percentages.....	29
Table 13	General and career satisfaction scores for geographic groups in 2004, means and standard errors	30
Table 14	Occupational outcomes for geographic groups in 2004, column percentages.....	31
Table 15	Average gross weekly income in 2004, by geographic and occupational groups	32
Table 16	Average work hours per week in 2004, by geographic and occupational groups	32
Table 17	Rates of home ownership by geographic groups in 2004, column percentages	33

Tables in Appendices

Table A 1	Cox regression results: Influences of background characteristics, school-related variable, post-school plans and current activity variables on the likelihood of leaving a non-metropolitan area, Males	44
Table A 2	Cox regression results: Influences of background characteristics, school-related variable, post-school plans and current activity variables on the likelihood of leaving a non-metropolitan area, Females	45
Table A 3	Cox regression results: Influences of background characteristics, school-related variable, post-school plans and current activity variables on the likelihood of returning to a non-metropolitan area, Males	46
Table A 4	Cox regression results: Influences of background characteristics, school-related variable, post-school plans and current activity variables on the likelihood of returning to a non-metropolitan area, Females	46

Figures

Figure 1	Annual movement of the non-metropolitan sample between non-metropolitan and metropolitan areas, 1997–2004	11
----------	---	----

EXECUTIVE SUMMARY

This report focuses on a group of young people who were living in non-metropolitan areas in their final years of secondary school, and the pathways they followed in the years following secondary school, including their geographic mobility and participation in education, training and employment. Rural communities have long felt concern about the rate at which young people leave for urban areas, many never to return. This report analyses the issues involved by mapping the experiences of the same group of young people over an extended period of time.

The data used in this report are drawn from the Longitudinal Surveys of Australian Youth (LSAY), which studies the progress of cohorts of young Australians as they make the transitions from secondary school to work and further education and training, beginning in Year 9.

The sample for this report was selected based on their home location at the time of the survey in 1997, when the majority of the cohort was in Year 11. At that time, 5112 young people were living in areas considered to be non-metropolitan, that is, outside the major cities of Australia and their surrounding suburbs (Melbourne, Sydney, Adelaide, Hobart, Perth, Canberra and Brisbane). The report follows their experiences until the end of 2004, at which point their modal age was 23 years. It is the first Australian study to use a national longitudinal data set to study young people's geographic mobility.

Major findings of the investigations are summarised below.

What pathways do non-metropolitan youth follow in the years after school?

- Among young people in the 1995 Year 9 LSAY cohort who had been living in non-metropolitan areas in 1997 (when 16 years of age), 26 per cent were living in a metropolitan area in 2004, with 36 per cent having experienced at least one year in a major city during 1998–2004.
- For many of the young people who did leave their non-metropolitan areas, that move was associated with participation in post-compulsory education, and more frequently university study.
- Young people in the non-metropolitan sample moved to the major cities to study at university more frequently than to take up an apprenticeship or traineeship, or to undertake other study.
- Although there was 'return migration', the level was not nearly equal to the number of young people who had moved to the cities. Approximately 30 per cent of young people who had relocated from a non-metropolitan area to a major city in the years following secondary school went on to experience a further move back to a non-metropolitan area within the observed time period.

Which young people are most likely to leave non-metropolitan areas in the years after school? Which young people are most likely to stay?

- For young men, current activity had the strongest effect on the likelihood of leaving a non-metropolitan area— full-time study at university and TAFE increased the likelihood of leaving while full-time employment decreased the likelihood of leaving. Young men who had a parent with tertiary qualifications were also more likely to move from a non-metropolitan area to a city.
- Young women who were involved in full-time study at university were more likely to leave or have left a non-metropolitan area, while those who were working full-time were less likely to leave.

- For both young men and young women, the less access the location they lived in had to a number of services (including educational facilities), the more likely young people were to move.

Which young people are more likely to move back to a non-metropolitan area after spending some time in a major city?

- For young men, being involved in full-time employment in the last year they were located in a metropolitan area was the only significant influence on whether they were likely to return to a non-metropolitan area or not. Those who were working full-time were less likely to return to a non-metropolitan area.
- Young women who found full-time employment while in the cities were significantly less likely to return to a non-metropolitan area than those who were not working full-time.
- Young women who held tertiary qualifications were less likely to return to non-metropolitan areas than were young women who did not hold such qualifications.

What differences are there in social and financial outcomes for stayers, leavers and returners?

- Compared with young people who remained in non-metropolitan areas (Stayers) and those who moved away but then returned (Returners), fewer Leavers were still living with their parents, and fewer had become parents during the surveyed period. There were no differences in rates of marriage or aspects of life satisfaction across the groups of Stayers, Returners and Leavers.
- Levels of employment were similar across the three groups, although a greater proportion of those in the Stayer group were employed in Trades occupations, and a smaller proportion of Leavers were in similar occupations. There were no differences in the average weekly income and hours worked reported by Stayers, Returners and Leavers once occupations were accounted for.
- Rates of home ownership by age 23 were lower amongst Leavers compared with Stayers and Returners, which may largely reflect more affordable housing in non-metropolitan areas.

Conclusions

Overall, the influence of the variables investigated here on the likelihood that young people would leave non-metropolitan areas in favour of the major cities was not large. This is to be expected, as the decision to leave one's local area is presumably a large step, and influenced by a broader range of factors than was possible to analyse in the current study. While relatively limited possibilities for further education and subsequent employment in many non-metropolitan locations may be a factor in leaving home, other motivations are also at play – including the opportunity for young people to assert their independence, meet new people and have experiences that are not available in their local communities. Nevertheless, the pursuit of further educational opportunities, particularly attending a university, was a significant influence on the likelihood that a young person would relocate from a non-metropolitan area to a major city during late adolescence and early adulthood. The results suggest that the decision to leave non-metropolitan areas, particularly in pursuit of further education, is not a spontaneous one; rather, it is developed over a period of time and within the context of other decisions about one's future, including educational and occupational aspirations and expectations.

Movement of Non-metropolitan Youth towards the Cities

1. INTRODUCTION

Around Australia today, there is concern in rural and regional communities about the rate at which their young people are leaving their communities. The majority of young people who move away from their original non-metropolitan location move into a metropolitan area. Almost 60% of young people aged 15-24 years who had left a country area between the 1996 and 2001 censuses had moved into a capital city, with the remainder moving to larger population centres (Australian Bureau of Statistics, 2003a). The phenomenon of migration to urban centres is not a recent one; in fact, the movement of young people out of rural areas and into urban areas is a long-standing demographic phenomenon in Australia (Hugo, 1971; cited in Hugo, 2000), as well as other countries world-wide, including Scotland (Stockdale, 2002), Sweden (Nilsson, 2003), Ireland (Ni Laoire, 2000), Canada (Dupuy, Mayer & Morissette, 2000) and the United States of America (Johnson, Elder & Stern, 2005). The greater range of employment, education and training opportunities in urban areas, combined with the declining labour force opportunities in rural areas driven by technological change and increased mechanisation, among other factors, creates a powerful attraction towards the cities for young people seeking to establish themselves.

There is often a sense that rural communities have little to offer young people in terms of post-secondary education and employment opportunities, and that many will thus leave to pursue opportunities elsewhere, perhaps never to return. Even those areas outside major cities that are growing in size and population 'cannot offer the post-school education and variety of job opportunities that are available in the capital cities' (Hugo, 2000), resulting in the loss of young people aged in their late teens and early twenties.

Non-metropolitan: a definition

A range of terms are used in the literature to refer to areas, towns and other localities that are outside the boundaries of capital cities and major urban centres – 'rural', 'regional', 'provincial' are but a few. Throughout this report, the term 'non-metropolitan' is used to refer to all areas in Australia that are not considered to be 'major cities' (that is, outside Melbourne, Sydney, Adelaide, Hobart, Perth, Canberra and Brisbane and their surrounding suburbs) and may thus include areas that might elsewhere be described as rural, regional and/or provincial. Further details on the assignment of locations to metropolitan and non-metropolitan categories are provided in Chapter 2.

This study investigates the pathways young Australians from non-metropolitan areas take in the years following secondary school. While there is much interest in retaining young people in non-metropolitan areas, there is little longitudinal research available that focuses on this group and their patterns of migration. Cross-sectional data, as collected in the national census, and anecdotal evidence may tell us that young people are leaving rural areas to pursue employment and education opportunities in urban centres, but cannot tell us much beyond that. What percentage of a cohort of young people move out of non-metropolitan areas and to the major cities? What percentage remains? What are the differences between leavers and stayers? What do they do - study, work, look for work? What percentage of leavers return to non-metropolitan areas within a period of time? What differentiates returners from those who leave 'for good'? Finding answers to such questions is important, as they can help policy makers and rural community leaders establish some basic facts about the migration patterns of the non-metropolitan youth population.

Gathering this information is an important step in understanding what interventions, if any, are necessary to help rural communities stop the decline of their youth population and to promote community and economic growth. Although the research discussed below has often considered geographic background as a potential influence on young people's post-school activities, the focus has not been on their geographic mobility or on how this relates to their educational and labour market outcomes.

Previous research

Participation in post-compulsory education by non-metropolitan youth

Participation in some form of further education or training is an important part of the post-school pathways of many young Australians. Research investigating geographical differences in participation in education has reported a number of gaps between young people in metropolitan and non-metropolitan locations. Young people from non-metropolitan locations are more likely than their metropolitan counterparts to leave secondary school early, often in order to take up employment (Australian Bureau of Statistics, 2003b; James, Wyn, Baldwin, Hepworth, McInnis & Stephanou, 1999; Jones, 2002). Research using LSAY data from the 1995 Year 9 cohort has also found that fewer young people from provincial and remote areas of Australia than young people from metropolitan areas complete Year 12 (Jones, 2002).

It has been suggested that lower senior school retention rates in rural schools and the perceived lack of relevance and decreased value placed on post-secondary education and training by young people from rural backgrounds have combined to produce a rate of participation in further study that is much lower among rural youth than urban youth (Cunningham, Choate, Abbott-Chapman, & Hughes, 1992; James et al., 1999; James, Baldwin, Coates, Krause, K & McInnis, 2004). Le and Miller (2005) have reported that the differences in the university participation rates of students in rural areas and capital cities from the LSAY 1995 Year 9 cohort are largely the result of differences in schooling decisions around the Year 10 level, in which young people from rural areas had a much lower probability of continuing beyond Year 10. Those who chose to participate in further study were more likely to elect to study at a TAFE college rather than at a university (James et al., 1999). The importance of differences in the educational aspirations and expectations of young people from different regions of Australia in explaining (at least in part) differences in eventual participation has also been highlighted by other researchers (Alloway, Gilbert, Gilbert, & Muspratt, 2001).

Despite the development of many regional universities and further development of distance and online provision, the proportion of young people from rural areas who are participating in further study at universities is much less than the proportion they make up of the population—estimates from the 1990s reported by James et al (1999) put the proportion of university students (those who were enrolled, non-overseas students) who identified as having a rural or isolated background at a little over 19%, about three-quarters the reference population for this age group (based on the 1991 census) of around 24%.¹

One area of education in which young people from non-metropolitan areas are participating at equal or higher rates than their metropolitan counterparts is vocational education and training (VET), particularly in New Apprenticeships. Ainley and Corrigan (2005) reported that participation in New Apprenticeships (combining apprenticeships and traineeships) among the LSAY 1995 Year 9 cohort was higher among non-metropolitan youth than among metropolitan youth (26% compared to 18%). Multivariate analyses of the data indicated that, although

¹ Jones (2002) argues that once other factors such as earlier school achievement and socio-economic status are controlled for, geographic differences in entry to university and participation in other forms of further study disappear.

students from rural and remote locations were twice as likely to be apprentices as their peers from metropolitan locations (there was a smaller effect for those from provincial locations), the differences disappeared once characteristics such as earlier school achievement (reading and numeracy), vocational interests and participation in VET in schools programs were taken into account. In contrast, young people from provincial locations were more likely to participate in traineeships than young people from metropolitan locations, other things equal.

Participation in the labour market by non-metropolitan youth

One may expect that the generally lower participation rates of non-metropolitan youth in post-school education and training would be compensated for by higher participation in the labour force: if they are not studying, they are more likely to be working or looking for work. Historically, unemployment rates have been higher in non-metropolitan areas than in the cities. In 2001 for example, the average rate of unemployment in major cities was 7.1 per cent. While higher overall outside the major cities (8.0%), the rate varied and generally eased with increasing remoteness: the unemployment rate was 8.5 per cent in Inner Regional areas, 7.9 per cent in Outer Regional areas, and 4.5% in Very Remote areas (Australian Bureau of Statistics, 2003c). In each of these remoteness areas, the unemployment rate among 15-24 year olds was higher than it was among other age groups (Australian Bureau of Statistics, 2003c).

Long-term unemployment, in which people have been out of work for 12 or more months, is also a feature of some regional labour markets. Six of the ten areas with the highest rates of long-term unemployment in 2001 were non-metropolitan areas, including the Loddon-Mallee region of Victoria and Mersey-Lyell in Tasmania (Australian Bureau of Statistics, 2003c). While long-term unemployment tends to be higher in older age groups than in youth (those aged 15-24 years), living in an environment of long-term unemployment when they are making decisions about their education and employment options is likely to have an influence on the pathways taken by these young people (Australian Bureau of Statistics, 2000).

Migration of rural youth: influences on leaving non-metropolitan areas

There is a general concern around Australia that young people from non-metropolitan areas must leave home and move to the capital cities to pursue further education, employment and other opportunities. One study of young people's perceptions of opportunities in rural communities found that between 70 and 95 per cent of young people interviewed planned to leave their small towns, with more females than males intending to move elsewhere (Alston & Kent, 2001).

Despite the presence of rural universities and the general widespread availability of VET programs and public facilities in rural centres, many young people are leaving non-metropolitan areas in pursuit of further education. A recent publication from the Department of Education, Science and Training has found that around 40 per cent of country-based students (those whose permanent home address was in a non-metropolitan area) had moved to attend university, compared to only 4 per cent of metropolitan or city-based students (Blakers, Bill, Maclachlan & Karmel, 2003).² Much of the movement of non-metropolitan students was not necessarily related to lack of access to a tertiary campus in their local area, but to subject and course choice. In addition to the economic and career benefits of higher education, rural youth interviewed in a study by James et al (1999) saw their pursuit of university study in an urban area as an opportunity to grow-up, assert their independence, meet new and exciting people and have experiences that are simply not available in their local communities.

² Not all of the movement was towards metropolitan areas, although the destination institutions of non-metropolitan students in the top two deciles of the University Admissions Index were all located in major cities.

Young people do not leave rural areas only to further their education. The depressed economic circumstances of many rural areas have forced many young people to leave rural areas in search of employment. One Canadian study of the migration patterns of rural youth found that those most likely to leave rural areas were relatively young (between 15 and 25 years of age, compared to those 25 to 29 years) and to have had limited success in the local labour market, having been employed only part or none of the previous year (Dupuy, Mayer & Morissette, 2000).

Despite the obvious pulls of education and career aspirations, other research suggests that there is more going on behind the desertion of rural areas by young people, and that economic factors are only one influence on migration from rural areas. Another Canadian study found that even if they could hold their desired job in their community, four out of ten young people would still be willing to leave for an urban area (Roy, 1997; cited in Dupuy et al., 2000). Other factors, such as a desire for different life experiences or to fulfil one's aspirations, are also at play in the move of many young people away from regional and remote areas (James et al., 1999).

Other research has indicated that the likelihood of a young person leaving his or her non-metropolitan community is not stable over time. In their study of Canadian data on youth migration from rural areas, (Dupuy et al., 2000) found that the chances of leaving a rural community decrease over time, in that the chances of leaving between the fifth and tenth year after leaving school, after having remained until the fifth year, are much smaller than the chances of leaving initially. In other words, for those who remain in their rural community, presumably establishing networks, finding employment and maybe starting a family, the chances of leaving decrease dramatically as the years go by.

At the same time, international research has indicated that there may be a gradual return of some 'leavers' to their home towns or other non-metropolitan areas over the years post-leaving. In one Swedish study, as many as 30 per cent of young people who had moved from non-metropolitan areas to the cities moved out of those cities again, and the majority of them returned to their 'home' area (Nilsson, 2003). Many studies have suggested that young people who leave non-metropolitan areas do so with a firm intention to return, or at least to move back to a similar area, often citing a desire to provide their children with the benefits of a rural childhood that they experienced (Stockdale, 2002; Waara, 1996; cited in Nilsson, 2003). It is yet to be determined whether a similar pattern of return migration exists for young people from non-metropolitan areas in Australia.

The contribution of the current report

The *Longitudinal Surveys of Australian Youth* (LSAY) is a project that follows cohorts of young Australians as they make a number of key transitions—from secondary school to further education and training, and to the labour force. Participants are first contacted when they are in secondary school and are then interviewed annually about their educational and work activities, their attitudes, living arrangements and satisfactions with their lives. The LSAY data are able to make unique contributions to the investigation of the issues identified in this project. The nationally representative structure of the data and the maintenance of that representation through sampling and attrition weighting of respondents in successive annual waves of the data enable inferences to be drawn about the cohort population. Because the data are longitudinal, the background characteristics, school experiences and post-school pathways of young people from non-metropolitan areas of Australia provide variables that may help explain, at least in part, participants' pathways and the decision to leave or remain in non-metropolitan areas. Further, and again because of the longitudinal nature of the collection, the background characteristics, school experiences, and post-school pathways can facilitate causal explanations of subsequent migration choices, such as who is the most likely to return to non-metropolitan areas. Previous research using the LSAY data (Jones, 2002) looked at the influence of location on the reading comprehension and mathematics achievement tests in Year 9, completion of Year 12 and entry

into higher education, but did not follow young people as they continued on their post-school pathways.

The LSAY data provide important complementary information to that available through the analysis of cross-sectional data from other sources. Data from the Census of Population and Housing provide information on the rate of mobility in different age groups of Australians, and have also reported on characteristics associated with greater mobility (having changed address in the previous 12 months) but without distinguishing between young people who move outside of the local area and those who move two streets away. Without such a distinction, questions pertaining to the particular patterns of migration followed by youth from non-metropolitan areas are difficult to address.

Longitudinal data from projects such as LSAY are especially valuable for tracking the education, training and labour market pathways undertaken by young people from year to year, and linking this information to background characteristics and previous experiences in the labour force and education. The investigation examines the education, employment and geographic pathways undertaken by young non-metropolitan people in the years following departure from secondary school.

For the purposes of this report, young people from non-metropolitan locations will be identified as those residing outside major cities, that is in an area with an Accessibility/Remoteness Index for Australia (ARIA) score greater than 0.2 as indicated in the Australian Standard Geographic Classification (ASGC) remoteness classification at the time they were in Year 9 at secondary school. Townships and other areas that would be considered non-metropolitan under this definition include such varying locations as Bendigo (VIC), Broken Hill (NSW), Broome (WA), Bundaberg (QLD) and Burnie (TAS). Further details are provided in Chapter 2. Movement will thus be restricted to movements between a non-metropolitan area and a metropolitan area, in other words, moving from non-metropolitan areas to the major cities and back again. While it is recognised that this restricted definition of movement does not take into account those young people who may move between different non-metropolitan areas, the focus is on movement towards the major cities, as this is the direction of the bulk of youth migration away from non-metropolitan regions of Australia (see Australian Bureau of Statistics, 2003a).

The report has three broad aims:

- To investigate the post-school pathways of non-metropolitan youth. What are their levels of participation in education and training activities in the years after secondary school? What are their levels of participation in employment activities, and where are they located during these years?
- To investigate the characteristics of young people that are associated with remaining in their non-metropolitan community or, conversely, leaving the area and moving to the city. Who leaves, who stays, and why? Do some young people eventually return? Do certain characteristics increase the likelihood of leaving a non-metropolitan area, and for those who do leave, are there characteristics associated with them eventually returning?
- To investigate various economic and other outcomes associated with decisions to move, remain or return. Are those who leave more likely to gain employment in their desired occupation? Are there differences in the income levels of those who leave, those who remain and those who return? Are there differences in their self-reported life satisfaction, or social outcomes, such as partnership formation and home ownership?

The following chapter, Chapter 2, provides information on the data, measures, and the methods of analysis that were employed to investigate these questions. The results are presented in Chapters 3 through 5, and a discussion of the findings is presented in Chapter 6.

2. DATA, DEFINITIONS AND METHODS

Data for this report are based upon a sample of students who were in Year 9 in 1995 and who form part of the LSAY program. Most sample members completed Year 12 in 1998 and, at the time of data collection in 2004, had been out of school for at least six years. Their average age at that time was 23 years. This report focuses on 5112 young people from the original cohort who were residing in areas outside major cities of Australia, as defined by the ASGC Remoteness classification system for ARIA scores (ABS, 2003). Further information on the LSAY data is contained in Appendix 1.

Definition of ‘non-metropolitan’

Each year during the annual LSAY interviews, respondents are asked to provide current contact information, including their postcodes. For the purposes of this report, ARIA scores were assigned to each postcode. The scores, ranging from 0 to 12, can be used as a continuous index of remoteness, or can be divided at different break points and used as the basis for a variety of categorical systems. One such system is the Australian Standard Geographical Classification (ASGC): Remoteness (see Table 1).

Table 1 Australian Bureau of Statistics ASGC (Australian Standard Geographic Classification) Classification of Remoteness

Remoteness Area Class	ARIA score	Examples
Major Cities of Australia	0.0-0.2	Melbourne, Sydney, Hobart, Adelaide, Canberra, Brisbane, Perth (and surrounding suburbs of the above)
Inner Regional Australia	>0.2 – 2.4	Bendigo, Geelong, Launceston, Orange, Port Macquarie, Wagga Wagga, Toowoomba.
Outer Regional Australia	>2.4 – 5.92	Bundaberg, Cairns, Darwin, Dubbo, Huonville, Kalgoorlie Mildura, Ouyen, Port Pirie, Ulverstone.
Remote	>5.92 – 10.53	Alice Springs, Broken Hill, Charleville, Emu Bay, Hopetoun, Cape Barren Island
Very Remote	>10.53	Bourke (NSW), Broome (WA), Port Augusta (SA), Tennant Creek (NT), Thursday Island (QLD)
Migratory	Areas composed of off-shore, shipping and migratory CDs	

Adapted from: Australian Bureau of Statistics. (2003). *ASGC Remoteness Classification: Purpose and Use*. (Census Paper No.03/01). Canberra: ABS

In this report, the non-metropolitan sample was defined according to the ASGC Remoteness classification, comprising the 5112 LSAY participants who were *not* living in major cities in 1997 (the year in which the majority of the cohort were in Year 11). In this way, the sample conforms to common understanding of a ‘non-metropolitan’ sample, in that they are residing outside of major urban centres.

Variables

The variables that are investigated in this report as potential influences on the post-school activities of non-metropolitan youth have been grouped into five categories: background characteristics; school-related variables; post-school activities; geographic mobility; and outcomes. These groups of variables are discussed in turn below. Table 2 documents the composition of sample members in terms of the background characteristics and school-related variables analysed in the report.

Background characteristics

Gender is an important factor in the analyses presented in this report, considering the potentially different education, training and work pathways taken by males and females in non-metropolitan areas, and the findings of significant gender differences in previous research in these areas.

The influence of characteristics of the local labour market was also examined through the inclusion of a broader measure, such as SEIFA IRSED allocated to postcodes. The *Index of Relative Socio-Economic Disadvantage* (IRSED) is one of five *Socio-Economic Indexes for Areas* (SEIFA) developed by the Australian Bureau of Statistics (ABS) and updated after each five-yearly population census. Scores on IRSED are derived from attributes of the area, such as low income, low educational attainment, high unemployment and jobs in relatively unskilled occupations. High scores occur when the area has few families of low income and few people with little training and few who are employed in unskilled occupations. Conversely, low scores occur when the area has many low-income families and people with little training and in unskilled occupations (ABS, 1998). IRSED was selected to provide an aggregate measure of the local labour market, incorporating ease of finding employment and the nature of available jobs. The 1996 edition of SEIFA was used, as cohort members were generally in Year 10 at the time of that census and the derivation of IRSED scores. Sample members' perceptions of the state of their local labour market may influence decisions about participation in further education and training as well as decisions to leave the local area for 'greener pastures'.³

A measure of parents' education, as reported by the respondents, was included in the analyses as an indicator of social/cultural capital of the family and the importance placed on further education by the family. This measure was derived from respondents' reports of the qualifications held by their parents in the first year of the surveys.

School-related variables

Achievement in literacy and numeracy at Year 9 has been shown to influence Year 12 completion and subject choice at school, and these variables have been related to different patterns of post-school study and labour market outcomes in earlier LSAY research. Transformed scores based on the respondents' performance on the literacy and numeracy tests that were part of the first year of the survey were used in the current report.

A measure of attitudes toward school was included in the analyses as students who hold unfavourable perceptions of school may be more inclined to leave early and not to engage with post-school study, which may affect later employment outcomes (Alloway et al., 2001; Khoo & Ainley, 2005). This measure was based on responses to a set of 30 items regarding attitudes to school that were included in the first year of the surveys.

³ While it would be possible to include different measures of the local labour market, such as unemployment rates for statistical local areas, that may be available at more regular intervals, it is theorized that the environment *at the time in which a young person is formulating his or her plans for future education or employment* may be more influential on their pathways than a measure closer in time to their transition.

Sample members' reported plans for post-school education and training are also investigated as a potential influence not only on members' participation in further education and training but also on their geographic mobility. Young people with plans to pursue their education in specific fields or at specific institutions may have to move in order to pursue these aspirations. This measure was based on sample members' responses to a series of questions in the 1997 interview, when they were around 16 years of age.

Completion of Year 12 (as indicated by participants' receipt of the relevant certificate for their State) is included in the analyses. Other research has reported that non-metropolitan youth in the Y95 cohort may be less likely to complete Year 12 than metropolitan youth (Jones, 2002), which then has an impact on the range of further education, training and employment opportunities that may be available to them. The measure of holding a Year 12 certificate was derived from respondents' reports of their completion status in each of the years surveyed.

Post-school activity pathways

Sample members' participation in various forms of post-compulsory education and training (university and TAFE courses, apprenticeships and traineeships) is collected at each annual interview. In addition, in the 2001 interview, participants provided detailed retrospective data on additional study undertaken since leaving secondary school. These data can be used to map pathways through education and training in the years after secondary school and the level of educational attainment reached by 2004. The pathways of youth who leave non-metropolitan areas and move to the cities can be compared with those who remain in non-metropolitan areas.

Similarly, sample members' participation in paid employment is also collected at each annual interview and can be used to map employment status and longitudinal employment history.

Geographic measures

Mobility: Sample members' geographic mobility is measured using the contact address information (postcodes) provided at each annual interview, which is then assigned an ARIA score. The non-metropolitan sample is defined according to the ASGC Remoteness classification of ARIA scores, comprising the 5112 LSAY participants who were *not* living in Major cities in 1997 (see Table 1). Geographic movement in the years after compulsory schooling is completed (from 1998 to 2004) is also measured using postcodes classified according to the ASGC Remoteness classification, simplified to a metropolitan/non-metropolitan dichotomy. As discussed in Chapter 1, the focus of this report is on movement between non-metropolitan areas and the major cities and back again.

Accessibility: While the simplified non-metropolitan/metropolitan dichotomy is used in monitoring the sample's year to year movement, such a split ignores the potentially vast differences between the areas that are classified as non-metropolitan, which may have ARIA scores of 0.2 through to 12 (according to the ASGC classification). In order to investigate whether the 'tyranny of distance' is a factor in the mobility of the non-metropolitan sample and on their later outcomes, respondents' ARIA scores (derived from their contact postcode in each survey year) are included in some analyses as a measure of the accessibility of the respondents' home area. Including an indicator of accessibility in analyses of geographic movement brings to the forefront the issue of access to services, goods and opportunities (such as education and employment opportunities) in the decisions of young people to leave their local areas.

Table 2 Background characteristics of the non-metropolitan sample

Variable	Categories	Total weighted number	Percentage	
Gender	Female	2626	52.0	
	Male	2409	48.0	
Parental occupation	Professionals and para-professionals	821	16.3	
	Managers and administrators	1145	22.7	
	Clerical positions and personal service	726	14.4	
	Trades	859	17.1	
	Plant and machine operators	191	3.8	
	Labourers and related workers	659	13.1	
	Parental education	Neither parent has tertiary qualification	3676	73.0
	One parent has tertiary qualification	697	13.8	
	Both parents have tertiary qualification	307	6.1	
Secondary school completion	Left without completing	1924	38.2	
	Completed but no Year 12 certificate	83	1.6	
	Completed with Year 12 certificate	3028	60.1	
Post-secondary education plans (1997 interview)	Go to university	1978	39.3	
	Get an apprenticeship	531	10.5	
	Get a traineeship	95	1.9	
	Go to TAFE	803	15.9	
	Go to a business/private college or other course	75	1.5	
	Look for work/get a job	633	12.6	
	Something else	219	4.3	
	Do not know	446	8.9	
	Missing	255	5.1	
Variable		Total weighted number	Mean	Standard deviation
Maths test (scaled score on common scale)		4956	49.59	9.71
Reading test (scaled score on common scale)		4964	49.56	9.79
Attitudes to school score		4950	4.98	0.91
Index of relative socio-economic disadvantage		5035	986.70	51.95

Note: Weighted sample size is 5035. Totals may differ to sample size due to missing data. Attitude score was subjected to transformation to eliminate negative and zero scores.

Outcomes

A range of outcomes are used in this report, based on sample members' status at the time of the 2004 interview, when most were aged 23 years. Emotional outcomes are measured by members' self-reported life satisfaction (general and career) and can be compared across geographic groups—those who remain in non-metropolitan areas, those who leave and do not return, and those who leave and return at some point. In the LSAY program, respondents' levels of life satisfaction are measured using their responses of how happy they are with 14 different aspects of their lives. These items generally group together into three scales, or factors: general satisfaction; career satisfaction; and satisfaction with the economic-political environment.⁴ For the purposes of this report, only two of the scales, general and career satisfaction, are compared across the geographic groups. Socioeconomic outcomes that are examined include employment status and occupation level, average income and hours worked per week, and home ownership, while social indicators such as relationship and family formation are also compared across the geographic groups. All of these measures apart from parental status are based on sample members' responses to direct questions in the annual surveys. Parental status is derived from information provided by sample members on the other people currently residing with them.

Methodology

Broadly, two approaches are taken in the analysis of the data. In the first analytical chapter (Chapter 3), descriptive statistics and cross-tabulations are used to describe the post-school pathways undertaken by the non-metropolitan sample, and to examine relationships between background variables and the pathways. In the second analytical chapter, Chapter 4, in which the focus is on the geographic mobility of young people, Cox regression (a particular method of survival analysis) is used to examine the influence of the variables of interest on the likelihood of a young person leaving the non-metropolitan area they were residing in at the time of the 1997 interview to move to a metropolitan location (as compared to remaining in their local community). These techniques are also used to examine the influence of such characteristics on returning to non-metropolitan areas for those who had left at some point. The significance of variable estimates in a Cox regression is tested using chi-squared statistics. The associated significance (*p*-value) of the variables is noted in tables throughout this report. A more detailed description of chi-squared analyses and Cox regression techniques is included in Appendix 2. In Chapter 5, descriptive statistics and bivariate analyses (predominantly chi-squared analyses) are used to compare socioeconomic and emotional outcomes among young people who leave non-metropolitan areas, those who stay and those who eventually return.

⁴ For further discussion of the items and the scales they contribute to, see Hillman and McMillan (2005).

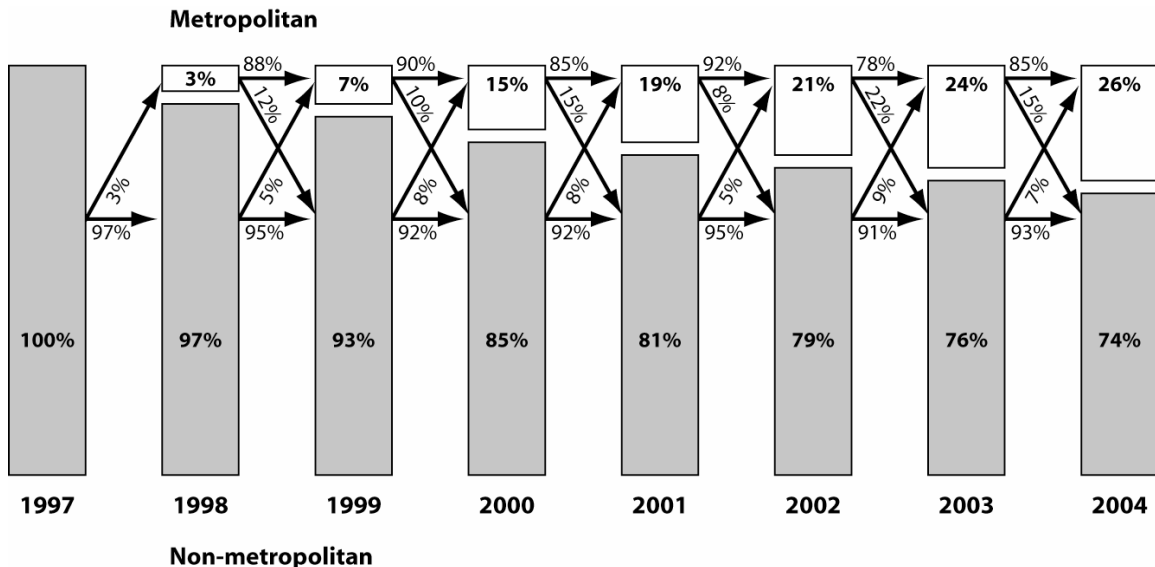
3. POST-SCHOOL ACTIVITIES AND PATHWAYS OF NON-METROPOLITAN YOUTH

This chapter describes the movements and activities of young people from non-metropolitan areas—as determined by their address in 1997, when the majority of these young people were in Year 11 at school. In the first section, their movements between non-metropolitan and metropolitan areas are summarised. The second section describes their participation in education, training and employment in each year from 1998 to 2004. In the third section, activities are compared between those who remained in non-metropolitan areas and those who moved to metropolitan areas. Analyses to determine what effect these activities may have had on movements to major cities—and back—are conducted in Chapter 4.

Movement between non-metropolitan and metropolitan areas

As noted in Chapter 1, there is much research that shows that young people leave non-metropolitan areas and move to major cities to further their education, gain full-time employment, or have experiences that are not available in their home communities. One of the benefits of longitudinal research is the ability to follow participants and to determine when they move and what activities may be associated with those moves.

Figure 1 shows the geographic movements of the 1995 Year 9 cohort members who were living in non-metropolitan areas in 1997 ('the non-metropolitan sample'). Of these 5112 young people, 3 per cent moved to major cities and 97 per cent remained in non-metropolitan areas in 1998. Then, of those who were in non-metropolitan areas in 1998, 5 per cent moved to capital cities in 1999, and 95 per cent remained in non-metropolitan areas. Also in 1999, 12 per cent of those who had moved to a major city in 1998 had then moved back to a non-metropolitan area in 1999, and 88 per cent of those who had moved to a major city in 1998 remained there in 1999. As a result, 93 per cent of the non-metropolitan sample were in non-metropolitan areas in 1999 and 7 per cent were in metropolitan areas.



Note: Numbers attached to arrows show the percentage of people in each group (metropolitan or non-metropolitan) who moved from one area to the other.

Figure 1 Annual movement of the non-metropolitan sample between non-metropolitan and metropolitan areas, 1997–2004

In each of the years between 1997 (when the modal age of the sample was 16 years) and 2004 (when the modal age of the sample was 23 years), there was an average annual rate of movement to metropolitan areas of close to 7 per cent. During that same period, approximately 14 per cent of those who had moved to major cities had moved back to non-metropolitan areas. Nevertheless, the absolute numbers of those moving to the cities was greater than the numbers returning from the cities, so that by 2004 just under three-quarters (74%) of non-metropolitan young people in 1997 were still in non-metropolitan areas.

Movement between non-metropolitan areas and metropolitan areas was greatest at two intervals: 1999–2000 and 2002–2003. In 1999–2000 and in 2000–2001, 8 per cent of those living in a non-metropolitan area moved to a metropolitan area, and in 2002–2003, 9 per cent of those still living in a non-metropolitan area moved to a metropolitan area. The 8 per cent movement to a major city in 2000–2001 had a smaller effect than it did in 1999–2000, because there was more movement from major cities to non-metropolitan areas in 2000–2001 (15% compared to 10%). In 2002–2003, when 9 per cent of those remaining in non-metropolitan areas had moved to major cities, 22 per cent of those living in major cities moved to non-metropolitan areas, thereby reducing the impact on the total percentage living in non-metropolitan areas. Regardless of the increasing percentage of non-metropolitan youth who moved from major cities to non-metropolitan areas, the overall percentage of non-metropolitan youth who were living in metropolitan areas continued to increase.

Gender differences in movement between non-metropolitan and metropolitan areas

For most of the years in the present analysis, a slightly greater percentage of young women moved between non-metropolitan and metropolitan areas, in both directions, than young men. This is shown in Table 3, which uses the overall percentages of the group to show movement. This also indicates that in each year, more young people were moving from non-metropolitan areas to metropolitan areas, rather than in the opposite direction. In addition, for each year from 1998 to 2004, a marginally greater percentage of females than males who had been in non-metropolitan areas in 1997 had moved to a metropolitan area, and had also moved again to a non-metropolitan area (this may be referred to as ‘return migration’). By 2004, 24 per cent of males and 27 per cent of females from non-metropolitan areas were living in capital cities, and 33 per cent of males and 40 per cent of females had spent some time in a metropolitan area. While there is interest in the movement of young people from non-metropolitan areas to major cities, it can be easy to overlook the fact that two-thirds of young men (67%) and three-fifths (60%) of young women in this group had not moved to a major city between 1997 and 2004 at all.

Table 3 Annual movement by the non-metropolitan sample between non-metropolitan and metropolitan areas, by gender, 1997–2004

Year	Males			Females		
	Percentage of sample moving to metropolitan areas in year	Percentage of sample moving to non-metropolitan areas in year	Cumulative percentage of sample in metropolitan areas in year	Percentage of sample moving to metropolitan areas in year	Percentage of sample moving to non-metropolitan areas in year	Cumulative percentage of sample in metropolitan areas in year
1997	--	--	0	--	--	0
1998	3	--	3	4	--	4
1999	4	<1	6	5	<1	9
2000	7	<1	13	8	1	16
2001	6	2	17	7	2	21
2002	3	1	18	4	2	23
2003	6	4	21	9	6	26
2004	5	2	24	5	5	27
Ever in a metropolitan area	33			40		

Notes: Figures in this table represent percentages of the active cohort each year. All persons in this table were living in non-metropolitan areas in 1997 and constitute the non-metropolitan sample.

Annual activities of the non-metropolitan sample

As shown in Table 3, 24 per cent of non-metropolitan young men and 27 per cent of non-metropolitan young women were living in metropolitan areas in 2004. Conversely, 76 per cent of young men and 73 per cent of young women were living in non-metropolitan areas that year. The activities of those who stayed and the activities of those who moved are compared in this section. First, however, it is important to examine the activities in which these young people participated. The activities discussed in this section are based on the 'main activity' recorded at each interview. In the case of those who report two activities—such as working part-time while studying full-time—only one activity is recorded, with study generally classified as the main activity.

Annual activities

In 1997, when members of the 1995 Year 9 LSAY cohort were approximately 16 years of age, 80 per cent of cohort members in non-metropolitan areas were attending secondary school. By contrast, 89 per cent of cohort members in metropolitan areas were still at school in 1997. Earlier research using this LSAY cohort has also shown that young people from non-metropolitan areas were less likely than their counterparts to complete Year 12 at school (Marks, Fleming, Long & McMillan, 2000; McMillan & Marks, 2003).

The difference in Year 12 completion between young men and young women has been noted elsewhere, with the Australian Bureau of Statistics (2006) reporting a difference of more than 11 percentage points in the Year 7/8 to Year 12 apparent retention rate for 2005 (69.9 for males and 81.0 for females).⁵ This difference first reached 10 percentage points in 1989 (ABS, 1990), and has remained around 10 points since then. Table 4 shows the activities of young men and young women from non-metropolitan areas for each year from 1997 to 2004. Seventy-five per cent of young men and 85 per cent of young women were still at secondary school in 1997, but these rates decreased to 65 per cent and 79 per cent, respectively, for 1998. During those same years, when the majority of the cohort was in Year 11 and Year 12 at school, young men were more frequently engaged in apprenticeships and traineeships than were young women. Ainley and Corrigan (2005) found that participation in apprenticeships and traineeships was higher for young people from non-metropolitan rather than metropolitan backgrounds, among members of the 1995 Year 9 LSAY cohort.

In subsequent years, more young women than men were engaged in university study, both full-time and part-time, and in other tertiary education, particularly at TAFE institutions; again in those years, young men continued to be engaged in apprenticeships and traineeships more frequently than were young women. Also during the period from 1997 to 2004, young men were more frequently engaged in full-time work than young women, while young women were more frequently engaged in part-time work than were young men. In 2004, 71 per cent of young men were employed full-time, compared to 59 per cent of young women. Young women more frequently described their main activity as home duties and caring for children, compared to young men in each post-school year.

In 1999, the first year after most young people had completed secondary school, 19 per cent of young men and 31 per cent of young women in the non-metropolitan sample were enrolled at university. For both men and women, this participation rate increased by 2 percentage points in 2000. Among the full cohort, 26 per cent of young men and 35 per cent of young women entered higher education in 1999 (Marks et al, 2000). An additional 4 per cent of the cohort entered in 2000, with some having already left higher education in their first year (McMillan, 2005).

⁵ The apparent retention rate is not a measure of the rate of completion of Year 12, but it is a reasonable proxy for full-time participation in the senior years of school, particularly when examining changes over time.

Table 4 Main activity of the non-metropolitan sample, 1997–2004, by gender

Year/ Gender	Secondary school	University	TAFE & other study	Apprenticeship/ Traineeship	Full-time work	Part-time work	Home duties/ children	Other	Total	Number in sample
	%	%	%	%	%	%	%	%	%	n
1997										
Male	75	--	2	9	8	3	--	3	100	2409
Female	85	--	2	2	5	4	<1	2	100	2626
1998										
Male	65	--	3	14	11	2	<1	5	100	2239
Female	79	--	3	3	6	4	1	4	100	2426
1999										
Male	4	19	12	23	29	5	<1	8	100	1988
Female	4	31	15	9	24	10	2	6	100	2228
2000										
Male	<1	21	8	26	32	5	<1	8	100	1785
Female	<1	33	11	8	29	9	4	6	100	2013
2001										
Male	<1	22	5	20	40	6	1	7	100	1541
Female	--	32	7	5	34	9	6	6	100	1756
2002										
Male	--	19	4	7	56	6	<1	8	100	1369
Female	--	24	7	2	42	11	6	7	100	1563
2003										
Male	--	14	4	4	64	5	1	8	100	1217
Female	--	16	5	2	54	10	7	6	100	1352
2004										
Male	--	9	5	3	71	4	1	6	100	1073
Female	--	13	5	1	59	10	6	6	100	1176

Note: This table reports on the 'main activity' only. For this table, people who are studying and working are considered to be studying only. 'Other' includes unemployment, travel and illness. The columns 'Secondary school', 'University', 'TAFE & other study' and 'Apprenticeship/Traineeship' include those studying full-time and those studying part-time.

Activities by geographic area each year

By 2004, 26 per cent of non-metropolitan youth from the 1995 Year 9 LSAY cohort were living in metropolitan areas, with 36 per cent overall having spent some time living in a major city. Also by 2004, 65 per cent of non-metropolitan youth were working full-time. Understanding of movements in relation to activities requires more information on where such activities occurred. For example, did young people from non-metropolitan areas move to major cities to attend university? Were young people from non-metropolitan areas able to remain outside the major cities and find full-time employment? While multivariate analysis is important to understand the complex relationships among numerous factors to answer these questions, some indication of where young people participate in activities is available in Table 5.

As noted earlier in relation to Figure 1, movement between non-metropolitan and metropolitan areas was more common in some years compared to other years. For example, the greatest amount of movement occurred in 2000 (after 1999) and in 2003 (after 2002). Although the first period (1999–2000) is one full year after most young people completed Year 12 at school, this change may be associated with the timing of an address change. Many of these are young people who were attending university full-time in both years who did not change university. It is likely that they kept their 'home' address on record for LSAY interviews, and reported a change in the second year. Table 5 shows that in 1999, 379 young men and 695 young women were attending university as their main activity, and 10 per cent of those men and 13 per cent of those women were in metropolitan areas. In 2000, however, the 24 per cent of men attending university did so in a metropolitan area, as did 22 per cent of young women attending university.

Table 5 Main activity of the non-metropolitan sample, by gender and geographic area, 1998–2004

Year and area of residence	Male										Female									
	Secondary school	University	TAFE & other study	Apprenticeship /Traineeship	Full-time work	Part-time work	Home duties /children	Other	Number in sample	Secondary school	University	TAFE & other study	Apprenticeship /Traineeship	Full-time work	Part-time work	Home duties /children	Other	Number in sample		
1998																				
Non-metro	97	--	97	97	95	95	na	96	2172	97	--	93	87	97	94	100	93	2330		
Metro	3	--	3	3	5	5	na	4	66	3	--	7	13	3	6	--	7	96		
Number	1448	0	67	308	240	56	na	118	2238	1915	0	64	82	148	94	25	97	2426		
1999																				
Non-metro	96	90	91	96	95	96	na	98	1870	88	87	93	95	93	95	94	90	2033		
Metro	4	10	9	4	5	4	na	2	117	12	13	7	5	7	5	6	10	195		
Number	78	379	238	453	586	90	na	162	1987	79	695	323	195	542	219	52	123	2228		
2000																				
Non-metro	65	76	82	91	90	90	na	92	1550	55	78	89	88	86	88	91	84	1691		
Metro	35	24	18	9	10	10	na	8	235	45	22	11	12	14	12	9	16	321		
Number	4	367	143	462	564	95	na	141	1785	8	671	221	164	575	179	71	124	2012		
2001																				
Non-metro	100	70	79	88	87	80	na	90	1280	--	73	85	83	81	77	88	88	1396		
Metro	--	30	21	12	13	20	na	10	264	--	27	15	17	19	23	12	12	364		
Number	2	342	74	303	618	89	na	107	1544	0	566	125	91	601	165	100	108	1760		
2002																				
Non-metro	--	65	74	87	86	75	na	89	1118	--	68	78	85	78	79	86	84	1203		
Metro	--	35	26	13	14	25	na	11	252	--	32	22	15	22	21	14	16	361		
Number	0	260	57	92	770	80	na	105	1370	0	371	104	38	659	176	101	114	1564		
2003																				
Non-metro	--	61	74	83	82	72	na	83	958	--	59	78	na	73	82	86	86	1002		
Metro	--	39	26	17	18	28	na	17	259	--	41	22	na	27	18	14	14	350		
Number	0	169	46	54	776	63	na	97	1217	0	222	70	na	724	139	89	83	1352		
2004																				
Non-metro	--	60	73	96	77	78	na	73	815	--	57	80	na	73	82	88	63	856		
Metro	--	40	27	4	23	22	na	27	258	--	43	20	na	27	18	12	37	321		
Number	0	98	57	31	765	47	na	69	1073	0	153	61	na	691	115	72	70	1177		

Note: This table reports on 'main activity' only. People who were studying and working were considered as studying only. 1997 is not included, as all members were in non-metropolitan areas. The definition of area for each year is based on the recorded home address for that year. 'Other' includes unemployment, travel and illness. Activities for which there were fewer than 25 persons are noted with 'na', but they contribute to the totals.

Both Figure 1 and Table 3 also show greater movement between 2002 and 2003, from metropolitan areas to non-metropolitan areas and from non-metropolitan areas to metropolitan areas, although overall the percentage of non-metropolitan young people living in metropolitan areas still increased. Again, these moves are likely to be associated with further study, as this would allow for the completion of tertiary study. For a better understanding of these moves, it will be necessary to examine information on the activities of cohort members before and after these changes in location.

Activities before and after moves between non-metropolitan and metropolitan areas

Three aims of this research were cited in Chapter 1: to investigate post-school pathways of non-metropolitan youth; to investigate who leaves, who stays and why they make these choices; and to investigate the outcomes associated with decisions to move, remain or return. As noted earlier, around one-quarter of young people from non-metropolitan areas were living in a major city in 2004, while more than one-third had spent at least one year living in a major city (see Table 3).

This section concentrates on three main periods of change: 1998–1999, which covers the last year of secondary school for most of the sample; 1999–2000, which includes much of the second year after Year 12, when a great deal of movement occurred; and 2002–2003, which is a time that showed much movement in both directions, when many had completed post-school study.

1998–1999

In 1998, the majority of members of the 1995 Year 9 LSAY cohort were in Year 12 at secondary school, and in the following year about one-quarter of the non-metropolitan sample entered full-time university study. The movement between 1998 and 1999 is shown in Table 6. Only 8 per cent of those entering university reported a metropolitan address for 1999 (10% of females and 6% of males), but this may be because many cohort members were reluctant to change their official contact address at the time. Indeed, in 2000, of the cohort members whose activity in both 1999 and 2000 was full-time university study, 14 per cent had changed their address from non-metropolitan to metropolitan, but only 3 per cent of these ‘leavers’ (or less than 1 per cent of university students) had changed university or campus, indicating that for most this change was only an update for LSAY contact purposes (see Table 7).

Overall, post-secondary study was the most common activity undertaken by the non-metropolitan sample after moving from non-metropolitan areas to metropolitan areas. In addition to the 8 per cent of university students moving to major cities, 6 per cent of those in TAFE and other study had moved to a metropolitan area. Only 2 per cent, however, moved to a major city to take up an apprenticeship or traineeship.

Full-time work was the most common single activity for the non-metropolitan sample in 1999, with 27 per cent in this activity compared to the 25 per cent who enrolled in university. Most of those in full-time work remained in a non-metropolitan area, with only 3 per cent having moved to a major city.

Table 6 Activity and location in 1999 of the non-metropolitan sample who were living in non-metropolitan areas in 1998, by activity in 1998

Activity in 1998	Activity and location in 1999														Total	
	Secondary school		University		TAFE/other study		Apprent./Traineeship		Full-time work		Part-time work		Other			
	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)		
Secondary school	3	97	8	92	6	94	1	99	3	97	1	99	1	99	3025	74
TAFE/other study	--	na	na	na	na	na	--	na	9	91	--	na	na	na	106	3
Apprent./Traineeship	--	na	--	na	--	na	5	95	1	99	--	na	na	na	323	8
Full-time work	--	na	--	na	na	na	1	99	5	95	na	na	7	93	314	8
Part-time work	--	na	--	na	--	na	--	na	1	99	na	na	na	na	124	3
Other	--	na	--	na	na	na	na	na	5	95	--	na	8	92	185	5
Total	3	97	8	92	6	94	2	98	3	97	2	98	3	97	4077	
Number	149		1030		546		633		1095		296		329		4077	
% in activity in 1999	4		25		13		16		27		7		8		100	

Notes: Activities for which there were fewer than 25 persons are noted with 'na', but they contribute to the totals. Activities for which there were no persons are noted with '-'. The categories of 'University' and 'TAFE/other study' include full-time and part-time students. The category 'Other' includes the activities of 'Looking for work', 'Home duties/children' and 'Other (including travel)'. Columns and rows may not sum to 100% because of rounding.

Table 7 Activity and location in 2000 of the non-metropolitan sample who were living in non-metropolitan areas in 1999, by activity in 1999

Activity in 1999	Activity and location in 2000														Total	
	University		TAFE/other study		Apprent./Traineeship		Full-time work		Part-time work		Other		Total			
	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)		
Secondary school	8	92	na	na	na	na	3	97	--	na	--	na	--	na	132	4
University	14	86	na	na	na	na	12	88	17	83	na	na	na	na	876	25
TAFE/other study	7	93	11	89	15	85	5	95	3	97	10	90	10	90	481	14
Apprent./Traineeship	--	na	na	na	3	97	4	96	na	na	--	na	--	na	550	16
Full-time work	11	89	5	95	6	94	5	95	9	91	10	90	10	90	926	26
Part-time work	12	88	--	100	14	86	13	87	3	97	--	100	--	100	257	7
Other	--	na	14	86	--	na	10	90	6	94	8	92	8	92	281	8
Total	13	87	10	90	5	95	6	94	7	93	7	93	7	93	3503	
Number	914		354		592		1061		258		325		9		3503	
% in activity in 2000	26		10		17		30		7		9		7		100	

Notes: Activities for which there were fewer than 25 persons are noted with 'na', but they contribute to the totals. Activities for which there were no persons are noted with '-'. The categories of 'University' and 'TAFE/other study' include full-time and part-time students. 'TAFE/other study' includes those at secondary school. The category 'Other' includes the activities of 'Waiting to start a job', 'Looking for work', 'Home duties/children' and 'Other (including travel)'. Columns and rows may not sum to 100% because of rounding.

1999–2000

In the following period, from 1999 to 2000, the movements and the activities in which these young people were engaged were similar to what was recorded between 1998 and 1999. As shown in Table 7, the most common activities in 2000 were full-time work (30%) and university study (26%). Among those studying at university in 2000, 13 per cent had moved to a metropolitan area, although some of this movement had most likely occurred the previous year, as noted earlier.

A small group of people moved from full-time or part-time work into university study, with 12 per cent taking up that study in metropolitan areas. For both 1999 and 2000, these figures are much lower than the 40 per cent reported by Blakers et al (2003). This lower figure is most likely a result of how this information has been recorded in LSAY. Home addresses at the time of interview have been used for the present study; cohort members may have been interviewed while in a major city where they were attending university, but subsequent mailings—which occur in December—were sent to their home address. It should be noted, however, that even though the location of the home address is used as opposed to the university attended, those attending university were the most likely to change their addresses to metropolitan areas. Further, as the period 2002–2003 will show, there is still more movement back to non-metropolitan areas for many young people after completion of university study than for any other set of activities.

Once again for this period, post-compulsory study was the most common activity that attracted young people to metropolitan areas. In addition to the 13 per cent of university students who were in major cities, 10 per cent of those doing TAFE or other study had moved to a metropolitan area, yet only 5 per cent of those undertaking New Apprenticeships had moved.

A small number of young people moved from part-time work into full-time work between 1999 and 2000, and 13 per cent of them had moved to a major city to do so.

2002–2003

Table 8 shows the movements and activities between 2002 and 2003 of the same group of young people who were living in non-metropolitan areas in 1997. It also includes movements of those who had moved to a metropolitan area. By 2003, most young people who had undertaken tertiary education had completed their initial post-secondary qualification. The rate of transfer from one area to the other—between metropolitan and non-metropolitan areas—was similar: 12 per cent of those still in non-metropolitan areas moved to a major city to continue university study, and 13 per cent of those who had moved to a major city to attend university had moved back to a non-metropolitan area. As noted earlier, others have estimated that around 40 per cent of non-metropolitan young people attend universities in metropolitan areas. Considering that in 1999 only 8 per cent had reported a change of address to a metropolitan area, as did 13 per cent in 2000, the figure of 13 per cent moving ‘back’ suggests that young people from non-metropolitan areas who attended university in major cities did not necessarily change their contact address for the LSAY data collections. This also suggests that young people from non-metropolitan areas do not necessarily attend universities in major cities with the intention of remaining in a major city upon graduation.

The largest group in 2003—60 per cent of those who were non-metropolitan areas in 2002—comprised those in full-time work. This group includes a large number who were in full-time work in 2002, and 92 per cent of them remained in a non-metropolitan area. Fourteen per cent of those who were at university in 2002 had moved to a major city in 2003, although it is possible that some of these young people had attended a metropolitan university, as noted above.

Table 8 Activity and location in 2003 of the non-metropolitan sample, by location and activity in 2002

Non-metropolitan in 2002

Activity in 2002	Activity and location in 2003														Total
	University		TAFE/other study		Apprent./Traineeship		Full-time work		Part-time work		Other		Total	% in activity in 2002	
	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)			
University	12	88	na	na	--	--	14	86	7	93	5	95	382	19	
TAFE/other study	na	na	14	86	--	--	6	94	na	na	na	na	110	5	
Apprent./Traineeship	na	na	--	na	3	97	10	90	--	na	--	na	97	5	
Full-time work	27	73	2	98	na	na	8	92	15	85	6	94	1018	50	
Part-time work	na	na	na	na	--	na	7	93	7	93	na	na	170	8	
Other	na	na	na	na	--	na	10	90	14	86	6	94	249	12	
Total	15	85	9	91	5	95	8	92	10	90	7	93	2026	100	
Number	257			91		67	1207		166		237				
% in activity in 2003	13			4		3	60		8		12				

Metropolitan in 2002

Activity in 2002	Activity and location in 2003														Total
	University		TAFE/other study		Apprent./Traineeship		Full-time work		Part-time work		Other		Total	% in activity in 2002	
	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)	Metro (%)	Non-metro (%)			
University	87	13	--	--	--	--	74	26	na	na	na	na	187	35	
TAFE/other study	na	--	na	na	--	--	na	na	na	na	--	--	36	7	
Apprent./Traineeship	--	--	--	--	na	na	na	na	na	--	na	--	na	na	
Full-time work	na	na	na	na	na	na	82	18	na	--	na	na	217	40	
Part-time work	na	--	--	--	--	na	71	29	na	na	na	na	48	9	
Other	na	--	na	--	--	na	na	na	--	na	na	na	36	7	
Total	88	12	75	25	na	na	78	22	73	27	59	41	541	100	
Number	135			25		na	293		36		40				
% in activity in 2003	25			5		na	54		7		7				

Notes: Activities for which there were fewer than 25 persons are noted with 'na', but they contribute to the totals. Activities for which there were no persons are noted with '--'. The categories of 'University' and 'TAFE/other study' include full-time and part-time students. The category 'Other' includes the activities of 'Waiting to start a job', 'Looking for work', 'Home duties/children' and 'Other (including travel)'. Columns and rows may not sum to 100% because of rounding. All persons were living in non-metropolitan areas in 1997.

Overall, of those who had been in a major city in 2002, 78 per cent remained there in 2003. The largest group again comprised those who were in full-time work. Of those who had been at metropolitan university in 2002, 26 per cent moved to a non-metropolitan area for full-time work in 2003. Of the larger group—those who had been working, either full-time or part-time in 2002—20 per cent had moved to a non-metropolitan area for full-time work in 2003.

Activities in 2004

Just over one-quarter of young people who had been living in a non-metropolitan area in 1997 were living in a major city in 2004. Table 5 above showed, by gender, what these young people were doing as their main activity in 2004. Overall, 42 per cent of those who were in higher education were in a metropolitan area (40% of males and 43% of females), as were 25 per cent of those who were working full-time (23% of males and 27% of females).

Is there much difference in the activities done in metropolitan and non-metropolitan areas by these young people? Table 9 shows the distribution of activities of this group of people according to the area. For example, 18 per cent of those in metropolitan areas were at university—including post-graduate study—as were 9 per cent of those in non-metropolitan areas. Of those in non-metropolitan areas, 66 per cent were working full-time and 8 per cent part-time; of those who had moved to metropolitan areas, 62 per cent were working full-time and 5 per cent part-time. One small activity for young people in 2004—at around age 23—is labelled ‘home duties/children’ in Table 9: only 1 per cent of those in metropolitan areas were in this group, compared to 4 per cent of those in non-metropolitan areas.

Table 9 Main activity of the non-metropolitan sample in 2004, by location

Activity	Location in 2004		Total (%)
	Metropolitan (%)	Non-metropolitan (%)	
University (full-time or part-time)	18	9	11
TAFE/other study (full-time or part-time)	5	5	5
Apprenticeship/Traineeship	1	2	2
Full-time work	62	66	65
Part-time work	5	8	7
Home duties/children	1	4	4
Other (including looking for work)	8	6	6
<i>Number in sample</i>	<i>579</i>	<i>1671</i>	<i>2250</i>

Notes: Columns may not sum to 100% because of rounding. All persons were living in non-metropolitan areas in 1997.

Summary

There is much concern in Australia that young people are leaving their rural communities because those communities are not able to provide further education and training, employment and other opportunities that are available in the major cities of Australia. The data presented in this chapter support this idea. Among young people in the 1995 Year 9 LSAY cohort who had been living in non-metropolitan areas in 1997 and were enrolled in Year 11 at school, 26 per cent were living in a metropolitan area in 2004, with 36 per cent having experienced at least one year in a major city during 1998–2004.

For many of the young people who did leave their non-metropolitan areas, that move was associated with participation in post-compulsory education, and more frequently university study. Over six years, approximately 40 per cent of the non-metropolitan sample who moved to a metropolitan area were studying, either at a university or a TAFE institution or were undertaking an apprenticeship or traineeship. While others have reported that 40 per cent of university students from non-metropolitan areas attend university in the major cities of Australia, such figures were not recorded in LSAY. No more than 33 per cent of university students in the non-metropolitan sample were ever recorded as having a metropolitan address. This may be an artefact of how location has been obtained for this report—using the postcode of annual LSAY contact details, which may be the cohort member's parents' address. Nevertheless, a reluctance to change one's address while at university may indicate a reluctance to consider the move to a metropolitan area anything more than a temporary move for study. Indeed, among those who had recorded a metropolitan address during study, there was return migration—from a metropolitan area to a non-metropolitan area—after completing university, although not nearly equal to the number of young people who had moved to the cities.

Young people in the non-metropolitan sample did not move to metropolitan areas to take up an apprenticeship or traineeship, or other study as frequently as they did to study at university. This suggests that there may be better provision of other forms of post-compulsory education and training in non-metropolitan areas, compared to the number of non-metropolitan universities. Nevertheless, not all young people in the cohort remained in non-metropolitan areas for such study.

Overall, the information on the movements and activities of young people presented in this chapter shows that there is a general movement of young people from non-metropolitan areas to the major cities of Australia. They tend to make these geographical shifts to take up study that may not be available in their home communities or in other non-metropolitan centres, although there are other subsequent activities—such as work and travel—in which young people engage after leaving home. While approximately 36 per cent of young people do leave non-metropolitan areas, return migration results in a net loss of close to 24 per cent by around age 23.

4. INFLUENCES ON THE GEOGRAPHIC MOBILITY OF NON-METROPOLITAN YOUTH

This chapter addresses the question of whether various background characteristics and experiences affect the likelihood that a young person will leave non-metropolitan areas to explore education or employment opportunities in 'the city'. The first set of analyses examines the likelihood of young people from non-metropolitan areas moving to a metropolitan area in the years following secondary school. The second set of analyses examines the likelihood of return from metropolitan areas for those who elected to leave in the first place.

Overall, 1320 young people experienced a move from a non-metropolitan location to a major city during the time they were surveyed. Complete data from 1312 of these young 'leavers' (530 males and 782 females), representing around one in four young people located in non-metropolitan areas at the time of the 1997 interview, was included in the Cox regression analyses.⁶

Influences on moving to the city between 1997 and 2004

The results presented in Chapter 3 indicated that some characteristics were associated with the rate at which young people leave non-metropolitan areas for the cities. Young women, for example, appeared to be moving to the cities in greater numbers than young men, as did young people participating in tertiary study. Cox regression analyses were performed to assess the influence of background characteristics, including measures of the employment and educational opportunities in the local area (ARIA and IRSED); educational variables, such as early achievement and plans for future study; and involvement in various post-school activities on the likelihood that a young person who was residing in a non-metropolitan area at the time of the 1997 interview would move to a metropolitan area within the observed time frame (up until the time of the 2004 interview). The analyses were performed separately for young men and women, to investigate whether the influences on leaving non-metropolitan areas differed across gender. A number of these potential influences on leaving a non-metropolitan area were included in the analyses as indicator or dummy variables (an explanation of indicator variables in Cox regression is included in Appendix 2), while measures of early school achievement in reading and mathematics, attitudes towards school, and the relevant ARIA and IRSED scores for young people's locations were entered as numeric variables.

Analyses were conducted in a model-building, or step-wise fashion, in which groups of variables were entered in blocks, as detailed in Table 10. Previous analyses of the influence of attitudes, intentions and participation in education have suggested that although the strongest influence on actual participation in educational activities was young people's intention to participate, the strength of that association can effectively obscure the influence of positive attitudes to school on intentions, and thus through intentions on participation (see Khoo and Ainley, 2005 for further discussion). It is unlikely that the decision to leave a non-metropolitan area, representing as it does such a change in lifestyle for many young people, is made impulsively. Young people may instead form attitudes towards schooling and intentions to further their education that may lead them to participate in educational activities that are concentrated in the cities, thus drawing them away from non-metropolitan locations. The current analyses were conducted in this step-wise manner in order to investigate this possible explanation for the link between education and

⁶ Young people with incomplete data, or whose scores on numerical variables were considered to be multivariate outliers, were excluded from the Cox regression analyses.

geographic mobility that has been found in previous research (e.g., Blakers, Bill, Maclachlan, & Karmel, 2003).⁷

Table 10 Variables included in Cox regression analysis of leaving a non-metropolitan location

Stage of analysis	Variable group	Variables entered in this block	Change from previous step for Males	Change from previous step for Females
Step 1: Block 1	Background characteristics	Parent with tertiary qualification ARIA score of home location in year prior to move IRSED score for home location in 1996	$\chi^2_{(3)} = 37.931, p < .000$	$\chi^2_{(3)} = 31.792, p < .000$
Step 2: Block 1 + Block 2	School-related variables	Attitudes towards school Mathematics test score Reading test score Year 12 certificate	$\chi^2_{(4)} = 48.214, p < .000$	$\chi^2_{(4)} = 55.545, p < .000$
Step 3: Blocks 1 and 2 + Block 3	Post-school plans	University study Apprenticeship Work	$\chi^2_{(3)} = 31.648, p < .000$	$\chi^2_{(3)} = 24.179, p < .000$
Step 4: Blocks 1, 2 and 3 + Block 4	Current activity	University study (full-time) TAFE study (full-time) Employment (full-time)	$\chi^2_{(3)} = 124.061, p < .000$	$\chi^2_{(3)} = 169.575, p < .000$

The ‘Change from previous step’ column in Table 10 indicates whether the new set of variables entered in this point in the analyses contributed to the association with leaving non-metropolitan areas above that already accounted for by the variables in the previous block. In other words, do we know more about who is likely to move to the city after we include this group of variables? In each step in the current analyses, the answer to this question would be ‘yes’, as each step in which a new block was added to previous blocks was associated with a statistically significant change. The largest change came at the final step with the addition of the current activity variables, and there were some interesting changes to the results as different blocks entered the analyses. The results for each step are discussed below, while the regression coefficients, degrees of freedom, significance or *p* values and hazard ratios for each of the covariates in the analyses are presented in Appendix 3, Table A 1 and Table A 2. Hazard ratios indicate the influence of a factor, for example, having a parent who had a tertiary qualification, on the likelihood (or hazard) of a young person leaving a non-metropolitan area for a metropolitan area relative to the hazard

⁷ While relationships that involve direct and indirect pathways of influence are traditionally explored using structural equation modelling, that method does not make best usage of longitudinal data and does not allow for censored cases to inform the analysis, as does Cox regression.

for a reference group, which in this case would be young people whose parents do not have a tertiary qualification.

Step 1: Background characteristics (Block 1)

The background characteristics of having a parent with tertiary qualifications, and the ARIA score for home location in year prior to a move (or the last interview) were all significantly associated with the likelihood that a young man or young woman would leave a non-metropolitan area for the city. For young men, those with a parent who had a tertiary qualification were more likely to leave non-metropolitan areas relative to those whose parents did not have such a qualification (hazard ratio = 1.76). A one-point increase in the ARIA score associated with a young man's home location in the previous year (remembering that ARIA scores increase as accessibility to services decrease) was also associated with a significant increase in the likelihood of him moving to the city (hazard ratio = 1.054, indicating a 5.4% increase per one-point change in ARIA). For young women, having a parent with a tertiary qualification also increased the likelihood of leaving a non-metropolitan area by more than 45 per cent (hazard ratio = 1.453). A higher ARIA score was also associated with a greater likelihood of young women leaving for the city (hazard ratio = 1.054).

Step 2: Background characteristics plus school-related variables (Block 1 + Block 2)

As indicated by the significant chi-square result in Table 10, the addition of the school-related variables to the Cox regression was associated with the likelihood of leaving a non-metropolitan area for the city. Young men who scored higher on the reading tests (undertaken when they were in Year 9) were more likely to leave non-metropolitan areas, with a one-point increase on the reading test increasing the likelihood of leaving by close to 2 per cent (hazard ratio = 1.017). Graduating from secondary school with a Year 12 certificate also increased the likelihood that a young man would move to the city, by about 40 per cent relative to young men who did not hold such a certificate (hazard ratio = 1.405).

Results differed slightly for young women. Although a higher reading test score was again associated with an increased likelihood of leaving, with a similar magnitude to that observed for young men (hazard ratio = 1.017), young women who scored higher on the mathematics tests were also more likely to leave non-metropolitan areas (hazard ratios = 1.017). Having graduated with a Year 12 certificate had no statistically significant influence on the likelihood that a young woman would leave her non-metropolitan home.

The influences of having a parent with tertiary qualifications and higher ARIA scores remained statistically significant for both males and females with the addition of the school variables to the analyses.

Step 3: Background characteristics, school-related variables plus post-school plans (Blocks 1, 2 + 3)

The set of covariates related to young people's post-school plans to attend university, to begin an apprenticeship or to find a job were associated with the likelihood of moving from a non-metropolitan area to a city. For both young men and young women, this was due largely to the influence of plans to attend university. Young men who intended to continue their study at a university were 60 per cent more likely to leave non-metropolitan areas (hazard ratio = 1.601), while young women who planned to attend university in the year following completing secondary school were around 30 per cent more likely to move to a city (hazard ratio = 1.319). Plans to begin an apprenticeship or find a job were not significantly associated with the likelihood of leaving for young men or young women.

The addition of the post-school plans variables also resulted in changes to the significance of associations with other variables. For young men, the influences of the school-related variables (reading test scores and having a Year 12 certificate) disappeared with the addition of post-school plans to the analyses, while the influence of parents' education and ARIA scores remained significant. For young women, higher numeracy and reading test scores still increased the likelihood of leaving a non-metropolitan area after the inclusion of post-school plans, as did higher ARIA scores. Having a parent with tertiary qualifications, however, was no longer significantly associated with leaving a non-metropolitan area.

Step 4: Background characteristics, school-related variables, post-school plans plus current activity (Blocks, 1, 2, 3 + 4)

In the final stage of the analyses, three covariates were added that represented young people's main activities for the year they moved (or the final year surveyed). These covariates were significantly associated with the likelihood of leaving for young men and young women, as shown in Table 10.

For young men, all three activity variables were significantly associated with the likelihood of leaving.⁸ Young men from non-metropolitan areas who were studying full-time at university or at TAFE were more likely to move to a metropolitan location relative to those who were not participating in these activities (hazard ratios = 1.534 and 2.021 for university and TAFE study, respectively). Young men who were in full-time employment, however, were less likely to leave a non-metropolitan area (hazard ratio = 0.450). For young women, the influences of full-time university study and full-time employment on the likelihood of leaving were similar to those for young men, being involved in university study full-time increased the likelihood that a young woman would leave (or have left) a non-metropolitan area, while being employed full-time decreased the likelihood that she would leave (hazard ratios = 1.596 and 0.484 for university and employment, respectively). Studying full-time at a TAFE college, however, was not associated with an increased likelihood of leaving for young women.

As may be expected, the addition of the current activity variables to the analysis resulted in a reduction of the influence of post-school plans on the likelihood of leaving a non-metropolitan area. Where previously a plan to attend university was associated with an increase in the likelihood of leaving, once actual participation in university were included in the analysis, this association no longer reached statistical significance for young men or young women. In contrast, the ARIA score retained its significant association with leaving for both groups, such that a one-point increase in the ARIA score was associated with an almost 6 per cent increase in the likelihood of moving to a metropolitan area for young men and young women, all other things equal (hazard ratios = 1.058 and 1.057 for male and females, respectively). For young men, the positive influence of having a parent with tertiary qualifications on leaving remained statistically significant in the final analysis. Young men whose parents had such qualifications were more than 30 per cent more likely to leave a non-metropolitan area in the years following secondary school than were those whose parents did not have tertiary qualifications (hazard ratio = 1.367). For young women, however, the final stage of the analysis indicated no additional influences on the likelihood of leaving beyond those discussed above.

In summary, the final models indicated that those young people who were pursuing full-time study at university were more likely to relocate from a non-metropolitan area to a major city, while those who were working full-time were less likely to experience such a move. Young men and women who were originally located in areas that were less accessible (as measured by ARIA)

⁸ Activity is measured at the same time point that a move occurred or the last year a young person was interviewed. The timing of the move is not exact, and it is likely that for many young people the move to a metropolitan location preceded the beginning of full-time study at university or TAFE by a few months or weeks, but annual data collection does not provide this information. It is best in this instance to think of the activity being *associated* with the move, rather than *driving* or *causing* the move.

were also more likely to relocate. Having a parent with a tertiary qualification increased the likelihood of moving to a city for young men only.

Influences on returning to non-metropolitan areas

For those who choose to leave non-metropolitan areas in the years following secondary school, the relocation is not necessarily permanent. Indeed, some research has estimated that as many as one in four young people return to their original non-metropolitan location after having spent some time away, while Canadian research showed that more than one-third of individuals who leave a rural community will have returned to another rural community in the same province (or state) ten years later (Dupuy, Mayer & Morissette, 2000). In the current sample, 396 young people returned to a non-metropolitan area after having moved to the city, representing about 30 per cent of those who had moved out of non-metropolitan areas.

Cox regression analyses were performed to assess the influence of various background characteristics, educational variables, such as whether the young person had graduated from a tertiary course, and involvement in various post-school activities on the likelihood that a young non-metropolitan person who had moved to major city at some point would return to a non-metropolitan area within the observed time frame (up until the time of the 2004 interview). Some young people had moved in between non-metropolitan and metropolitan locations a number of times. For those few young people, the analyses were restricted to their first move back to a non-metropolitan area. Data from the 146 young men and 250 young women who returned to a non-metropolitan area during the time surveyed was included in the analyses.

For these analyses, all covariates were included in the model in one step. This set of variables included background characteristics, school-related variables and post-school plans that had been used in the previous analyses of leaving (ARIA score of home location in 1997, having a parent with a tertiary qualification, holding a Year 12 certificate and plans to attend university, get an apprenticeship or get a job). The main activity of the young people the last year they were still in a metropolitan area (that is, the year before they reported that they had returned to a non-metropolitan area) and whether they held a tertiary qualification were also included in the analyses. The activity variables were *lagged*, that is, taken from a time point prior to the event (returning to a non-metropolitan area), to attempt to separate the activity and the move in time.

The analyses indicated that the covariates were statistically significantly associated with returning to a non-metropolitan location for young men and women ($\chi^2_{(9)} = 22.732, p = .007$ and $\chi^2_{(9)} = 47.946, p = .000$ for males and females, respectively), although estimates of the strength of this association were quite small ($R^2 = 0.0416$ and $R^2 = 0.0592$ for males and females, respectively). Table A 3 and Table A 4 in Appendix 3 present the regression coefficients, degrees of freedom, p values and hazard ratios for each of the covariates in the analyses for young men and young women, respectively.

For young men, involvement in full-time employment (measured in the year last in a metropolitan area) was the only covariate to significantly affect the likelihood of returning to a non-metropolitan location after having moved to a city. Young men who were employed full-time were about half as likely to return to a non-metropolitan area as those who were not working full-time (hazard ratio = 0.529). The negative influence of full-time employment on the likelihood of returning to a non-metropolitan area was similar for young women (hazard ratio = 0.592). Young women who held tertiary qualifications were also less likely to return to a non-metropolitan area than those without such qualifications (hazard ratio = 0.622).

The relationship between full-time employment and a disinclination to leave a metropolitan area is relatively straightforward. Young men and women who have already succeeded in securing a full-time position in the labour force have not only reached a significant milestone in their own

journey but have also made a commitment to remaining in the area of that position for at least the term of their contract. They have, to an extent, begun to put down roots. The negative influence of tertiary qualifications on the likelihood of young women returning to non-metropolitan areas is less straightforward. It may be that these young women perceive fewer opportunities for them to apply their qualifications in non-metropolitan areas.

Summary

This chapter presented the results of analyses that tested whether certain background characteristics influence the likelihood that a young person would move away from his or her non-metropolitan location to one of the major cities within the surveyed period. Further analyses were then conducted using data from those young people who had moved away from non-metropolitan areas to explore whether there were characteristics that were associated with returning to a non-metropolitan area.

For young men, results in the final model indicated that current activity had the strongest effect on the likelihood of leaving a non-metropolitan area—full-time study at university and TAFE increased the likelihood of leaving while full-time employment decreased the likelihood of leaving. Having a parent with tertiary qualifications also increased the likelihood that a young man would move from a non-metropolitan area to a city. For young women, involvement in full-time study at university increased the likelihood of leaving a non-metropolitan area, while working full-time decreased the likelihood of leaving.

For both young men and young women, higher ARIA scores were also associated with an increased likelihood that a young person would experience a move to the cities. In other words, the less access the location they lived in had to a number of services (including educational facilities), the more likely young people were to move.

Performance of the analyses in a step-wise fashion allowed some exploration of relationships between early achievement and school attitudes, plans for further study, and their influence on leaving non-metropolitan areas. For both young men and young women, early achievement (reading and maths test scores) appeared to be related to the likelihood of leaving, although this relationship decreased when post-school plans were added to the analyses. The relationships between post-school plans, particularly plans to study at university, and leaving non-metropolitan areas in turn decreased once actual participation in this activity (current full-time study at university) was added to the model. The influence of early school achievement and post-school plans on the likelihood of young people moving to metropolitan areas were thus indirect influences, working largely through an influence on participation in higher education.

For those young people who had left a non-metropolitan area and moved to a city, analyses were conducted to investigate influences on the likelihood of them returning to a non-metropolitan area at some point in the surveyed period. For young men, being involved in full-time employment in the last year they were located in a metropolitan area was the single significant influence on whether they were likely to return to a non-metropolitan area or not. Those who were working full-time were less likely to return to a non-metropolitan area. For young women, full-time employment also had a negative influence on the likelihood of return to a non-metropolitan area. In addition to this relationship, young women who held tertiary qualifications were less likely to return to non-metropolitan areas than were young women who did not hold such qualifications.

The analyses that explored the associations between various characteristics and returning to a non-metropolitan area indicated that although the associations found reached statistical significance, the overall magnitude of the relationship was quite small. This suggests that there are other factors influencing whether young people return to non-metropolitan areas that it has not been possible to examine here.

5. OUTCOMES FOR GEOGRAPHIC GROUPS: STAYERS, LEAVERS AND RETURNERS

In the previous two chapters, the focus has been on the post-school activities and pathways of young people from non-metropolitan areas of Australia, and the influences of various characteristics, such as early school achievement and post-school plans, on the likelihood of these young people relinquishing their non-metropolitan roots in favour of the city. In this chapter, the focus shifts to the possible social and financial outcomes associated with the decision to move to a city or stay in a non-metropolitan area, and then whether to return to non-metropolitan area or remain in the city.

For the analyses conducted in this chapter, the 2249 members of the non-metropolitan sample who remained in the survey in 2004 were divided into three groups. These groups were based on the geographic mobility of the young people over the years 1997 to 2004. Those who remained in a non-metropolitan location for all eight years were considered 'Stayers'. Those who moved to a major city at some point between 1997 and 2004 and remained there (or in another major city) were considered 'Leavers'; and those young people who moved to a major city but then returned at some point to a non-metropolitan area were considered 'Returners'. The Returners did not have to have returned to the *same* non-metropolitan area they had inhabited previously, only to have returned to *any* non-metropolitan area (including interstate). Not all of the 294 Returners remained in non-metropolitan areas at the time of the 2004 survey, however. Fifty-three of the Returners were living in a metropolitan area in 2004, indicating that they had in fact experienced a further move. These 'multiple movers' are excluded from further comparisons of the outcomes of the geographic groups. Overall, just under two-thirds of the young people from the non-metropolitan sample who were still participating in the surveys in 2004 had remained in a non-metropolitan area over the course of the seven years. Close to one in four of the sample members had moved to a metropolitan location, and remained in a metropolitan area in 2004, while nearly one in eight had returned to a non-metropolitan area at some point. Table 11 presents further information on the three groups.

Table 11 Geographic groups by gender and 2004 location, column percentages

	Geographic groups					
	Stayers		Leavers		Returners	
	n	%	n	%	n	%
Male	724	68	241	23	108	10
Females	706	60	285	24	186	16
Total	1430	64	526	23	294	13
2004 status						
Metropolitan	0	-	526	100	53	18
Non-metropolitan	1430	100	0	-	241	82

Note: Weighted for attrition and sample.

Further analysis indicated that there was a statistically significant association between gender and geographic group membership ($\chi^2_{(2)} = 19.836$, $p = 0.000$). A greater proportion of females returned to a non-metropolitan area after their initial move, while a smaller proportion of males did so (16% and 10%, respectively). There was also a difference noted in the proportions of males and females who stayed in non-metropolitan areas for the entire eight years. Similar findings have been reported in international research, particularly in the migration patterns of Swedish youth (Nilsson, 2003).

Social and emotional outcomes at age 23

A common view held of non-metropolitan Australia, and non-metropolitan areas around the world, is that ‘country’ people tend to marry earlier, and have more children and at an earlier stage. ‘City’ people, in contrast, may be seen as more career-driven, more likely to delay marriage and parenthood. While other factors, such as socio-economic background, ethnicity and religious beliefs, are also expected to inform decisions about when, or if, to marry and have children, the following analyses focus on possible associations between the geographic pathways following by these young people and such social outcomes. To see whether these common pictures (caricatures, some would have it) are borne out by the data, the three geographic groups— Stayers, Leavers and Returners— were compared on their rates of marriage, parenthood, living with their parents and self-reported levels of life satisfaction.

Around 12 per cent of the non-metropolitan sample who remained in 2004 reported that they were married by this stage. Further analyses of the marital status of the three geographic groups found that, despite there being a small difference in the proportions of Stayers and Returners who were married by age 23, as compared to the Leavers (13% of Stayers and Returners, compared with 9% of Leavers), the association was not statistically significant ($\chi^2_{(2)}= 4.546, p = 0.103$). It should be noted that the average age upon first marriage in Australia is slightly above that of the sample used here. In 2004, the median age upon first marriage was 29 years for males and 28 years for females- at least five years older than the majority of the respondents to the 2004 survey (ABS, 2005)⁹.

Table 12 Social outcomes for geographic groups in 2004, column percentages

	Geographic groups					
	Stayers		Leavers		Returners	
	n	%	n	%	n	%
Marital status in 2004						
Married	181	13	49	9	32	13
Not married	1248	87	477	91	210	87
Parental status in 2004						
Parent	198	14	29	6	41	17
Not parent	1232	86	498	94	201	83
Accommodation in 2004						
Living with parents	515	36	77	15	49	20
Not living with parents	914	64	449	85	192	80

Note: Weighted for attrition and sample.

In terms of parenthood, 12 per cent of the non-metropolitan youth reported living with their own children in the 2004 survey, with initial results indicating that there were differences across the geographic groups. The frequencies in Table 12 show that greater proportions of Stayers and Returners than Leavers reported having children of their own by 2004. Further analysis of these results found that the association between the geographic groups and parenthood was statistically significant, with parenthood by age 23 being less common among the Leavers than the other two groups ($\chi^2_{(2)}= 30.792, p < 0.000$). The analyses were then conducted separately for males and females, due to the association between geographic group and gender reported earlier. The association between parenthood and geographic group held for males ($\chi^2_{(2)}= 9.302, p = 0.01$), and for females ($\chi^2_{(2)}= 26.588, p < 0.000$), once again due to the fewer Leavers, both male and female, who were parents in 2004 (79 fathers and 188 mothers).

⁹ Marriages, Australia 3306.0.55.001 <http://www.abs.gov.au/Ausstats/abs@.nsf/Lookup/9025E35E5D062131CA256F6300711118> , accessed 19 December 2005.

Overall, around 30 per cent of the non-metropolitan sample who were still in the survey in 2004 reported that they were living with their parents. The proportions varied across the geographic groups, with 36% of Stayers, 20% of Returners and 15% of Leavers residing with their parents in 2004. Further analysis found that the association between geographic groups and living with one's parents was statistically significant ($\chi^2_{(2)} = 95.466, p < 0.000$). This relationship held for males ($\chi^2_{(2)} = 53.040, p < 0.000$) and females ($\chi^2_{(2)} = 41.960, p < 0.000$).

In the LSAY program, respondents' levels of life satisfaction are measured using their responses of how happy they are with 14 different aspects of their lives. These items generally group together into three scales, or factors: general satisfaction; career satisfaction; and satisfaction with the economic-political environment.¹⁰ For the purposes of this report, only two of the scales, general and career satisfaction, are compared across the geographic groups. As can be seen from the results in Table 13, there was very little difference in the average general and career satisfaction levels reported by young people who remained in non-metropolitan areas, those who moved to the cities and remained there, and those who eventually returned to non-metropolitan areas.

Table 13 General and career satisfaction scores for geographic groups in 2004, means and standard errors

	Geographic groups						Overall	
	Stayers		Leavers		Returners		Mean	se
	Mean	se	Mean	se	Mean	se		
General satisfaction in 2004	4.00	0.03	4.05	0.04	3.98	0.07	4.01	0.02
Career satisfaction in 2004	3.99	0.03	4.08	0.05	3.98	0.07	4.01	0.02

Note: Values are rounded to second decimal place and weighted for attrition and sample.

As would be expected from these results, further comparison of the mean general and career satisfaction levels of the geographic groups found no significant differences on general satisfaction ($F_{(2, 2194)} = 0.620, p = 0.538$) or on career satisfaction ($F_{(2, 2194)} = 1.920, p = 0.147$). In other words, young people who remain in non-metropolitan locations are not happier with their social lives or their relationships with other people (general satisfaction) than those who re-locate to the city or those who return to non-metropolitan areas after a period in the city, nor are they more or less satisfied with the money they earn or their career prospects (career satisfaction).

Financial and career outcomes at age 23

The 'unemployment problem in the bush' is often the topic of media headlines, particularly when events such as droughts, bushfires or industry closures affect local communities. The overlap between geographic location and economic circumstances has been highlighted in many studies of non-metropolitan populations in Australia and internal migration patterns away from rural areas (see James et al, 1999; Hugo, 2000). A decision about where to live—whether to remain in a non-metropolitan or to try one's luck in a metropolitan area—may have an impact on the future economic circumstances of young people, such as their employment opportunities or income. A number of financial and career outcomes were compared across the groups of non-metropolitan Stayers, Leavers and Returners to investigate whether there is evidence of group differences in such economic measures.

Overall, the vast majority of the young people on the sample were employed during 2004 (87%). There were no real differences in the proportions of young people who were employed across the geographic groups, as can be seen in Table 14.

¹⁰ For further discussion of the items and the scales they contribute to, see Hillman and McMillan (2005).

Table 14 Occupational outcomes for geographic groups in 2004, column percentages

	Geographic groups					
	Stayers		Leavers		Returners	
	n	%	n	%	n	%
Employment status in 2004						
Working	1242	87	460	88	202	84
Not working	188	13	66	12	49	16
Occupation group in 2004						
Professional/Managerial/para-professional	444	36	228	50	97	48
Clerical and Personal service	351	28	155	34	50	25
Trades	254	21	36	9	29	14
Skilled/Unskilled labourers	192	15	37	8	26	13

Note: Weighted for attrition and sample.

The proportions in the various occupational groups did differ across the geographic groups, however, with the results of further analysis indicating that there was a statistically significant association between the geographic and occupational groups— $\chi^2_{(2)} = 70.786, p < 0.000$. This result was driven largely by differences in the proportions of young people in Trades; as shown in Table 14, a greater proportion of Stayers were working in the Trades, while a smaller proportion of Leavers were employed in these occupations.

International studies have reported that a desire to remain in one's local area is not linked with lower levels of educational attainment or earnings for males, but that, given the historical restriction of occupational opportunities for women in rural areas, a strong preference to remain in the home community may result in poorer employment outcomes for young women (Johnson, Elder & Stern, 2005; Salamon, 1992). A comparison of the employment status of young women in the three geographic groups found that there was no statistically significant difference in the proportions of female Stayers, Leavers and Returners who were employed in 2004 (84%, 87% and 79%, respectively, $\chi^2_{(2)} = 5.135, p = 0.077$).

A comparison of the average gross weekly income across the geographic and occupational groups (Table 15) was made using a two-way between-groups analysis of variance, to explore the relationship between geographic and occupation groups and average gross weekly income. The main effect for occupational group was statistically significant ($F_{(3, 1506)} = 41.168, p < .000$), with the effect size being moderate (partial eta-squared = 0.07). Post-hoc comparisons using Dunnett's C for unequal variances indicated that the average gross weekly income of those in Clerical and Personal service occupations was significantly lower than the average income of each the other groups.

Table 15 Average gross weekly earnings in 2004, by geographic and occupational groups

Occupational group in 2004	Geographic groups					
	Stayers		Leavers		Returners	
	Average gross weekly earnings (\$)	Standard deviation of gross weekly earnings (\$)	Average gross weekly earnings (\$)	Standard deviation of gross weekly earnings (\$)	Average gross weekly earnings (\$)	Standard deviation of gross weekly earnings (\$)
Professional/Managerial	708.09	241.32	738.53	263.09	800.39	279.67
Clerical and Personal service	503.99	229.29	480.67	218.26	537.20	194.32
Trades	777.82	365.74	842.96	692.34	723.64	320.96
Skilled/Unskilled labourers	712.60	438.93	827.69	413.15	779.67	541.02
Overall	661.89	317.82	660.98	336.46	717.07	331.33

Note: Weighted for attrition and sample.

The main effect of geographic group and the interaction effect between geographic and occupational groups, however, did not reach statistical significance ($F_{(2, 1506)} = 2.169, p = 0.115$ and $F_{(6, 1506)} = 1.381, p = 0.219$, respectively), indicating that average gross weekly income did not differ significantly between the Stayers, Leavers and Returners overall, nor between people in the same occupations who were in different geographic groups. These results held when analyses were conducted separately for young men and women.

The standard deviations of the earnings of these young people (see Table 15) indicate that there is a great deal of variation in earnings at this point on their careers. International research into the earnings growth of young people who leave rural areas in Canada and those who remain has found that young people between the ages of 15 and 19 years and between the ages 25 and 29 years who leave rural areas experienced greater earnings growth over the years 1993 and 1997 than those who remained in rural areas. For those young people aged between 20 and 24 years, the earnings growth over the years measured was quite similar for those who remained in rural areas and those who moved to urban areas (Dupuy, Mayer and Morissette, 2000). It may be that over the next few years, the income of the geographic groups (currently around 23 years of age) will start to diverge in similar ways to that reported in the Canadian research, particularly as those young people who complete tertiary qualifications begin to enter and move through the labour force (see Marks, *forthcoming* for an analysis of earnings trajectories in the LSAY cohorts).

Table 16 Average work hours per week in 2004, by geographic and occupational groups

Occupation group in 2004	Geographic groups					
	Stayers		Leavers		Returners	
	Average work hours per week	Standard deviation of work hours per week	Average work hours per week	Standard deviation of work hours per week	Average work hours per week	Standard deviation of work hours per week
Professional/Managerial	39	11	38	11	40	12
Clerical and Personal service	31	13	30	12	32	12
Trades	42	9	43	17	40	13
Skilled/Unskilled labourers	40	17	38	11	43	19
Overall	38	13	36	13	38	14

Note: Hours are rounded to the nearest whole hour and weighted for attrition and sample.

A two-way between-groups analysis of variance was conducted in order to explore the relationship between geographic and occupation groups and average number of hours worked per week, reported in Table 16. The main effect for occupational group was again statistically significant ($F_{(3, 1861)} = 35.174, p < .000$), with the effect size being small to moderate (partial eta-squared = 0.05). Post-hoc comparisons using Dunnett’s C for unequal variances indicated that those in Clerical and Personal service occupations were working significantly lower hours on average than all of the other occupational groups, and that those in the Trades were working significantly longer hours on average than those in Professional and Managerial occupations. These results are not surprising, given that Clerical and Personal Service occupations are often linked with part-time employment, particularly among females, and that people in Trades may be self-employed to a greater extent than those in Professional and Managerial positions and thus be more likely to work extended hours.

The main effect of geographic group and the interaction effect between geographic and occupational groups, however, did not reach statistical significance ($F_{(2, 1861)} = 0.524, p = 0.592$ and $F_{(6, 1861)} = 0.614, p = 0.719$, respectively), indicating that the average number of hours worked per week did not differ significantly between those who remained in non-metropolitan areas, those who left and remained in metropolitan areas, and those who left but then returned to non-metropolitan areas. In other words, those who had moved to the city were not working longer hours than those who remained in or returned to non-metropolitan areas; the so-called ‘simple life’ in the country is not evidenced in a smaller work-load.

The level of home ownership is one of the (few) economic markers on which rural communities appear to be better off than their urban counterparts, with census data revealing that levels of owner/occupier households were larger in ‘bounded rural localities’ and the ‘rural balance’ areas from 1976 to 1996 (ABS 1976, 1986 and 1996 Censuses, cited in Hugo, 2000). Overall, around one in six (16%) of the non-metropolitan LSAY sample owned or were paying off their own home at the time of the 2004 survey. The rates of home ownership across the three geographic groups are presented in Table 17.

Table 17 Rates of home ownership by geographic groups in 2004, column percentages

	Geographic groups					
	Stayers		Leavers		Returners	
Home ownership in 2004	n	%	n	%	n	%
Home owner (including mortgagees)	263	18	54	10	40	17
Non-home owner	1167	82	472	90	201	83

Note: Weighted for attrition and sample.

Further analysis of the rates of home ownership reported by the Stayers, Leavers and Returners indicated a statistically significant association between geographic group and home ownership among the young adults in this sample ($\chi^2_{(2)} = 18.680, p < 0.000$). The significant result was driven largely by the fact that far fewer young people who were residing in metropolitan locations (the Leavers) had managed to buy their own home by age 23, compared with those who remained in or returned to non-metropolitan locations. Similar results have been reported in other publications using the LSAY data, in which young people from non-metropolitan backgrounds report higher rates of home-ownership than young people from metropolitan backgrounds (see Underwood, 2005 and Hillman & Marks, 2002). The finding that young people from non-metropolitan backgrounds who move to the city are less likely to enter the property market than their friends who remain in non-metropolitan areas, despite there being no difference in average weekly income across the groups, suggests that the difference in rates of home ownership has more to do with differences in affordability of housing in the non-metropolitan areas as compared to the cities.

Summary

This chapter presented the results of analyses that compared a number of social, financial and occupational outcomes at age 23 for the groups of young people designated as non-metropolitan Stayers (those who remained in non-metropolitan areas for entire surveyed period), Returners (those who moved away from non-metropolitan areas for a time but then returned) and Leavers (those who left non-metropolitan areas for major cities and remained there for the surveyed period). There were some gender differences in the make-up of the geographic groups, with rates of returning to non-metropolitan areas being higher among young women than young men.

In terms of social outcomes investigated, there were no differences in the rates of marriage across the groups, while a smaller proportion of Leavers, compared to those in the Stayer and Returner groups, reported that they were parents. Unsurprisingly, fewer young people in the Leaver group were still living with their parents at age 23, while a greater proportion of Stayers were still in the family home at the same age. The general and career satisfaction levels of young people in the Stayer, Returner and Leaver groups were very similar.

On the financial and occupation outcomes investigated, there were no differences in the levels of employment, the average gross weekly income or the average number of hours worked per week by young people in the Stayer, Returner and Leaver groups. A greater proportion of young people in the Stayer group were employed in Trades occupations, while fewer Leavers were employed in similar occupations. Rates of home ownership differed across the three groups. As has been found in other research, young people who remain in non-metropolitan areas or who return to these areas (Stayers and Returners) report higher levels of home ownership than young people who relocate to metropolitan areas (Leavers).

6. DISCUSSION AND CONCLUSIONS

The current report used data from Longitudinal Surveys of Australian Youth to focus on the group of young people who were living in non-metropolitan areas at the time of the 1997 interview (when most were in Year 11). The broad aims were three-fold:

- To investigate the post-school activity and geographic pathways of young people from non-metropolitan areas;
- To investigate the associations between these young people's characteristics and their geographic mobility, particularly their likelihood of leaving non-metropolitan areas and, for those who do leave, their likelihood of returning to a non-metropolitan area; and
- To investigate social, emotional and financial outcomes for groups of young people based on their observed geographic mobility, comparing those who stay in non-metropolitan areas, those who leave for the cities, and those who eventually return to a non-metropolitan area by age 23.

The analyses were prompted by concern that young people are leaving their rural communities because those communities are not able to support needs for further education and training, employment and other opportunities as are available in the major cities of Australia. Overall, the analyses presented in this report provide some support for this idea.

Among young people in the 1995 Year 9 LSAY cohort who had been living in non-metropolitan areas in 1997, 26 per cent were living in a metropolitan area in 2004, with 36 per cent having experienced at least one year in a major city during 1998–2004. For many of the young people who did leave their non-metropolitan areas, that move was associated with participation in post-compulsory education, and more frequently university study. While others have reported that 40 per cent of young people from non-metropolitan areas attend university in the major cities of Australia, such figures were not recorded in LSAY. This may be an artefact of how location has been obtained for this report—using the postcode used when annual contact details are updated for LSAY, which may very well be the cohort member's parents' address. Nevertheless, a reluctance to change one's address while at university may indicate a reluctance to consider the move to a metropolitan area anything more than a temporary move for study. Indeed, there was return migration—from a metropolitan area to a non-metropolitan area—after completing university, although not nearly equal to the number of young people who had moved to the cities.

Young people in the non-metropolitan sample did not move to metropolitan areas to take up an apprenticeship or traineeship, or to study at a TAFE (or similar institution) as frequently as they did to study at university. For young men, results in the final model indicated that current activity had the strongest effect on the likelihood of leaving a non-metropolitan area—full-time study at university and TAFE increased the likelihood of leaving, while full-time employment decreased the likelihood of leaving. For young women, involvement in full-time study at university increased the likelihood of leaving a non-metropolitan area, while working full-time decreased the likelihood of leaving.

For both young men and young women, higher ARIA scores were associated with an increased likelihood that a young person would experience a move to the cities. In other words, the further away a young person resides from a number of services (including educational facilities), as indicated by a higher ARIA score, the more likely it is that he or she will move to a metropolitan area in the years following secondary school. For many young people in the analyses reported here, a move to a city was indeed associated with attending an educational institution—university or a TAFE college— full-time in the year that the move is recorded.

This finding, in combination with the influence of the ARIA scores on the likelihood of leaving, may suggest that one way of retaining young people in non-metropolitan areas would be to increase their access to tertiary education in their local areas. While this would indeed be a worthy endeavour, other research has indicated that it may not be the answer non-metropolitan communities are seeking. Research that has explored the reasons given by young non-metropolitan people for relocating in order to study has suggested that these young people often choose to move even where there are facilities available to them locally. Geographic considerations are not necessarily high on the priority list of perspective students from non-metropolitan areas. For those who can afford to go to university (and financial considerations are important for many young people from rural areas, including the costs of travel and setting up a household), the institutions are most commonly selected on the basis of course provision and reputation in the area of study (James et al, 1999). Other research has concluded that for this reason, educational institutions that are located in non-metropolitan areas do not necessarily have an advantage in recruiting local students based simply on proximity. Instead, non-metropolitan universities and TAFE colleges need to focus on building strong reputations in specific courses and areas of study, as well as emphasising quality in educational provision overall and remaining responsive to the needs of students in local areas (Blakers et al, 2003; James et al, 1999). These considerations have implications for the infrastructure, and teaching and research profiles of regional institutions.

Overall, the influence of the variables investigated here on the likelihood that young people would leave non-metropolitan areas in favour of the major cities was quite small. This is to be expected, as the decision to leave one's local area is presumably a large step, and influenced by a broader range of factors than was possible to analyse in the current study. Although, in many cases, other research in this area has not reported on the magnitude of the relationships found between geographic mobility and background characteristics, it has been acknowledged that there is often more going on 'behind the scenes' of the decision to move than a desire for education or employment opportunities that are not available in the local area. Groups of rural youth interviewed in a study by James et al (1999) saw their pursuit of university study in an urban area as an opportunity to grow-up, assert their independence, meet new and exciting people and have experiences that are simply not available in their local communities. One Canadian study found that even if they could hold their desired job in their community, four out of ten young people would still be willing to move to an urban area (Roy, 1997; cited in Dupuy et al., 2000). Other factors, such as a desire for different life experiences or to fulfil one's aspirations (or those of one's parents), are also at play in the move of many young people away from rural areas.

The analyses allowed some exploration of relationships between early school achievement and school attitudes, plans for further study, and their influence on leaving non-metropolitan areas. For both young men and young women, high levels of early achievement were associated with an increased likelihood of leaving, although this relationship decreased when post-school plans were taken into consideration. The relationships between post-school plans, particularly plans to study at university, and leaving non-metropolitan areas in turn decreased once actual participation in this activity (current full-time study at university) was added to the model. These findings suggest that the decision to leave non-metropolitan areas to pursue the educational opportunities and experiences available in the city is not a spontaneous one; rather, it is developed over a period of time and within the context of other decisions about one's future, including educational and occupational aspirations and expectations.

One study of the migration patterns of rural Scottish youth reported that many young people and their families expected that they would one day leave, that it was 'almost a part of the natural life cycle' (Stockdale, 2002, p. 50), while others were actively encouraged to leave, to seek their fortunes elsewhere before deciding whether to return to their community or not. Other research has suggested that future orientations, including preferences for where one will live, typically reflect an anticipated life course and concern some of the most critical developmental tasks of

late adolescence, including the process of leaving one's family of origin, pursuing education and career goals, and eventually forming a family of one's own (Nurmi, 1991). Geographic relocation may be, for some young people, simply another step on the pathway to independence and adulthood.

Whether the decision to leave non-metropolitan areas can be described as part of a normal process for young people may hold small comfort for those communities who feel the loss of their young people deeply. These communities need some way of re-building their populations if they are to survive. Although the analyses showed that some young people do return to non-metropolitan areas after spending some time in the cities, the return migration never reached the same level as that of migration towards the cities. For young men, being involved in full-time employment in the last year they were located in a metropolitan area was the only significant influence on whether they were likely to return to a non-metropolitan area or not over the period covered in this study. Those who were working full-time were less likely to return to a non-metropolitan area. For young women, full-time employment also had a negative influence on the likelihood of return to a non-metropolitan area.

The relationship between full-time employment and a disinclination to leave a metropolitan area is relatively straightforward. Young men and women who have already succeeded in securing a full-time position in the labour force have not only reached a significant milestone in their own journey but have also made a commitment to remaining in the area of that position for at least the term of their contract. They have, to an extent, begun to put down roots. Young women who held tertiary qualifications were also less likely to return to non-metropolitan areas than were young women who did not hold such qualifications. The negative influence of tertiary qualifications on the likelihood of young women returning to non-metropolitan areas is less straight forward. It may be that these young women perceive fewer opportunities for them to apply their qualifications in non-metropolitan areas. Indeed, results from one Australian study indicated that gender differences in the range of employment opportunities in the local area had played a part in the decision of a number of young people to leave their rural area for a capital city (Eacott & Sonn, 2006).

One of the challenges for rural communities then is to convince these young people to return after completing their education elsewhere. The results from the analyses that compared the outcomes for the three groups of non-metropolitan youth (the Stayers, Leavers and Returners) provide some support to the argument that young people can benefit from returning to non-metropolitan areas for employment. Rates of employment, average income and work hours were similar across the groups. Home ownership was slightly higher among those who had chosen to remain in non-metropolitan areas.

While the period covered by the analyses in this report represent a time of relatively stable economic circumstances in Australia, it should also be noted that many areas of Australia, particularly rural areas, were already suffering the effects of a drought that has continued to the time of writing. Other studies, conducted during times of higher unemployment or of growth in different industries, particularly agricultural and resource industries, may find that the influences on leaving non-metropolitan areas and the outcomes for those who do are quite different to those reported here. The decision to stay or leave is not only informed by development and one's attitudes and ambitions, but also by the context within which that decision is made.

It should be remembered also that this group was still relatively young at the end of the surveyed period. For those who had completed a three-year undergraduate degree, they may only have been in the full-time labour force for two or three years. Other research has suggested that young people from non-metropolitan areas may be more likely to return to their home communities when it comes time for them to begin their own families. Given the delays in partnering and family formation that often accompany the pursuit of further education (particularly for young women), it may be that members of this sample of young non-metropolitan people will not be considering re-locating or returning to non-metropolitan areas for another five years or so.

REFERENCES

- Ainley, J., & Corrigan, M. (2005). *Participation in and progress through New Apprenticeships*. (LSAY Research Report No. 44). Melbourne: Australian Council for Educational Research.
- Alloway, N., Gilbert, P., Gilbert, R., & Muspratt, S. (2001). *Factors impacting on student aspirations and expectations in regional Australia*. Canberra: Department of Education, Science and Training.
- Alston, M., & Kent, J. (2001). *Generation X-pendable: Young, rural and looking for work*. Retrieved June 29 2005, from <http://www.csu.edu.au/research/crsr/about/GenX.pdf>
- Australian Bureau of Statistics. (1998). *Information paper: 1996 census of population and housing – Socio-economic indexes for areas* (Catalogue no. 2039.0). Canberra: ABS.
- Australian Bureau of Statistics. (2000). *Work - Underutilised labour: Long-term unemployment*. Canberra: ABS.
- Australian Bureau of Statistics. (2003a). *Youth migration within Australia*. Australian Social Trends (Cat. No. 4102.0). Canberra: ABS.
- Australian Bureau of Statistics. (2003b). *Participation in education: Regional differences in education and outcomes*. Australian Social Trends (Cat. No. 4102.0). Canberra: ABS.
- Australian Bureau of Statistics. (2003c). *Work - Underutilised labour: Geographic distribution of unemployment*. Canberra: ABS.
- Blakers, R., Bill, A., Maclachlan, M., & Karmel, T. (2003). *Mobility: Why do university students move?* Canberra: Department of Education, Science and Training.
- Cunningham, R., Choate, J., Abbott-Chapman, J., & Hughes, P. (1992). *Rural disadvantage and post-compulsory participation*. Hobart: Youth Education Studies Centre, University of Tasmania.
- Dupuy, R., Mayer, F., & Morissette, R. (2000). *Rural youth: stayers, leavers and return migrants*. Ottawa: Statistics Canada.
- Eacott, C., & Sonn, C.C. (2006). Beyond education and employment: Exploring youth experiences of their communities, place attachment and reasons for migration. *Rural Society*, 16 (2), 199-214.
- Hillman, K. J. and Marks, G. N. (2002). *Becoming an Adult: Leaving home, relationships and home ownership among Australian youth*. (LSAY Research Report 28). Melbourne: Australian Council for Educational Research.
- Hillman, K. and McMillan, J. (2005). *Life satisfaction of young Australians: relationships between further education, training and employment and general and career satisfaction*. (LSAY Research Report No. 43). Melbourne: Australian Council for Educational Research.
- Hugo, G. (2000). *What is happening in rural and regional populations?* Paper presented at the First National Conference on the Future of Australia's Country Towns, June 28-30 2005, Bendigo, Australia.
- James, R., Baldwin, G., Coates, H., Krause, K., & McInnis, C. (2004). *Analysis of equity groups in higher education 1991-2002*. Canberra: Department of Education, Science and Training.
- James, R., Wyn, J., Baldwin, G., Hepworth, G., McInnis, C., & Stephanou, A. (1999). *Rural and isolated school students and their higher education choices*. Canberra: Higher Education Council.

- Johnson, M., Elder, G. Jnr., & Stern, M. (2005). Attachments to family and community and the young adult transition of rural youth. *Journal of research on adolescence*, 15(1), 99-125.
- Jones, R. G. (2002). *Education participation and outcomes by geographic location* (LSAY Research Report No. 26). Melbourne: Australian Council for Educational Research.
- Khoo, S. T., & Ainley, J. (2005). *Attitudes, intentions and participation* (LSAY Research Report No. 41). Melbourne: Australian Council for Educational Research.
- Le, A.T. and Miller, P.W. (2002). *Educational attainment in Australia. A cohort analysis*. (LSAY Research Report No. 25). Melbourne: Australian Council for Educational Research.
- Long, M. (1996). *Samples and sampling for the Y95 LSAY cohort*. (LSAY Technical Paper No. 8). Melbourne: Australian Council for Educational Research.
- MaCurdy, T., Mroz, T., & Gritz, R. M. (1998). An evaluation of the National Longitudinal Survey on Youth. *Journal of Human Resources*, 33(2), 345-436.
- Marks, G.N. (forthcoming). *The occupations and earnings of young Australians: The role of education and training*. (LSAY Research Report). Melbourne: Australian Council for Educational Research.
- Marks, G.N., Fleming, N., Long, M. and McMillan J. (2000). *Patterns of participation in Year 12 and higher education in Australia: trends and issues*. (LSAY Research Report No. 17). Melbourne: Australian Council for Educational Research.
- Marks, G. N., and M. Long. (1996). *Weighting the 1995 Year 9 cohort sample for differential response rates and sample attrition*. (LSAY Technical Paper) Melbourne: ACER.
- McMillan, J. (2005). *Course change and attrition from higher education*. (LSAY Research Report No. 39). Melbourne: Australian Council for Educational Research.
- McMillan, J. and Marks, G.N. (2003). *School Leavers in Australia: profiles and pathways*. (LSAY Research Report No. 31). Melbourne: Australian Council for Educational Research.
- Ni Laoire, C. (2000). Conceptualising Irish rural youth migration: A biographical approach. *International Journal of Population Geography*, 6, 229-243.
- Nilsson, K. (2003). Moving into the city and moving out again: Swedish evidence from the cohort born in 1968. *Urban Studies*, 40(7), 1243-1258.
- Nurmi, J. (1991). How do adolescents see their future? A review of the development of future orientation and planning. *Developmental Review*, 11, 1-59.
- Rothman, S. (forthcoming). *Attrition Bias in the Longitudinal Surveys of Australian Youth*. (LSAY Technical Paper No. 32). Melbourne: Australian Council for Educational Research.
- Salamon, S. (1992). *Prairie patrimony: Family, framing, and community in the Midwest*. Chapel Hill, NC: University of North Carolina Press.
- Stockdale, A. (2002). Out-migration from rural Scotland: The importance of family and social networks. *Sociologia Ruralis*, 42(1), 41-64.
- Underwood, C. (2005). *Cohort report: The Year 9 Class of 1995 in 2004*. Retrieved June 30 2005, from <http://www.acer.edu.au/research/projects/lsay/cohort.html>

APPENDIX 1: DATA

The LSAY data

Data for this report are based upon a cohort of students who were in Year 9 in 1995 and who form part of the LSAY program. The sampling design for LSAY's 1995 Year 9 cohort was a two-stage cluster sample, with schools selected with a probability proportional to size in each State and Territory, and whole classes of students randomly selected within each participating school. The initial sample included 13 613 students from approximately 300 government, Catholic and independent schools (see Long, 1996 for details).

The students were first surveyed in their school in 1995, where they completed a questionnaire about themselves and their families. Further data on educational, training and labour market activities have been collected from the sample members on an annual basis: by mail questionnaire in wave 2, and by computer-assisted telephone interviews in subsequent waves. For the 1995 Year 9 cohort, annual data are available until 2004 including information on the students' family background; self-reported school performance; attitudes towards school; aspirations for post-secondary education; and annual data on participation in employment and education and location. The larger number of waves for this cohort allows for investigation of pathways and return migration over the period of time from a modal age of 16 (in 1997) to 23 years (in 2004).

In 1997, there were 5112 young people in the LSAY sample residing in areas outside major cities, based on the ASGC classification (see Table 1). These young people did not always attend secondary school locally, and they did not necessarily remain at home once they completed their secondary schooling.

Sample attrition

An important issue with longitudinal surveys is sample attrition. By 2004 only 34 per cent of the original 1995 sample were still participating in the survey. There are two major issues with sample attrition. First, it reduces sample size so that there is less scope to analyse particular sub-groups who comprise relatively small parts of the population, for example Indigenous Australians. Second, attrition causes the sample to become unrepresentative of the original cohort because less successful respondents are more likely to leave the study (MaCurdy, Mroz, & Gritz, 1998; Marks & Long, 1996). Attrition would be of less concern if it was completely random.

Attrition in the Y95 sample is higher among those with low achievement in Year 9 literacy and numeracy, Indigenous youths, males and those with low socioeconomic backgrounds (Marks & Long, 1996; Rothman, *forthcoming*). However, the annual LSAY survey data are weighted to ensure that the current sample remains broadly representative of the original cohort of Year 9 students (Rothman, *forthcoming*). The weights are calculated according to sex and four levels of combined scores on the achievement tests administered in Year 9. The LSAY samples can still retain strong statistical properties, even down to 25 per cent of the original sample, because the samples were large when cohort members were first contacted, and because the weighting procedures reduce potential bias.

APPENDIX 2: METHODOLOGY

Chi-squared (χ^2) analysis

The χ^2 test of independence is a non-parametric test of statistical significance used to examine the relationship between two discrete (that is, non-continuous or categorical) variables. In this report, χ^2 analyses are conducted to examine the relationships between various socio-demographic characteristics and membership of the three geographic groups: Stayers (those who remained in non-metropolitan areas for the entire surveyed period of 1997 to 2004), Returners (those who moved to a major city but then returned to a non-metropolitan area) and Leavers (those who moved to a major city and did not return to a non-metropolitan area between 1997 and 2004).

In χ^2 analysis, the null hypothesis generates expected frequencies for the combination of categories of the two variables against which the observed frequencies are tested. In other words, the number of females expected to be in the group of returners if there is no relationship between gender and the geographic groups is compared to the actual number of females who are in the group of returners. If the observed frequencies are similar to the expected frequencies, the value of χ^2 is small and the null hypothesis of ‘no association’ or ‘independence’ is retained; if the expected and observed frequencies are sufficiently different, then the value of χ^2 is large and the null hypothesis is rejected. The χ^2 value may indicate an overall association between two variables but does not indicate causation.

The value of χ^2 is calculated using the following equation:

$$\chi^2 = \frac{\sum_{ij} (fo - Fe)^2}{Fe}$$

in which fo represents the observed frequencies in each cell and Fe represents the expected frequencies. Summation is over all the cells in the two-way table. In this way, the difference between the observed and expected frequencies of each cell contributes to the overall value of χ^2 . Because of this, the χ^2 value may be influenced overly by one or two cells in which the difference between the observed and expected frequencies of a particular combination of categories is so great that it contributes the majority of the value to the overall χ^2 .

Cox regression analysis

Cox regression is a form of *survival* or *hazard* analysis that estimates the effects of categorical and quantitative variables on the likelihood that an event will occur. It allows the prediction of a discrete outcome from a set of variables, under the assumption that the hazard of such an event occurring may not remain consistent over the survey period. Cox regression is often employed in medical studies to evaluate the effects of various interventions on the survival rate of patients (hence the somewhat awkward terms ‘survival’ and ‘hazard’). In this report, the term ‘likelihood’ is used in preference to ‘hazard’.

Cox regression combines the proportional hazards model with the partial likelihood method of estimation. The model is summarised by the following equation:

$$h_i(t) = \lambda_0(t) \exp\{\beta_1 x_{i1} + \dots + \beta_k x_{ik}\}.$$

Calculating the hazard (h) of an event occurring for an individual (i) at a given time (t) is the product of two factors:

A baseline hazard function $\lambda_0(t)$ that is left unspecified, except that it cannot be negative; and a linear function of a set of (k) fixed covariates ($x_{i1} \dots x_{ik}$), which is then exponentiated.

The baseline function can be thought of as the hazard function for any individual who has values of zero on all predictor variables ($x_1 \dots x_k$). The focus of Cox's method, however, is evaluation of the effects of predictors on the hazard function, that is, where certain characteristics, such as having left school prior to Year 12 or being a parent, increase or decrease the hazard on an event occurring, *not* on estimating the hazard function itself. Thus, the results of Cox regression allow only comparative statements about hazard— that one group has a hazard that is three times that of another group—not absolute statements about how high or low that hazard may be.

Hazard ratios

The coefficient estimates, similar to beta weights in normal regression analyses, indicate both the direction of the relationship between the variable and the length of time elapsed before an event takes place (either increasing or decreasing the slope of the survival curve). This can then be used to calculate the hazard ratio, which is simply e^{β} .

For indicator or dummy variables in which values are 1 and 0, the hazard ratio can be interpreted as the ratio of the estimated hazard for those with a value of 1 to the estimated hazard of those with a value of zero, controlling for other covariates in the analysis. As an example, in an analysis of returning to a non-metropolitan area, a hazard ratio of 0.65 for a variable 'Parent', in which those who had had children in the previous year were coded as 1 and all others coded as 0, indicates that the hazard (or likelihood) of returning to a non-metropolitan area for those who recently had children is 65 per cent of that for those respondents who did not have children. In simple terms, having had children reduced the likelihood of returning to a non-metropolitan area during the surveyed period.

For numerical variables, the hazard ratio can be used to calculate a change in the relative hazard that is associated with a one-unit change in the variable, taking into account the direction of coding of the dependent variable and the sign of the coefficient. In the analyses of leaving non-metropolitan areas reported here, a change in geographic location is coded as a 1 (from a non-metropolitan location to a metropolitan location) while a lack of a change is coded as 0. For the analyses of returning to a non-metropolitan location, the coding is the same; a change is 1 and no change (remaining in a metropolitan location) is 0. Therefore, any positive coefficients in the analyses of leaving indicate an increase in the likelihood of leaving, while negative coefficients indicate a decrease in the likelihood of leaving (or an increase in the likelihood of remaining in a non-metropolitan area). For the analyses of returning, the interpretation of the relationship between the sign of the coefficient and the direction of the influence is the same; positive coefficients indicate an increase in the likelihood of returning, negative coefficients indicate a decrease in the likelihood. Estimates of the change in the likelihood associated with changes in the numeric variable can be calculated by subtracting 1 from the hazard ratio, and multiplying the result by 100. For example, if a numerical variable in the analysis of leaving a non-metropolitan area has a hazard ratio of 0.413 (suggesting an overall reduced likelihood of leaving), then for every one-unit change in that variable, the probability of leaving decreases by about 60% ($0.413 - 1 = -0.587$).

Adjustment to criterion alpha levels for multiple comparisons

The inclusion of multiple covariates in the Cox regression models presented in this report requires that a Bonferroni type adjustment be made for inflated Type I error. Multiple covariates require multiple comparisons or tests, which reduce the reliability of significance tests if adjustments are not made. The criterion alpha (the probability value that must be met) is set for each covariate so that an alpha for the set of covariates does not exceed some critical value, usually 0.05.

$$\alpha = 1 - (1 - \alpha_1)(1 - \alpha_2) \dots (1 - \alpha_p)$$

The Type 1 error rate (being the likelihood that one would reject the null hypothesis when it is in fact true), or alpha (α) is based on the error rate for testing the first covariate (α_1), the second covariate (α_2), and all the other covariates to the p^{th} , or last, covariate (α_p).

The models presented here include a relatively large number of covariates, up to 13 covariates, requiring that each covariate must meet a stringent alpha level, for example of 0.002, in order that the Type 1 error rate overall remains below 0.05.

APPENDIX 3: SUPPLEMENTARY TABLES

Table A 1 Cox regression results: Influences of background characteristics, school-related variable, post-school plans and current activity variables on the likelihood of leaving a non-metropolitan area, Males

Stage	Variable	Coefficient	Standard error of coefficient	Hazard ratio	Significance	Required significance with Bonferroni adjustment
Block 1	Parent with tertiary qualification	.567	.098	1.763	.000*	.01
	ARIA score	.053	.017	1.054	.002*	.01
	IRSED score	-.001	.001	.999	.493	.01
Block 1 + 2	Parent with tertiary qualification	.411	.101	1.508	.000*	.005
	ARIA score	.057	.017	1.059	.001*	.005
	IRSED score	-.001	.001	.999	.335	.005
	Attitudes to school	.127	.055	1.136	.020	.005
	Mathematics test score	.006	.005	1.007	.224	.005
	Reading test score	.016	.006	1.017	.004*	.005
	Year 12 certificate	.340	.110	1.405	.002*	.005
Block 1 + 2 + 3	Parent with tertiary qualification	.345	.101	1.412	.001*	.005
	ARIA score	.062	.017	1.064	.000*	.005
	IRSED score	-.001	.001	.999	.201	.005
	Attitudes to school	.090	.055	1.094	.102	.005
	Mathematics test score	.002	.005	1.002	.754	.005
	Reading test score	.011	.006	1.011	.048	.005
	Year 12 certificate	.143	.117	1.154	.222	.005
	Plan to attend university	.470	.114	1.601	.000*	.005
	Plan to begin apprenticeship	-.333	.163	.717	.041	.005
	Plan to look for a job	.011	.157	1.011	.946	.005
Block 1 + 2 + 3 + 4	Parent with tertiary qualification	.313	.103	1.367	.002*	.003
	ARIA score	.057	.017	1.058	.001*	.003
	IRSED score	-.001	.001	.999	.337	.003
	Attitudes to school	.057	.054	1.058	.296	.003
	Mathematics test score	.000	.005	1.000	.975	.003
	Reading test score	.010	.006	1.010	.081	.003
	Year 12 certificate	.117	.118	1.125	.320	.003
	Plan to attend university	.293	.118	1.340	.013	.003
	Plan to begin apprenticeship	-.245	.163	.782	.132	.003
	Plan to look for a job	.095	.158	1.100	.547	.003
	University study (full-time)	.428	.125	1.534	.001*	.003
	TAFE study (full-time)	.704	.193	2.021	.000*	.003
	Working (full-time)	-.768	.106	.464	.000*	.003

Notes: Covariates significant at adjusted alpha levels indicated by an asterisk (*).

Table A 2 Cox regression results: Influences of background characteristics, school-related variable, post-school plans and current activity variables on the likelihood of leaving a non-metropolitan area, Females

Stage	Variable	Coefficient	Standard error of coefficient	Hazard ratio	Significance	Required significance with Bonferroni adjustment
Block 1	Parent with tertiary qualification	.374	.079	1.453	.000*	.01
	ARIA score	.052	.015	1.054	.000*	.01
	IRSED score	.000	.001	1.000	.694	.01
Block 1 + 2	Parent with tertiary qualification	.244	.081	1.277	.002*	.005
	ARIA score	.056	.015	1.058	.000*	.005
	IRSED score	.000	.001	1.000	.870	.005
	Attitudes to school	.012	.044	1.012	.791	.005
	Mathematics test score	.017	.005	1.017	.000*	.005
	Reading test score	.017	.005	1.017	.000*	.005
	Year 12 certificate	.134	.102	1.142	.189	.005
Block 1 + 2 + 3	Parent with tertiary qualification	.194	.081	1.214	.017	.003
	ARIA score	.060	.015	1.061	.000*	.003
	IRSED score	.000	.001	1.000	.929	.003
	Attitudes to school	-.014	.044	0.986	.758	.003
	Mathematics test score	.015	.005	1.015	.002*	.003
	Reading test score	.015	.005	1.015	.003*	.003
	Year 12 certificate	.036	.105	1.036	.735	.003
	Plan to attend university	.277	.087	1.319	.001*	.003
	Plan to begin apprenticeship	-.469	.297	0.625	.114	.003
Plan to look for a job	-.293	.168	0.746	.081	.003	
Block 1 + 2 + 3 + 4	Parent with tertiary qualification	.123	.082	1.131	.134	.003
	ARIA score	.058	.015	1.057	.000*	.003
	IRSED score	.000	.001	1.000	.915	.003
	Attitudes to school	.010	.043	1.010	.817	.003
	Mathematics test score	.011	.005	1.011	.018	.003
	Reading test score	.011	.005	1.011	.022	.003
	Year 12 certificate	.030	.108	1.030	.782	.003
	Plan to attend university	.176	.089	1.192	.047	.003
	Plan to begin apprenticeship	-.450	.297	0.638	.130	.003
	Plan to look for a job	-.217	.168	0.805	.198	.003
	University study (full-time)	.468	.097	1.596	.000*	.003
	TAFE study (full-time)	.271	.193	1.311	.160	.003
Working (full-time)	-.727	.093	.484	.000*	.003	

Notes: Covariates significant at adjusted alpha levels indicated by an asterisk (*).

Table A 3 Cox regression results: Influences of background characteristics, school-related variable, post-school plans and current activity variables on the likelihood of returning to a non-metropolitan area, Males

Variable	Coefficient	Standard error of coefficient	Hazard ratio	Significance	Required significance with Bonferroni adjustment
ARIA score	-.015	.028	0.985	.586	.005
Parent with tertiary qualification	-.114	.195	0.893	.560	.005
Year 12 certificate	-.296	.218	0.744	.174	.005
Plan to attend university	.006	.223	1.006	.980	.005
Plan to begin apprenticeship	.029	.311	1.030	.925	.005
Plan to look for a job	.123	.308	1.130	.691	.005
University study (full-time)	.153	.241	1.165	.526	.005
Working (full-time)	-.637	.192	0.529	.001*	.005
Tertiary qualification	-.251	.181	0.778	.166	.005

Notes: Covariates significant at adjusted alpha levels indicated by an asterisk (*).

Table A 4 Cox regression results: Influences of background characteristics, school-related variable, post-school plans and current activity variables on the likelihood of returning to a non-metropolitan area, Females

Variable	Coefficient	Standard error of coefficient	Hazard ratio	Significance	Required significance with Bonferroni adjustment
ARIA score	-.031	.027	0.969	.251	.005
Parent with tertiary qualification	.096	.143	1.101	.503	.005
Year 12 certificate	-.317	.171	0.729	.064	.005
Plan to attend university	-.240	.149	0.787	.108	.005
Plan to begin apprenticeship	-.710	.592	0.492	.231	.005
Plan to look for a job	.253	.268	1.288	.345	.005
University study (full-time)	-.012	.181	0.988	.947	.005
Working (full-time)	-.525	.150	0.592	.000*	.005
Tertiary qualification	-.476	.135	0.622	.000*	.005

Notes: Covariates significant at adjusted alpha levels indicated by an asterisk (*).