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Understanding contemporary demographic and economic drivers of household mobility and their policy implications

From the AHURI Inquiry: Inquiry into projecting Australia's urban and regional futures: population dynamics, regional mobility and planning responses

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Contents

List of tables

List of figures

List of boxes

Acronyms and abbreviations used in this report

ABS   Australian Bureau of Statistics

ACT   Australian Capital Territory

ADA   Australian Data Archive

AHURI   Australian Housing and Urban Research Institute Limited

ASGS   Australian Statistical Geography Standard

GCCSA   Greater Capital City Statistical Area

HILDA   Household, Income and Labour Dynamics in Australia survey

LDA   Linear discriminant analysis

NSW   New South Wales

QLD   Queensland

SA   South Australia

VIC   Victoria

WA   Western Australia

Glossary

A list of definitions for terms commonly used by AHURI is available on the AHURI website ahuri.edu.au/glossary.

Executive summary

- This research is part of a wider AHURI *Inquiry into Projecting Australia's urban and regional futures: population dynamics, regional mobility, and planning responses*. The study responds to the overall Inquiry research question: what are the contemporary demographic and economic drivers of regional mobility in the Australian states and territories?

- The research identifies some notable shifts in regional mobility patterns since the early 2000s. While migration from capital cities to regional areas became a topic of intense public interest during the Covid-19 lockdowns of 2020-2021, the analysis shows that this trend predates the lockdown era by more than a decade, with the number of out-migrants from capital cities exceeding in-migrants for every year since 2007, except 2013.

- Other popular perceptions regarding regional migration patterns are borne out by the analysis. In particular, the research confirms that the key drivers of regional migration reflect established trends, with employment as the largest driver of migration to capital cities, and lifestyle the most common reason for migration away from capital cities to regional areas. However, some variations emerged by state; for example, in Western Australia the most prominent reason for moving out of cities was employment (at 31%), which is much higher than the national average.

- The growing role of 'sea-change' or 'tree-change' lifestyle migration to regional areas is also evident from the analysis, which shows a significant increase in the proportion of higher-income groups among out-migrants from the capital cities from 2014 onwards, once again predating the Covid-19 lockdown era.

- While Australia's population remains predominantly clustered in its capital cities, the research highlights some emerging regional migration hubs, which are now attracting increasing migration from both capital cities and regional areas. Of particular note is Newcastle in New South Wales. This pattern points to the possibility of significant growth in some key regional centres in coming years.

- The research identified a range of incentive policies that are designed to encourage regional migration. However, these are largely focused on targeting key workforce areas (health professionals and primary/secondary educators). While regional shortages of these workforces are well documented, the review highlights opportunities to use incentive policies to also target industries that will help to support regional growth (e.g. planning, construction, infrastructure). There are also opportunities to develop more specific policy mechanisms that complement a place-based approach to managing and encouraging population growth in regional areas.

Key findings

- Since 2007, the number of out-migrants from capital cities has been higher than that of in-migrants to capital cities, except in 2013. The disparity was apparent in 2020 when COVID-19 lockdowns were implemented in Australia.

- While Australian states are dominated in population by their capital cities, there have been notable shifts in regional migrant clusters from 2016 to 2021. For instance, in New South Wales, Newcastle emerges as a significant migration cluster.

- Out-migrants from capital cities had higher household net worth and income than in-migrants to capital cities, and were older than in-migrants. The proportion of higher-income groups among out-migrants has significantly increased since 2014, well before the COVID-19 pandemic.

- Significantly more in-migrants to capital cities rent rather than buy after their move, while out-migrants from capital cities are about equally likely to rent or buy after their move.

- In-migrants are generally younger, with lower household incomes and net worth, compared to out-migrants, which may reflect the 'sea- change' and 'tree- change' phenomena.

- A notable finding is that an increase in higher-income out-migrants from capital cities has been evident since 2015, pre-dating the COVID-19 pandemic.

- For in-migrants to capital cities (2002-2020), the most common reason for moving was employment (27.9%), followed by personal reasons (25.4%), housing (15.8%), lifestyle (14.9%), education (11.8%) and health (3.3%).

- Reasons for in-migration varied by state. For instance, Victoria has a markedly higher percentage of education-related migration (21.03%) than the national average (12.15%).

- For out-migrants from capital cities (2002-2020), the most common reason for moving was lifestyle (27.8%), followed by personal reasons (25.2%), housing (21%), employment (19.8%), education (3.2%), and health (2.6%).

- Reasons for out-migration also varied by state. For instance, in Western Australia, the most prominent reason for moving out of cities was employment at (31%), which is much higher than the national average.

- Multivariate data analysis shows that mortgage repayments, household income, age, housing, hours worked per week and family reasons were important factors in differentiating the in-migrant and out-migrant groups.

- Current incentive policies to attract and retain regional populations have a strong focus on targeting key workforce sectors, particularly health workers and school-level educators. Policies are similar across states.

- Many existing incentive policies target both attraction and retention, although new migrants may receive additional benefits to cover extra costs such as relocation costs.

Policy development options

The research findings suggest a number of approaches governments could pursue if they wish to encourage continued growth in migration from capital cities to regional areas. These include:

- Improve the diversity of housing and reduce the cost of housing in regional areas. Possible mechanisms including increasing the supply of developable land and the availability of social and affordable housing in regional areas, particularly those experiencing higher-income migration.

- Improve regional access to higher education by expanding university campuses in regional centres and including online/hybrid learning options.

- Improve employment opportunities and strengthen incentives for key high-value industries such as construction and education, along with emerging and growing industries such as renewable energy.

- Improve access to amenities and services for regional communities, including both access to capital cities through improved transport and access to regional amenities and services.

- Ensure adequate support for retiree migration to regional areas through affordable housing policies and incentives to attract healthcare and aged-care workers to the regions.

- Governments should consider expanding incentive schemes for industries necessary for high-value, sustainable regional growth such as urban planning, construction, higher education, incubator schemes and renewable energy.

- There are opportunities for policy innovation to target different workforce sectors in different regional areas, in line with the principles of place-based policy development.

The study

The aim of the study was to examine the migration patterns between capital cities and regional areas across Australia over recent decades, and identify key socio-economic, demographic and policy drivers shaping these migration patterns.

To address this aim the study involved three key components:

- Identifying and visualising changing migration patterns between cities within states over 10 years, using data from the Australian Bureau of Statistics Census 2011, 2016 and 2021;

- a micro-behavioural analysis of in-migrants to capital cities and out-migrants from capital cities within each state and their motivations, using the restricted release of the HILDA dataset 2001–2020

- a desk-top review of over 100 state and federal government incentive policies to identify patterns that may contribute to observed migration between capital cities and regional areas.

1. Introduction: Population distribution, migration patterns and household location decisions

- **This project examined changing spatial migration patterns between urban and regional Australia, and identified the demographic, economic and policy drivers of household mobility.**

- **Using quantitative techniques, the research identified differences between in-migrants to capital cities and out-migrants from capital cities by household behavioural factors.**

- **The study investigated how national, state and local policy settings may influence population dynamics.**

1.1   Introduction

In Australia, a high proportion of the population of each state live in the state's capital city. Over half of Australia's urban population (54.2%) lives in the two largest cities, Sydney in New South Wales and Melbourne in Victoria. Australia has few mid-sized cities according to the United Nations (UN) definition of 500,000 to 1 million inhabitants.

Patterns of population growth in Australia have raised important questions about which cities will experience high levels of population growth, and what types of infrastructure and services will be needed to support these communities (Beer, Crommelin et al. 2022; Beer and Clower 2009). The challenges of managing high levels of growth in the capital cities have regularly prompted policy makers to explore the possibility of rebalancing population patterns by encouraging growth in regional areas. For example, the first term of reference for a major parliamentary inquiry on regional development in 2018 was to identify 'best practice approaches to regional development … that support … growing and sustaining the rural and regional population base'. As the foreword to the Inquiry's final report noted (2018: iii), 'as Australia battles to deal with its centralised population and the congestion caused by having over 40 per cent of its population living in its two biggest cities, the realisation is stark; we have to take a different approach to growing our regions if we want to achieve a different outcome'. The report concluded that 'growing, attracting and retaining population is paramount to regional development initiatives' (2018: 36). More recently, the Australian Government has reiterated its desire to see population growth in regional areas, with the 2024 State of the Regions report noting that 'people are at the heart of regional Australia. By providing opportunities—and fostering vibrant and inclusive communities—more people can call regional Australia home' (Australian Government 2024: 12).

Despite these aspirations, government policies focussed on retaining and growing populations in regional Australia have struggled to overcome the lack of long-term employment opportunities beyond major metropolitan centres (Argent and Tonts 2015; Hugo 2008). The concentration of employment in Australia's state capital cities has long explained the nation's economic geography, with international migrants and younger people searching for jobs or education opportunities settling in the major population centres.

While these broad trends are expected to persist, less is known about the household-level drivers of urban and regional migration, influenced by individual preferences for particular housing, neighbourhood, lifestyle and locational characteristics, as well as their socio-economic and demographic characteristics (Australian Government 2020). For instance, the recent COVID-19 pandemic has highlighted how housing preferences can significantly impact household decisions to relocate to regional areas, especially with the introduction of more flexible work opportunities. Understanding how migration decisions are influenced by a person's age, life stage and household characteristics is important, and extends beyond a simple calculus of maximising employment prospects.

Furthermore, while the dominant migration patterns in Australia have generally reinforced population growth in state capital cities, a closer examination reveals more intricate mobility patterns within and between urban and regional locations. Understanding the composition and dynamics of population inflows and outflows between Australia's capital cities and regional areas is significant for accurate population prediction, housing provision, effective planning, and supporting regional growth and transformations.

The importance of understanding the drivers of migration between urban and regional areas is indicated by the significance of migration to population change in both the capital cities and regions. For example, from 2011 to 2016, net internal migration was a greater contributor to population change in non-metropolitan Victoria, Western Australia, South Australia and Tasmania than natural increase (Simon-Davies 2018). Moreover, internal migration is more variable and affected by a greater range of factors than natural increase—and many of the factors are amenable to public policy influence. Given the significance and variability of regional migration flows, better understanding of its composition and dynamics will improve regional population prediction, and thus improve planning for housing and infrastructure. Capital cities have two-thirds of the national population and economic activity, which influences internal migration between the regions and the capital cities. Australia's lack of mid-sized cities means that economic opportunities outside the capital cities are more limited, constraining migration choices outside the metropolitan areas.

1.2 The dominance of Australia's state capital cities

Each Australian state is characterised by a dominant 'primate' city (its state capital city), numerous smaller cities and towns, and an absence of intermediate-sized urban centres (Jefferson 1989). Table 1 summarises the population distribution. This distribution differs from the typical urban structures in advanced economies of the United States, United Kingdom and Japan, which often have a polycentric urban structure (London 1977; Veneri 2016). Australia's distribution is attributed to a sparsely distributed small population, high transport costs and government policies that encourage the concentration of population in a few cities on a regional basis (Ellis and Andrews 2001).

Table 1: Summary of population distribution by state, 2021

State	Capital city	State pop. (million)	Capital city* pop. (million)	% of state pop. in capital city	Second- largest city in state	Pop. in top 10 cities (after capital)	% of state pop. in top 10 cities (after capital)
New South Wales	Sydney	8 m	5.3 m	66%	322,220 (Newcastle)	1,256,162	18%
Victoria	Melbourne	6.5 m	5 m	77%	157,103 (Geelong)	603,087	4%
Queensland	Brisbane	5.2 m	2.6 m	50%	540,554 (Gold Coast)	1,469,981	27%
South Australia	Adelaide	1.8 m	1.4 m	78%	26,470 (Gawler)	178,649	9%
Western Australia	Perth	2.7 m	2.2 m	81%	71,094 (Bunbury)	250,554	9%
Total: Australia		25.4 m	17.5 m	69%	n.a.	n.a.	n.a.

Source: ABS Census 2021.

*Note: *Capital city population is based on the Greater Capital City Statistical Area (GCCSA), as defined by the ABS.*

Based on data from the 2021 ABS Census, figures A1 to A5 in Appendix 1 show the distribution of city size in the five largest states. Notably, the largest city in New South Wales, Sydney, is approximately 13 times larger than the second-largest city, Newcastle.

It is important to note that the definitions of the capital cities vary, and the proportion of the state population in the top 10 cities after the capital cities may exaggerate the 'skewness' of the distribution. To address this issue, we used a log population scale to compare the distributions of city sizes of each state by top 10 cities including the capital cities. Figure 1 shows the rank-size relationship among the five states and compares their distribution patterns. A linear pattern, such as in Queensland, shows a well-balanced distribution, while an L-shape, such as in South Australia and Western Australia, represents an unbalanced distribution. Queensland has a more balanced population distribution across its cities and towns. After the capital city of Brisbane, it has two mid-size cities (Gold Coast and Sunshine Coast) with populations of over 200,000.

Figure 1: Rank-size patterns by state, 2021
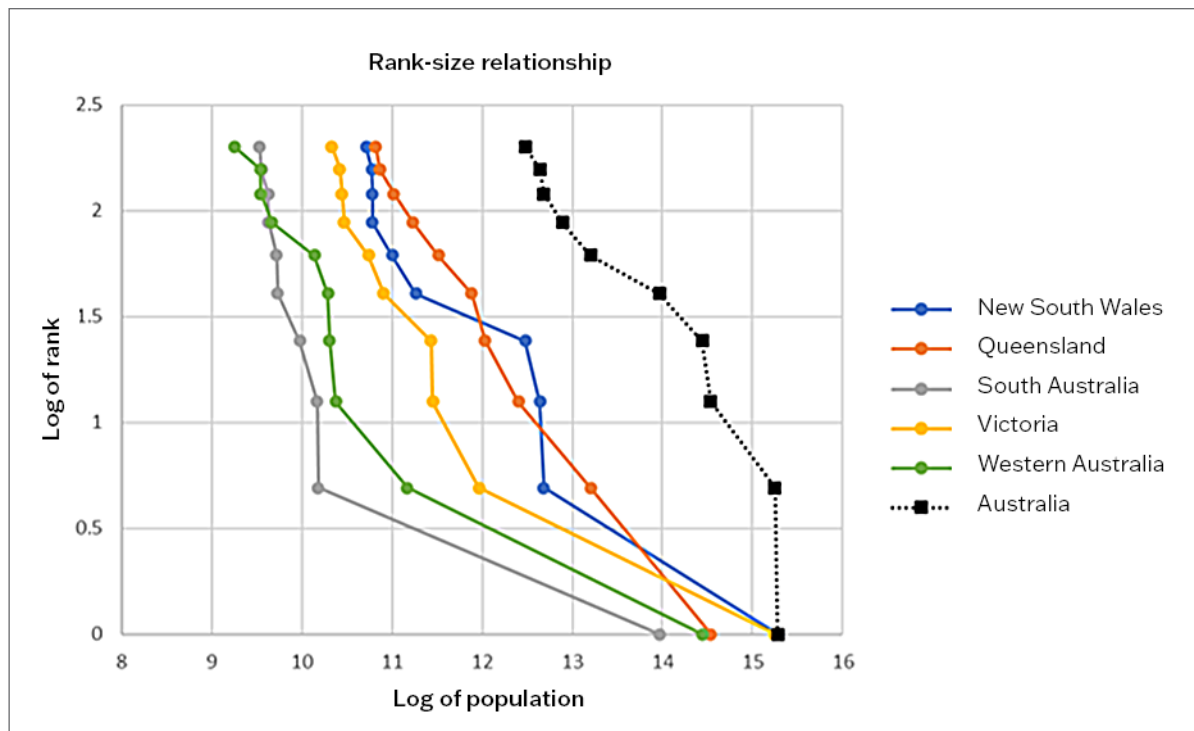
Source: ABS Census 2021.

Note: Cities are defined as Statistical Area 3 (SA3). See Appendix 1 for discussion of rank size.

1.3 The role of accessibility in growth and migration

1.3.1 Origin of Australia's dominant state capital cities

Australia's dominant capital cities are a legacy from the nineteenth century, when colonial governments focussed the rail networks on the colonial (state) capital cities and government administration. Wool and other rural exports—the basis of the colonial economies—were focussed on the capital cities, which meant the processing of rural production was also concentrated in the capitals. By 1900, the capitals were already much more extensive than each state's next most significant urban area, markets and labour force. The advantages of dominant size in each state have meant that economic restructuring and the emergence of the knowledge economy have continued to favour the capital cities. This form has many implications, mainly related to uneven in-migration to and out-migration from capital cities.

1.3.2 Growth of dominant state capital cities

Generally, capital cities tend to disproportionally attract new residents, becoming larger in the process. In many ways, due to the multitude of pull factors and self-reinforcing growth patterns, the capital cities obstruct regional growth. The sheer size, economic, cultural and educational opportunities offered by large cities become a strong pull factor, bringing additional residents to the city and causing the capital city to become even larger and more disproportionate to smaller cities (Rosenberg 2020). The growth process is seen as self-reinforcing rather than self-correcting, increasing regional inequalities through a circular-cumulative process (Martin 2016). The result is what Guaralda, Hearn et al. (2020) have described as a 'winner takes all' pattern of urban agglomeration, with the major cities absorbing the large majority of the nation's overall population growth.

Internal migration refers to people moving to a new place, driven by various factors such as political, religious, demographic, social-economic and environmental considerations (Castelli 2018). Recognising this self-reinforcing process, policy makers and planners in Australia have at various times shown interest in focussing policy efforts on facilitating the growth of medium-sized towns, with the goal of taking 'pressure' off the state capital cities and promoting sustainable growth in regional areas facing labour shortages (Hugo 2008; Vij, Ardeshiri et al. 2022). However, implementation and coordination of these policy goals have often been inconsistent and uncoordinated (Bolleter, Freestone et al. 2021; McGuirk and Argent 2011), and policy innovation in this space has often been 'ad hoc' (Dufty-Jones and Wray 2013).

Some scholars have raised questions about the ability of such strategies to make a meaningful difference in population growth levels in capital cities (Crommelin, Denham et al. 2022). Instead, they call for regional growth strategies to be underpinned by the goal of supporting the needs and interests of existing regional populations and providing a range of living opportunities for different segments of the population, rather than being seen primarily as a pressure valve for the nation's fast-growing capital cities.

1.3.3 Accessibility and migration

The literature suggests that places with higher accessibility to urban services and infrastructure attract both businesses and residents. Accessibility provides significant agglomeration benefits to businesses; this increases the productivity of workers, which is then reflected in higher per capita wages (Melo, Graham et al. 2017), shorter commute distances (Levinson 1998) and lower business operating costs (Fujita and Thisse 1996). Since per capita income drives internal and international migration (Etzo 2008), accessibility influences wage-driven migration. Transport investment that increases accessibility confers substantial economic benefits (Graham 2007). Accessibility also plays a significant role in the relocation decision of firms. A large-scale survey of company relocation decisions in Australia also identified accessibility, both in terms of public transport and road transport, as a significant factor in company location decisions (Balbontin and Hensher 2019).

Access to jobs is fundamental to household location decisions, as it provides employment opportunities and access to urban amenities. Households tend to locate near major employment centres with high accessibility—although this preference is often constrained by housing affordability (Alonso 2013; Kim, Pagliara et al. 2005). Individual preferences for better accessibility influence land-use changes, as evidenced by theoretical frameworks (Alonso 2013) and empirical evidence (Gibbons and Machin 2005; Iacono and Levinson 2017), emphasising the increased demand for residential land in areas with greater accessibility. Vacant land with better accessibility also has a higher likelihood of residential development (Hanson 1959).

At the metropolitan level, cities with superior accessibility tend to have larger populations. A comparison study with the population size of 117 cities from 16 countries globally found a positive correlation between accessibility and population size (Wu, Avner et al. 2021). Although population size tends to intensify congestion and reduce accessibility, the study by Wu, Avner et al. (2021) suggests that cities with a large population still retain accessibility, contributing to population growth.

In summary, accessibility has a significant impact on migration for businesses and people. Businesses relocating to places with higher accessibility benefit from agglomeration effects, improve productivity and are able to pay higher wages and attract a skilled workforce, leading to the clustering of job and housing opportunities in accessible locations. Similarly, people's residential choices are based on access to better housing, education opportunities, health services and living amenities. For instance, a mismatch between desired and actual accessibility in the current location generates dissatisfaction and increases the propensity of people to move to other cities where they can access better housing, job and education opportunities (Beer and Faulkner 2009; Han and Kim 2017). This establishes accessibility as a potential centripetal force driving migration.

1.4   Research problem and methods

The research problem is the need to better understand patterns of migration to and from Australia's state capital cities. Understanding regional migration and growth requires consideration of both mobility patterns and population growth at the macro level, and behavioural adjustments induced by individual preferences, satisfaction and socio-economic and demographic characteristics at the micro level.

This project examines migration patterns of in-migrants to and out-migrants from capital cities, focussing on the driving forces of migration, as reported by migrants, including housing, employment, education and service accessibility.

This study has three components:

- Identifying and visualising changing migration patterns within states, 2011–2021, using data from the ABS Census.

- Conducting a micro-behavioural analysis of in-migrants and out-migrants and their motivations, using the restricted release of the 2001–2020 HILDA dataset.

- Analysing government policies to identify existing policy settings that may contribute to observed inflows and outflows between capital cities and regional areas.

This multi-faceted approach allows for a more nuanced understanding of population dynamics and provides critical insights into the policies that impact migration patterns.

1.4.1   Identifying changing migration patterns, 2011–2021

ABS Census data from 2016 and 2021 was used to generate an origin and destination matrix based on an individual's current and previous residences (five years ago) for selected cities and towns in New South Wales, Victoria, Queensland, South Australia and Western Australia. The ABS Greater Capital City Statistical Areas (GCCSAs) were used to define the geographical areas, which are constructed from Statistical Areas Level 4 (SA4). Table 2 shows an indicative matrix with the origins and destinations of movers within Australia, based on SA4 regions. Each row represents an origin city, and each column represents a destination. The GCCSAs aim to delineate the functional extent of each state and territory capital city and are the largest sub-state regions in the Australian Statistical Geography Standard (ASGS) (ABS 2021). Matrices are presented in Appendix 2.

The structure of the origin and destination matrix focuses on the flow of migration between different regions within each state. The diagonal numbers in the matrix are significantly higher than the others, indicating a more significant proportion of individuals who relocated within the same cities.

Table 2: Indicative origin and destination matrix for migration patterns

Cities and regional centres		Migrant Destinations (SA4)				
		R_1	R_2	R_j	…	R_n
Migrant Origins (SA4)	R_1	X_{11}	X_{12}	X_{1j}	…	X_{1n}
	R_2	X_{21}	X_{22}	X_{2j}	…	$X2_n$
	R_i	X_{i1}	X_{i2}	X_{ij}		X_{in}
	⋮	⋮	⋮	⋮		⋮
	R_n	X_{n1}	X_{n2}	X_{nj}	…	X_{nn}

Source: Authors

Note: SA4 refers to boundaries that represent labour markets and the functional area of Australian capital cities. See Appendix 2 for all matrices.

To visualise the geographic patterns of migration, we used a social network analysis, specifically focussing on measuring the degree of modularity based on the matrix. The modality network analysis allowed us to assess the geographic structure of migrant movements within each state and visualise these movements by graphs.

The gravity-based graphs helped assess the strength of geographic locations (e.g. cities and towns), grouping them into clusters. Networks with high modularity have dense connections between cities within the same migration cluster while having sparse connections between cities in different clusters (Jacomy, Venturini et al. 2014). The modularity analysis aimed to visually depict and visually identify interregional migration patterns within regional networks.

1.4.2   Conducting micro-behavioural analysis of migrants

For the micro-behavioural analysis of migrants, we used the restricted release of the 2001–2020 HILDA dataset. HILDA included all moves over the past two decades (2001–2020) and individuals who moved at least once were selected for analysis. A person-period dataset was created, combining individual household records for 20 waves of the HILDA survey, which allows us to track household movements over 20 years. These moves were then sorted by in-migrants to and out-migrants from the capital cities using R programming language. People moving from a regional area to a greater capital city area within the same state are classified as 'in-migrants' and people moving out of a capital city area are classified as 'out-migrants'.

The variables, data collection and manipulation methods are described in Appendix 3. A total of 410,658 person-period records were obtained, with 1,874 in-migrants and 2,230 out-migrants.

The analysis compared in-migrants and out-migrants in terms of housing tenure, dwelling type, age, income, health status, reasons for move, and job satisfaction after their move.

1.4.3   Identifying migration-focussed policy settings

The project reviewed existing policy settings that may influence household decisions to move between capital cities and regional areas. A detailed desktop review of current federal and state/territory policies was undertaken through a systematic review of key government websites. This review identified key categories of policies that aim to influence moves between a capital city and regional areas. These key categories were then reviewed alongside the findings of the other studies to provide insights into how well these policy types align with actual migration patterns between a capital city and regional areas.

1.4.4   Ethics approval

This project used the secondary data of the ABS Census 2016 and 2021 and HILDA, and did not collect primary data. Under the University of New South Wales human research ethics guideline, we submitted the Notification of Research Involving Publicly Available Datasets for HILDA. Additionally, we were required to apply for the HILDA Restricted Release 20 dataset from the Australian Data Archive (ADA), and the application (ref#726744) was approved on 30 June 2022.

1.5   Structure of report

Chapter 2 presents the analysis of migration patterns using ABS Census data.

Chapter 3 presents the housing and socio-economic characteristics of the migrants who moved to and from capital cities in Australia based on HILDA data.

Chapter 4 presents the micro-behavioural analysis using HILDA data, focussing on motivations for moving.

Chapter 5 presents the analysis of migration incentive policies.

Chapter 6 discusses policy implications of the findings.

Appendices 1–4 provide additional information and supplementary data.

2. Migration patterns by state, 2011–2021

- **This chapter uses a modality network analysis that visualises the migration patterns by their origins and destinations.**

- **The modality network analysis shows the importance of migration dependency on the major cities.**

- **The modality network analysis shows notable shifts in regional migrant clusters over the period 2016–2021.**

- **Newcastle emerges as a significant migration cluster in New South Wales.**

2.1 Network analysis by movers' origins and destinations

This section uses 2016 and 2021 ABS Census data to generate the origin and destination matrix for each state for two time periods, based on an individual's current and previous places of residence. However, it was challenging to discern clear geographic migration patterns from the set of origins and destinations matrices (see Appendix 2). We used modality network analysis to visualise the significant migration flows, as described in Section 1.4. Migrant flows tend to cluster regionally, with multiple cities or towns and a smaller number of cities or towns connecting different clusters. The following analyses explore the dynamics of regional migration networks and highlight the emergence of migration clusters in the five largest states: New South Wales, Victoria, Queensland, South Australia and Western Australia.

For each figure for each state, the size of each arrow reflects the migration volume, which is assigned by the absolute number of migrants between cities. The thickness of the line represents the intensity of migration flows between different nodes (cities). Green lines identify clusters within the migration network, while red lines identify other groups of nodes with similar migration patterns.

New South Wales

Figure 2a shows the interregional migration patterns in New South Wales 2011–2016 and 2016–2021. It shows that Sydney and Newcastle are the most significant origins and destinations in New South Wales. However, it is difficult to identify the changing migration patterns across cities and towns as it does not consider the degree of dependency of migration on specific origins and destinations.

For instance, individuals living in small cities in regional areas are more likely to move to major cities than to neighbouring small cities. Furthermore, certain mid-size cities depend more on a specific major city—such as a capital city—as their migration destination than others. To account for these complexities, a modality network analysis was also used to re-visualise the migration patterns.

Figure 2b re-visualises Figure 2a using the modality network analysis. In this analysis, the distance between cities does not represent physical distance but indicates the relative dependence of cities and towns as migration origins and destinations. For instance, despite Newcastle being physically closer to Sydney than to Port Macquarie, the modality network analysis shows that Port Macquarie is more dependent on Sydney as a migration destination than Newcastle is. The modality network illustrates the importance of migration dependency when considering regional development.

Figure 2a: NSW: Changing migration patterns, 2011–2016 (left) and 2016–2021 (right)
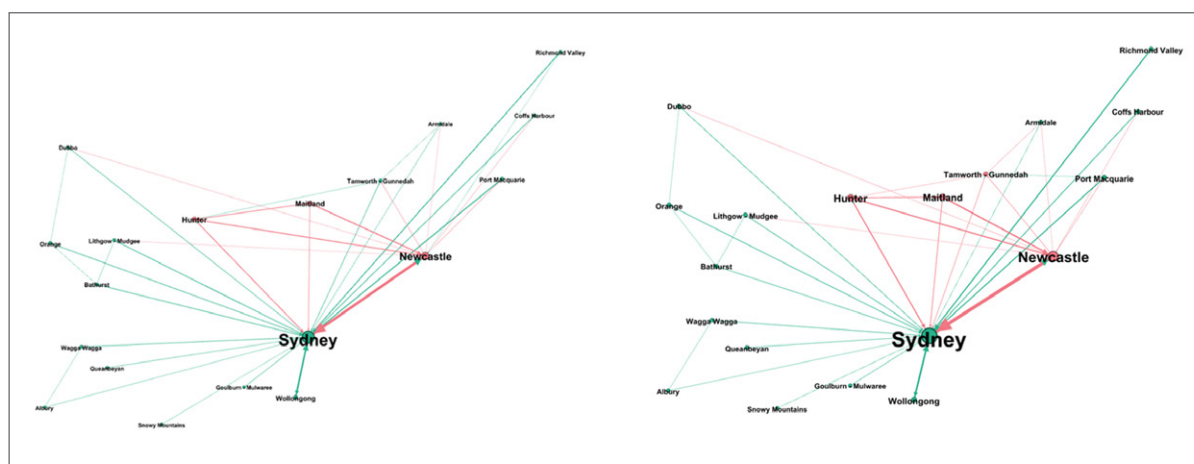
Source: ABS Census 2016 and 2021.

Notes: A thicker line represents a higher volume of migration between two places, and a thinner line represents a lower volume of migration. Based on the degree of the dependency, the network analysis clusters two groups of the migration each representing the 'red' and 'green' lines. Green nodes identify clusters within the migration network, while red nodes identify other groups of nodes with similar migration patterns.

Figure 2b: NSW: Modality networks for migrants, 2011–2016 (left) and 2016–2021 (right)
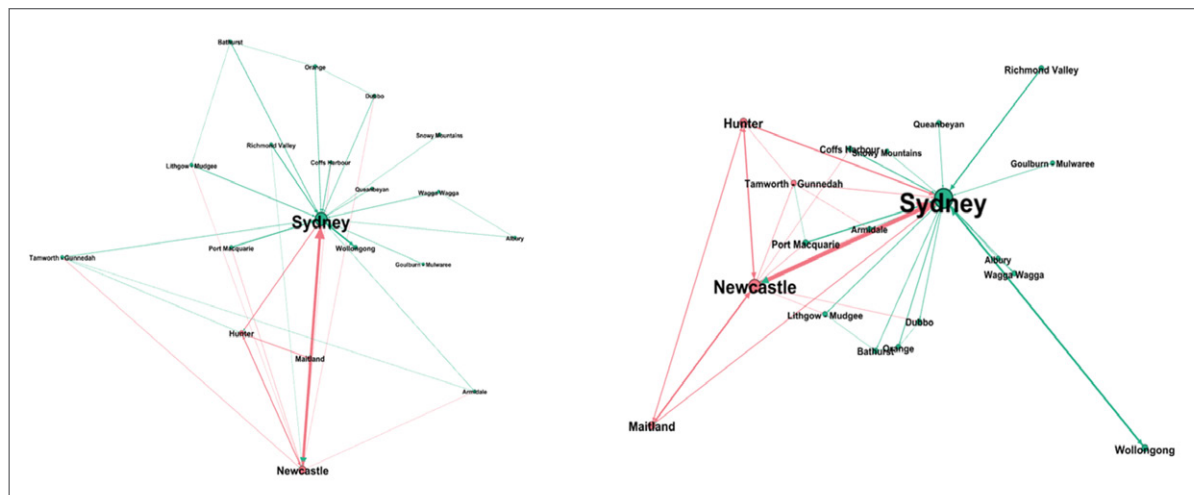
Source: ABS Census 2016 and 2021.

Note: The figures are redesigned to show a migration dependency between two places regardless its physical distance. A shorter line represents a higher dependency of the origins on the destinations in the migration decision.

The modality network analysis shows significant changes in migrant clusters in New South Wales (see Figure 2b). The Tamworth–Gunnedah area (e.g. Namoi region) changed from a 'green' cluster in 2011–2016 (left map) to a 'red' cluster in 2016–2021 (right map) on Figure 2b due to a significant population shift. In the five years to 2016, many people migrated from the region to Sydney, but in the five years to 2021, a new trend had emerged where people were actively moving to Newcastle instead. This led to a larger regional cluster forming, including Newcastle, Maitland, Hunter and Tamworth–Gunnedah.

A new green line connecting Tamworth, Gunnedah and Port Macquarie has been added to the map in 2021, indicating a new migration route. Just as Tamworth–Gunnedah became part of the larger Newcastle cluster, it is likely that Port Macquarie will also become part of the same cluster in the future, with people moving from Sydney to Newcastle.

The line connecting Richmond Valley and Newcastle has disappeared from the network analysis between the two timeframes, indicating that the migration dependency between these two areas is weakening. While this is not evident in the visualisation, given Richmond Valley's geographical proximity to Queensland, the population is expected to move north towards Gold Coast or Brisbane. The analysis suggests that there has been an increase in the population shift from Armidale to Sydney. However, Armidale will likely be incorporated into the emerging Newcastle cluster.

Victoria

Figures 3a and 3b show migration networks in Victoria. Notably, the connection line between Upper Goulburn Valley and Wangaratta–Benalla disappeared in the period 2016–2021, indicating that the population movement between these regions is becoming less significant compared to other regions or the capital city Melbourne.

The connection between Bendigo and Shepparton and between Geelong and Shepparton has disappeared, suggesting a decrease in population migration with Shepparton and the development of regional isolation in the area.

The Glenelg–Southern Grampians and Warrnambool, Colac–Corangamite lines have changed from green to red, reflecting the formation of a regional cluster for population movement.

The line between Southern Grampians and Ballarat has disappeared, indicating a decrease in connectivity with Ballarat as population mobility between Glenelg–Southern Grampians and Warrnambool, Colac–Corangamite has strengthened.

The Murray River–Swan Hill line has changed colour from green to red, indicating the formation of a population migration cluster unit with Bendigo, Heathcote–Castlemaine, and Kyneton.

Figure 3a: Victoria: Changing migration patterns, 2011–2016 (left) and 2016–2021 (right)
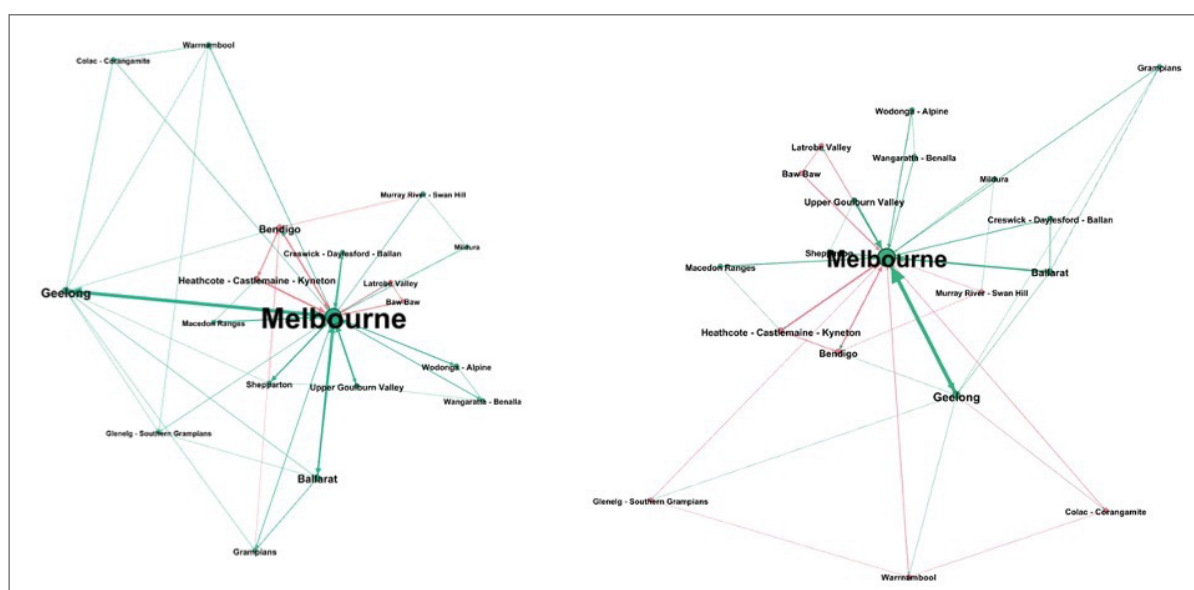
Source: ABS Census 2016 and 2021.

Note: See notes for Figure 2a.

Figure 3b: Victoria: Modality networks for migrants, 2011–2016 (left) and 2016–2021 (right)
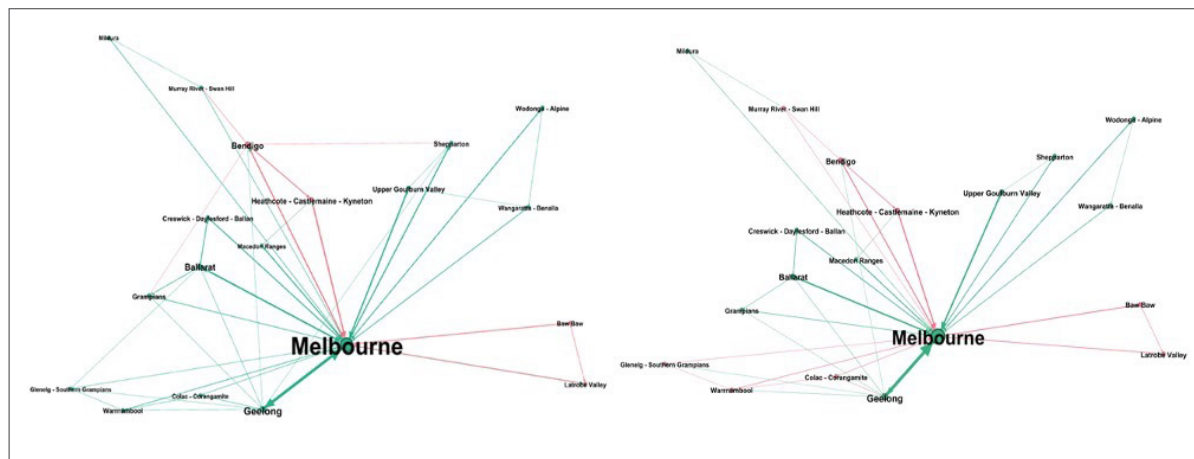
Source: ABS Census 2016 and 2021.

Note: See notes for Figure 2b.

Queensland

In Figure 4a and Figure 4b, the colour of the line between Maryborough and Hervey Bay has changed from green to red, indicating that population movement between these two regions is becoming more closely associated because of the increased frequency of population movement between these regions and the capital city Brisbane.

The connection line between Toowoomba and Townsville has changed from red to green, reflecting the more significant influence of Townsville on Toowoomba, as there has been a shift in population movement from Townsville south to Toowoomba.

New Gold Coast and Sunshine Coast lines have been added, while the Gold Coast and Mackay lines have disappeared. This indicates a significant increase in population movement between Gold Coast and Sunshine Coast, and a decrease between Gold Coast and Mackay.

The disappearance of the Sunshine Coast and Cairns, Townsville, and Mackay lines and the relative increase in population movement between the Sunshine Coast and Brisbane has resulted in changes in the population movement of Cairns, Townsville, Mackay and Gladstone.

The Cairns and Mackay line has disappeared, indicating decreased population movement between these regions. Similarly, the Townsville and Rockhampton line has also disappeared, reflecting decreased population movement between these regions.

Figure 4a: Queensland: Changing migration patterns, 2011–2016 (left) and 2016–2021 (right)
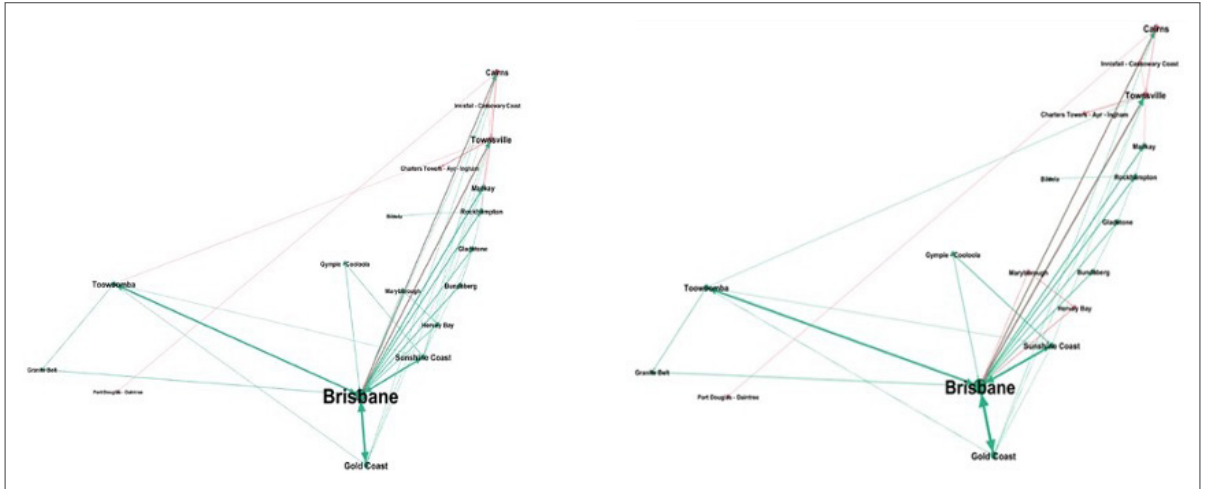
Source: ABS Census 2016 and 2021.
Note: See notes for Figure 2a.

Figure 4b: Queensland: Modality networks for migrants, 2011–2016 (left) and 2016–2021 (right)
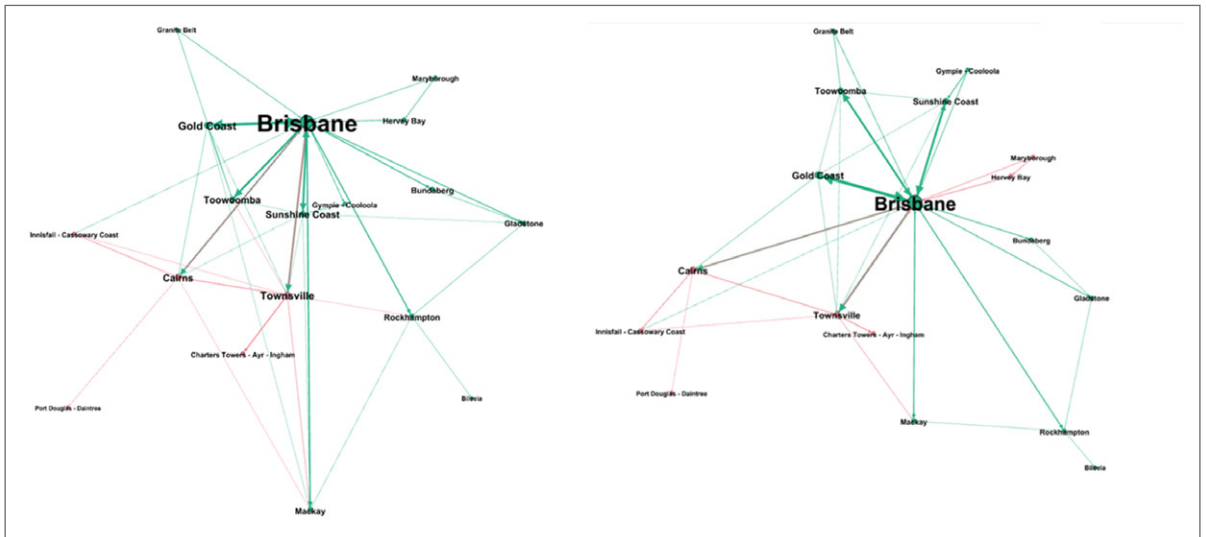
Source: ABS Census 2016 and 2021.
Note: See notes for Figure 2b.

South Australia

In South Australia, the connection between Eyre Peninsula and South West and Outback–North and East, and the connection between Murray and Mallee and Limestone Coast have disappeared between 2011–2016 and 2016–2021, indicating a decrease in population movement between regions and a shift towards population movement from other regions to the capital city Adelaide (Figures 5a and 5b). However, given the sole dependency of Adelaide, no other cluster is observed.

Figure 5a: South Australia: Changing migration patterns, 2011–2016 (left) 2016–2021 (right)
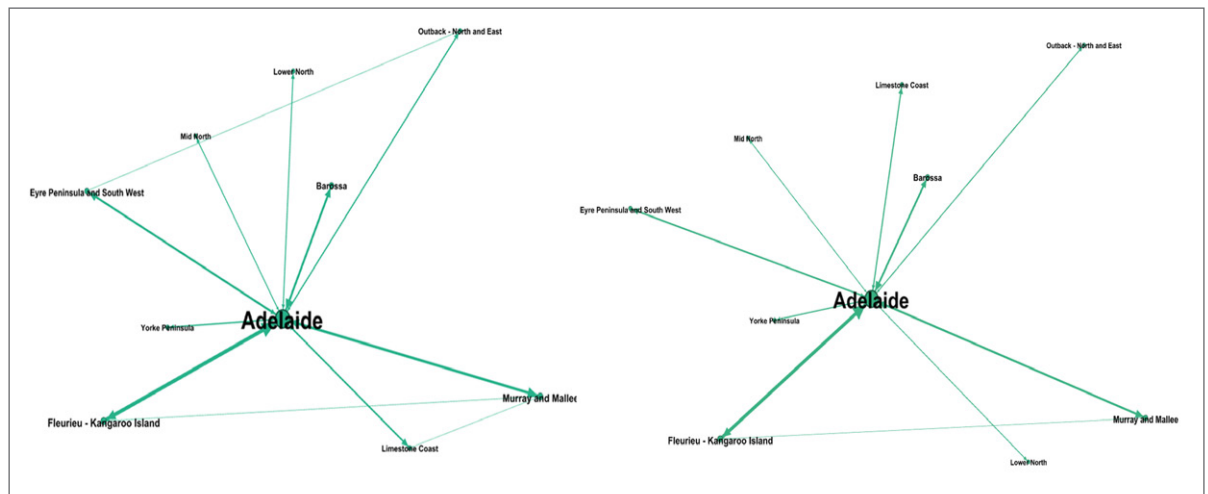
Source: ABS Census 2016 and 2021.

Note: See notes for Figure 2a.

Figure 5b: South Australia: Modality networks for migrants, 2011–2016 (left) and 2016–2021 (right)
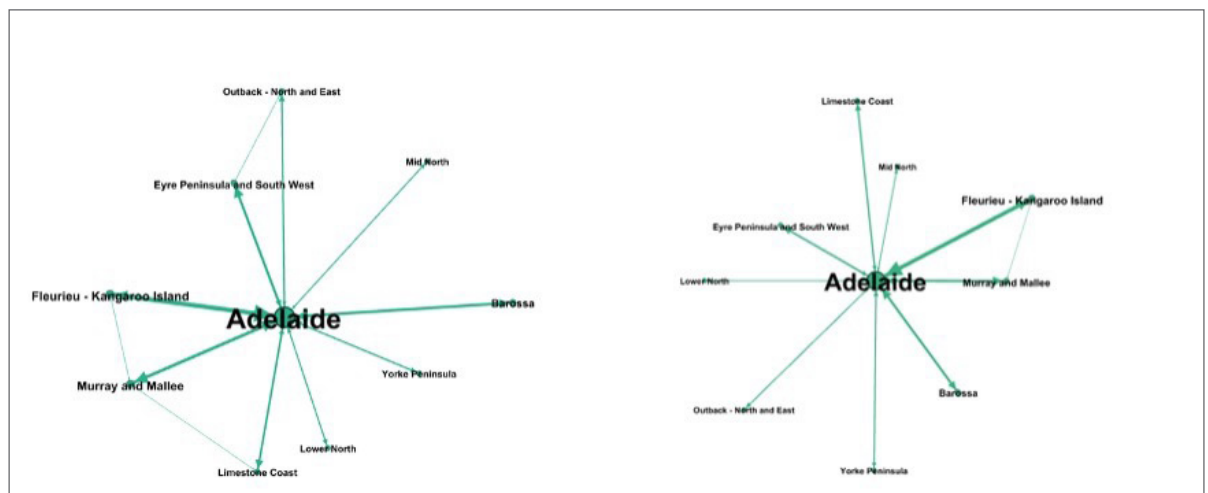
Source: ABS Census 2016 and 2021.

Note: See notes for Figure 2b.

Western Australia

In Western Australia, the line between Pilbara and Mid West disappeared between 2011–2016 and 2016–2021, indicating a decrease in population movement between regions and a concentration of population movement from other regions to the capital city Perth (Figures 6a and 6b). Bunbury remains a regional migration gate. Similar to South Australia, Figure 6b shows a significant dependency on the capital city, as no other migration cluster apart from Perth is observed.

Figure 6a: Western Australia: Changing migration patterns, 2011–2016 (left) and 2016–2021 (right)
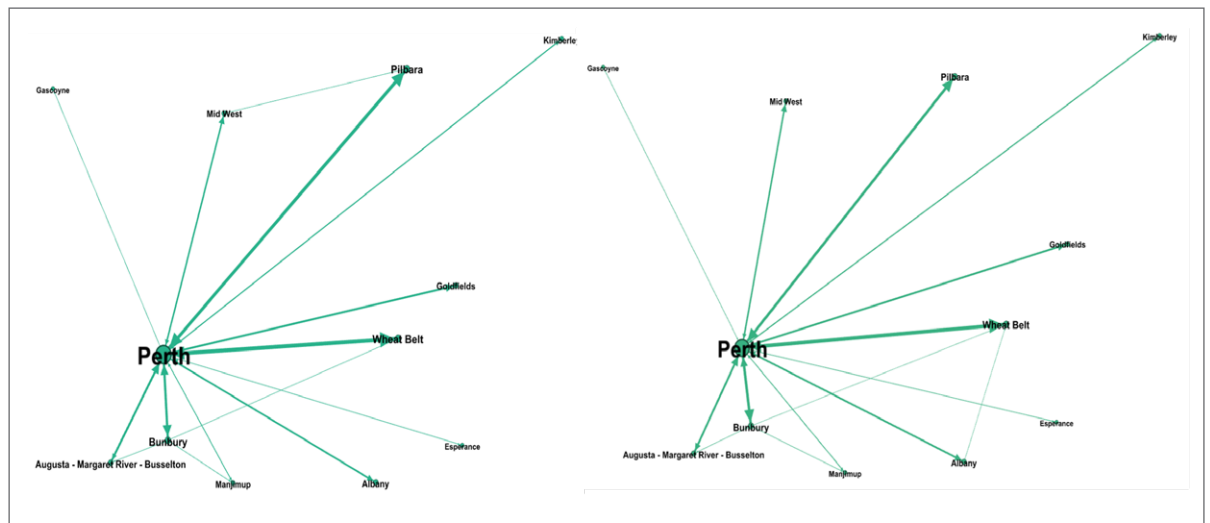
Source: ABS Census 2016 and 2021.

Note: See notes for Figure 2a.

Figure 6b: Western Australia: Modality networks for migrants, 2011–2016 (left) and 2016–2021 (right)
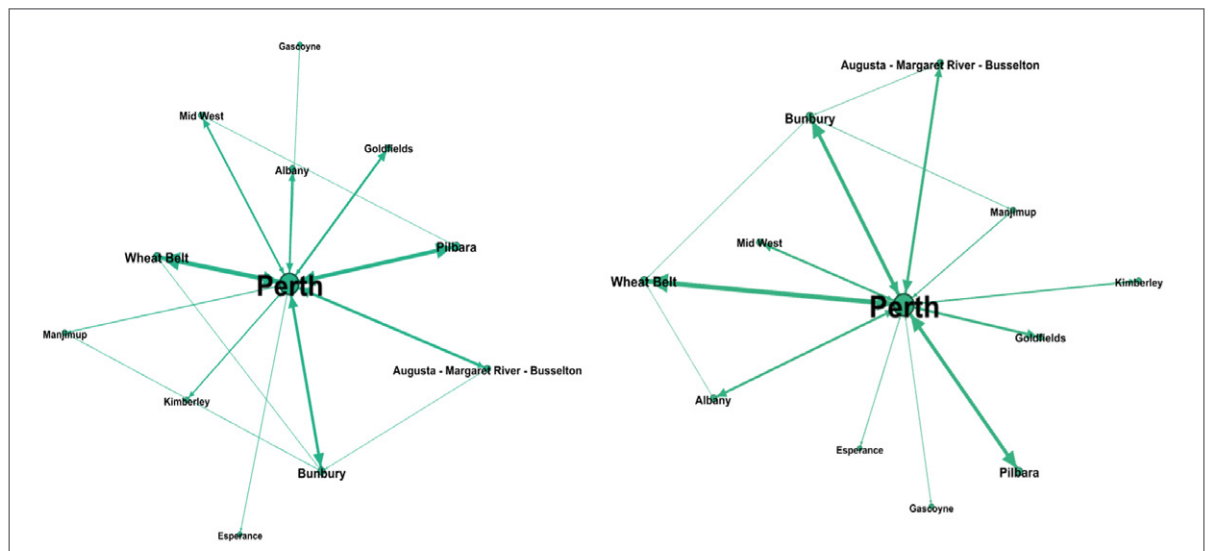
Source: ABS Census 2016 and 2021.

Note: See notes for Figure 2b.

2.2   Summary

This chapter has explored and visualised changing migration patterns 2011–2021 by state and the implications of the concentration of population in the capital cities of each state: Sydney in New South Wales, Melbourne in Victoria, Adelaide in South Australia and Perth in Western Australia. In Queensland, the state capital Brisbane is less dominant, as there are two mid-size cities (Gold Coast and Sunshine Coast).

The modality network analysis reveals changing migration clusters and dependencies across cities and towns. It identifies areas experiencing population shifts to help develop place-based policies to support the development and connectivity of these regions. For instance, the development of intermediate-sized urban centres, such as Newcastle in New South Wales and Bendigo in Victoria, can be beneficial.

Understanding changes in migration patterns and the urban structure of each state provides a basis to investigate regional disparities and the factors influencing in-migration to and out-migration from capital cities, as well as the challenges faced by smaller cities and regional areas in Australia.

The factors influencing migration between capital cities and regions are discussed in Chapter 4. Policy implications are discussed in Chapter 6.

3. Characteristics of within-state in-migrants to and out-migrants from capital cities

- This chapter investigates the socio-economic and housing characteristics of all movers within states.

- Out-migrants had higher household net worth and income than in-migrants.

- Out-migrants had a higher proportion of individuals aged 65 years and over.

- There has been an increase in higher-income migrants ($125,000+) regardless of their destinations, and the proportion of higher-income groups among out-migrants has significantly increased since 2014, well before COVID-19.

- Mortgage repayments, household income, age, housing, hours worked per week and family reasons were important factors in differentiating in-migrants and out-migrants by states.

3.1 Introduction

This chapter presents the socio-economic and housing characteristics of the migrants who moved to and from greater capital cities[1] in Australia, based on the HILDA dataset. The term 'capital cities' from HILDA used in this section are defined by the HILDA 'HHSGCC' label. Table 3 shows the count and proportion of migrants in capital cities by HILDA.

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[1] The definition of a 'capital city' is derived from the HHSGCC variables in the HILDA survey. This uses the ABS 'GCCSA' statistical area to represent the extents of state and territory capital cities

Table 3: Count and proportion of migrants in greater capital city area classifications

State and Greater Capital City Area classification	Capital city (*n*, %)		Rest of state (*n*, %)	
New South Wales	405	39.47%	621	60.53%
Victoria	357	40.02%	535	59.95%
Queensland	658	49.62%	668	50.38%
South Australia	228	50.55%	223	49.45%
Western Australia	226	55.26%	183	44.74%
Total	1,874	45.66%	2,230	54.33%

Source: HILDA dataset, 2001–2020.

Note: Each row sums to 100%.

3.2　Scale of movement

In the HILDA data 2002–2020, there are 1,874 in-migrants who have moved to a capital city within the same state and 2,230 out-migrants who have moved from a capital city within the same state.

Figure 7 shows the number of in-migrants and out-migrants by year. Since 2007, the number of out-migrants from capital cities has been higher than that of in-migrants to capital cities, except in 2013. The disparity peaked in 2020 when COVID-19 lockdowns were implemented in Australia. The number of in-migrants to capital cities peaked in 2016.

Figure 7: Annual in-migrants to capital cities and out-migrants from capital cities in NSW, Queensland, South Australia, Victoria and Western Australia, 2002–2020.
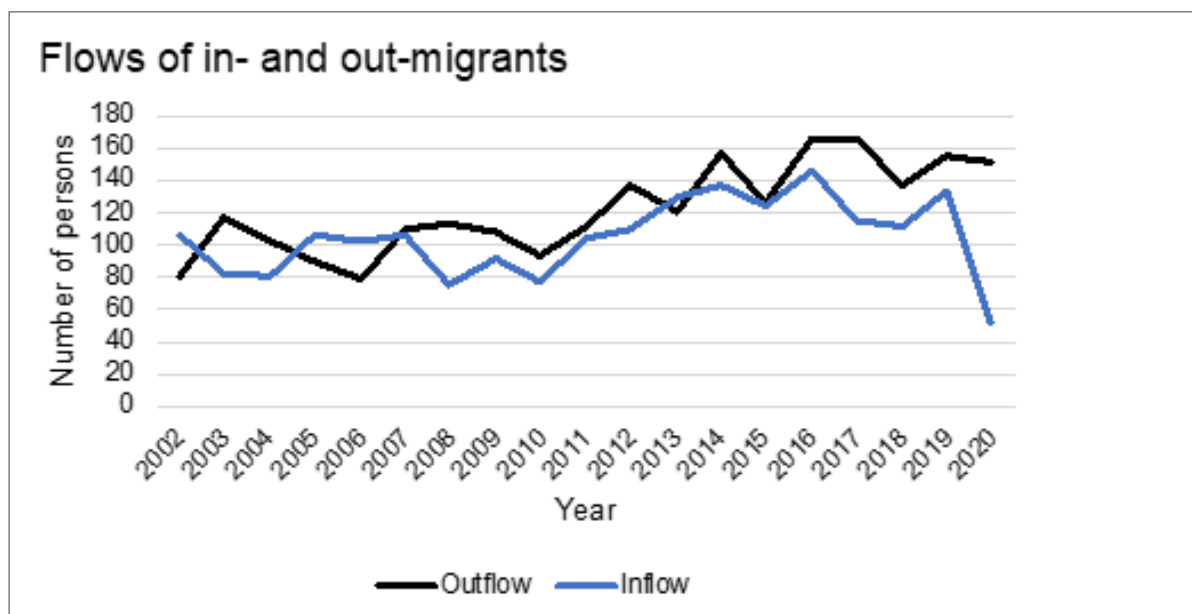
Source: HILDA data, 2002–2020.

In-migrants are people recorded as moving to a 'Capital City' as denoted by the 'HHSGCC' variable in HILDA, and out-migrants are people who have moved from a 'Capital City'. The term 'Capital city' includes the capital in each state, defined as SA4 areas in Table A4 in Appendix 3, following the 'HHSGCC' variable in the HILDA survey.

3.3   National-level differences between in-migrants and out-migrants

We track individual movements over 20 years (2001–2020) and examine migrants' socio-economic characteristics (age, income and job satisfaction) and housing (tenure and dwelling type) after moving to capital cities (in-migrants) and from capital cities (out-migrants). Appendix 3 explains the variables and methodology in detail.

This section provides an overview of the critical demographic data of in-migrants and out-migrants, based on HILDA data. Table 4 provides descriptive statistics for in-migrants to capital cities, and Table 5 provides descriptive statistics for out-migrants from capital cities, before and after the move.

The 1,874 in-migrants had a trimmed[2] mean age of 27 years and a median age of 24 years (Table 4). The 2,230 out-migrants were, on average, older than in-migrants, with a trimmed mean age of 31 years and a median age of 29 years (Table 5).

Another notable difference between in-migrants and out-migrants is their household net worth and income. On average, out-migrants before their move had a higher household net worth ($315,607) and income ($91,481) than in-migrants (household net worth of $245,473 and income of $78,004).

While out-migrants, at the time of reporting, indicated slightly higher working hours, there are no differences in in-migrants' and out-migrants' overall satisfaction with either employment or life.

Table 4: Descriptive statistics for in-migrants to capital cities

	Before move			After move	
Characteristics of in-migrants	Trimmed mean	Median		Trimmed mean	Median
Age	26	22		27	24
Household net worth ($)	273,287	137,400		106,372	40,000
Household income ($)	79,383	72,062		64,724	56,870
Mortgage repayment ($)	596	272		994	1049
Hours worked per week	36	38		37	38
Job satisfaction	8	8		8	8
Satisfaction with life	8	8		8	8
Satisfaction with neighbourhood	8	8		8	8
Number of children	1	0		1	0

Source: HILDA, 2002–2020.

Note 1: Based on 1,874 records for in-migrants.

Note 2: 'Trimmed means' exclude the top and bottom 10 per cent of the values for each variable to remove potential skew in the mean. Rental payments are not reported due to insufficient data. Mortgage repayments are reported only if respondents have answered. Satisfaction data is recorded on a scale 0–10, with 0 being 'Totally dissatisfied', 10 being 'Totally satisfied', and 5 being 'Neither satisfied nor dissatisfied'.

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2   Trimmed means' exclude the top and bottom 10% of the values for each variable to remove potential skew in the mean.

Table 5: Descriptive statistics for out-migrants from capital cities

Characteristics of out-migrants	Before move		After move	
	Trimmed mean*	Median	Trimmed mean	Median
Age	30	27	31	29
Household net worth ($)	270,592	114,323	188,235	85,000
Household income ($)	82,873	76,224	82,094	76,550
Mortgage repayment ($)	880	680	831	837
Hours worked per week	38	38	38	40
Job satisfaction	8	8	8	8
Satisfaction with life	8	8	8	8
Satisfaction with neighbourhood	8	8	8	8
Number of children	1	1	1	1

Source: HILDA, 2002–2020.

Note 1: Based on 2,230 records for out-migrants.

Note 2: 'Trimmed means' exclude the top and bottom 10 per cent of the values for each variable to remove potential skew in the mean. Rental payments are not reported due to insufficient data. Mortgage repayments are reported only if respondents have answered. Satisfaction data is recorded on a scale 0–10, with 0 being 'Totally dissatisfied', 10 being 'Totally satisfied', and 5 being 'Neither satisfied nor dissatisfied'.

3.4   Socio-economic characteristics of in-migrants and out-migrants

3.4.1   Age

Figures 8 and 9 show the distribution of age groups of in-migrants and out-migrants. Notably for the younger cohort of 16–25 years, in-migration to capital cities is much higher than out-migration. Conversely, there are more out-migrants aged 65 years+ than in-migrants, except in 2020.

Figure 8: Proportion of in-migrants to capital cities by age group, 2003–2020
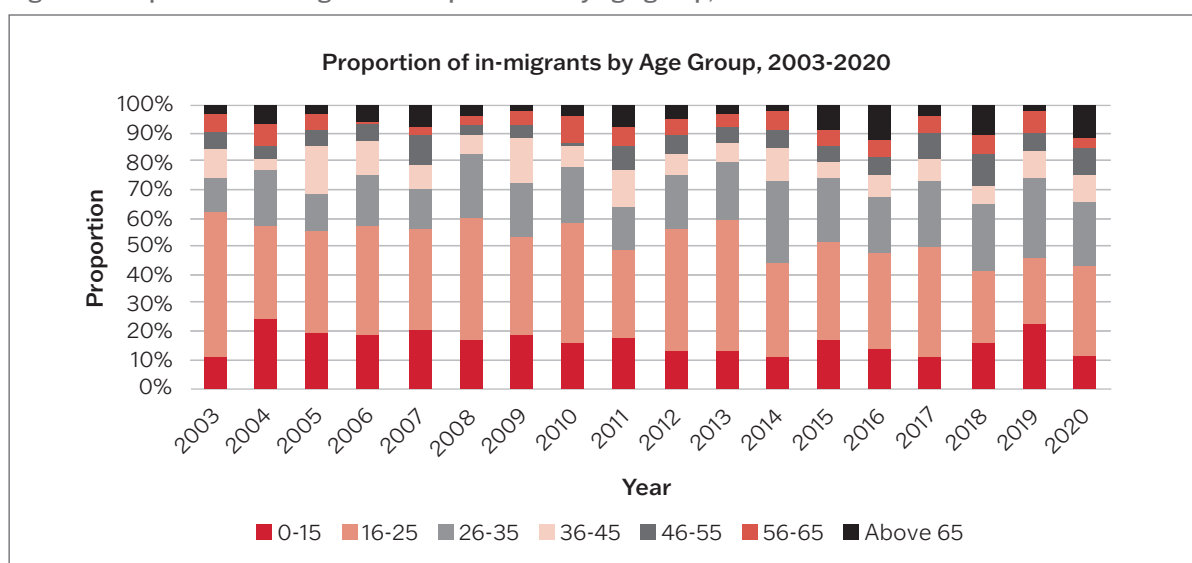
Source: HILDA, 2003–2020.

Note: Based on 1,867 records for in-migrants.

Figure 9: Proportion of out-migrants from capital cities by age group, 2003–2020
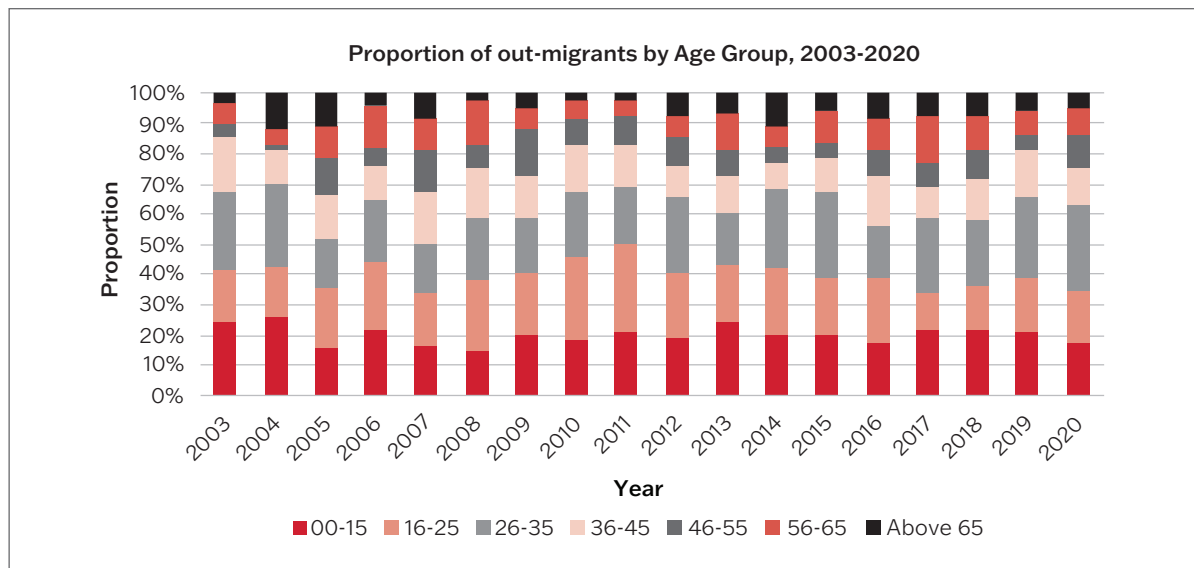
Source: HILDA, 2003–2020.

Note: Based on 2,230 records for out-migrants.

3.4.2   Income

In-migrants and out-migrants have a similar distribution of income (see Figure 10 and Figure 11), noting that income data from HILDA is only available from 2004 onwards. Notably, there has been a consistent increase in the number of higher-income migrants (annual income of $125,000 or more) regardless of their chosen destinations. The proportion of the top two income groups ($100,000–$124,999 and $125,000+) for out-migrants has increased since 2014 (see the light grey and yellow bars). While the relocation of high-earning city dwellers to the regions has often been identified as a result of the COVID-19 pandemic (facilitated by the sudden shift to remote working for many 'white collar' workers), these findings indicate this trend pre-dates the pandemic by half a decade. It will be important to monitor if this phenomenon increased significantly as the pandemic continued beyond 2020.

Figure 10: In-migrants to capital cities by income group, 2004–2020

Proportion of in-migrants by income group, 2004-2020

Legend: $1 - $9,999 · $10,000 - $19,999 · $20,000 - $29,999 · $30,000 - $39,999 · $40,000 - $49,999 · $50,000 - $59,999 · $60,000 - $79,999 · $80,000 - $99,999 · $100,000 - $124,999 · $125,000 or more · Negative or Zero income
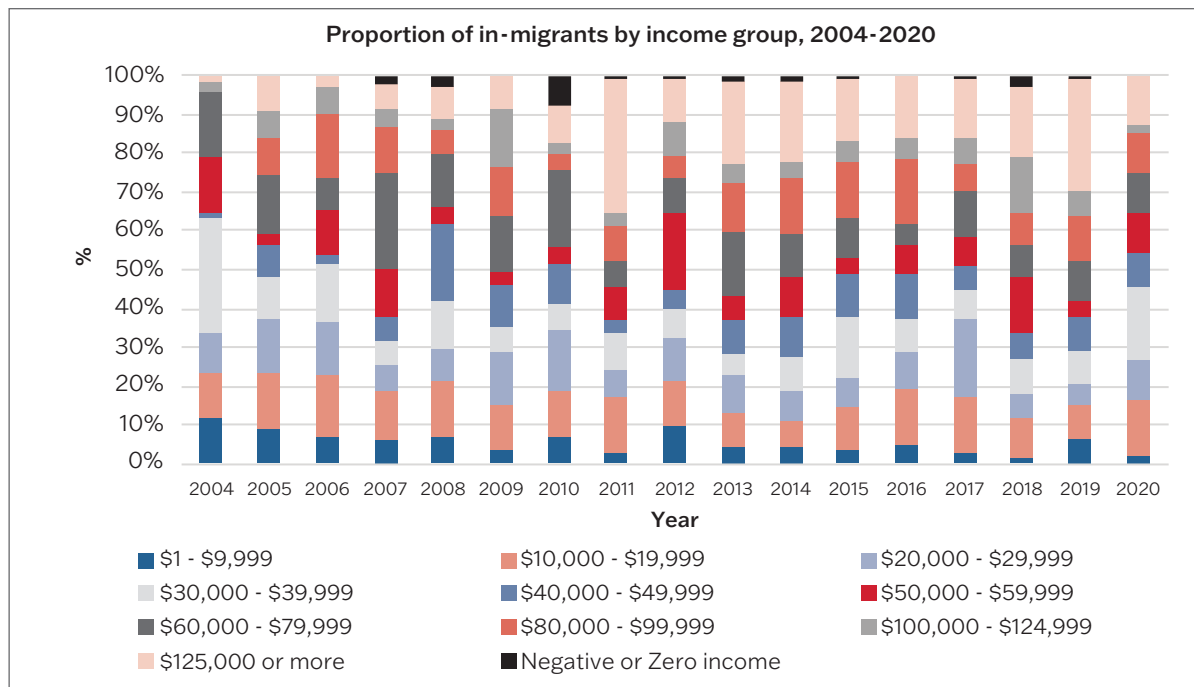
Source: HILDA, 2004–2020.

Note 1: Based on 1,694 records for in-migrants.

Note 2: This analysis utilises the 'hiband' variable for household income, which was not available before 2004.

Figure 11: Out-migrants from capital cities by income group, 2004–2020

Proportion of out-migrants by income group, 2004-2020

Legend: $1 - $9,999 · $10,000 - $19,999 · $20,000 - $29,999 · $30,000 - $39,999 · $40,000 - $49,999 · $50,000 - $59,999 · $60,000 - $79,999 · $80,000 - $99,999 · $100,000 - $124,999 · $125,000 or more · Negative or Zero income
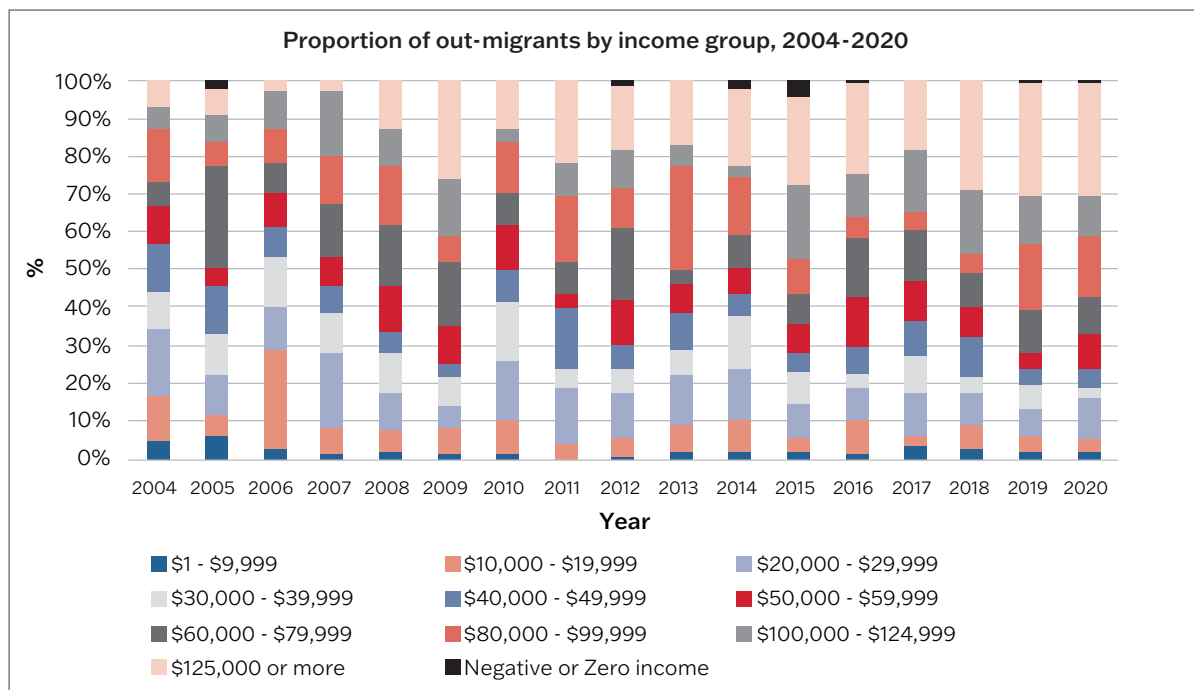
Source: HILDA, 2004–2020.

Note 1: Based on 2,063 records for out-migrants.

Note 2: This analysis utilises the 'hiband' variable for household income, which was not available before 2004.

3.4.3 Job satisfaction after a move

The HILDA survey asked respondents to rate their level of job satisfaction on a scale of 0–10, from least satisfied to most satisfied. Figure 12 compares the means of job satisfaction between in-migrants and out-migrants after moving. Satisfaction levels are relatively similar, with out-migrants having slightly higher job satisfaction scores (total mean score = 7.65) compared to in-migrants (total mean score = 7.56).

Figure 12: Mean job satisfaction for in-migrants and out-migrants, 2003–2020
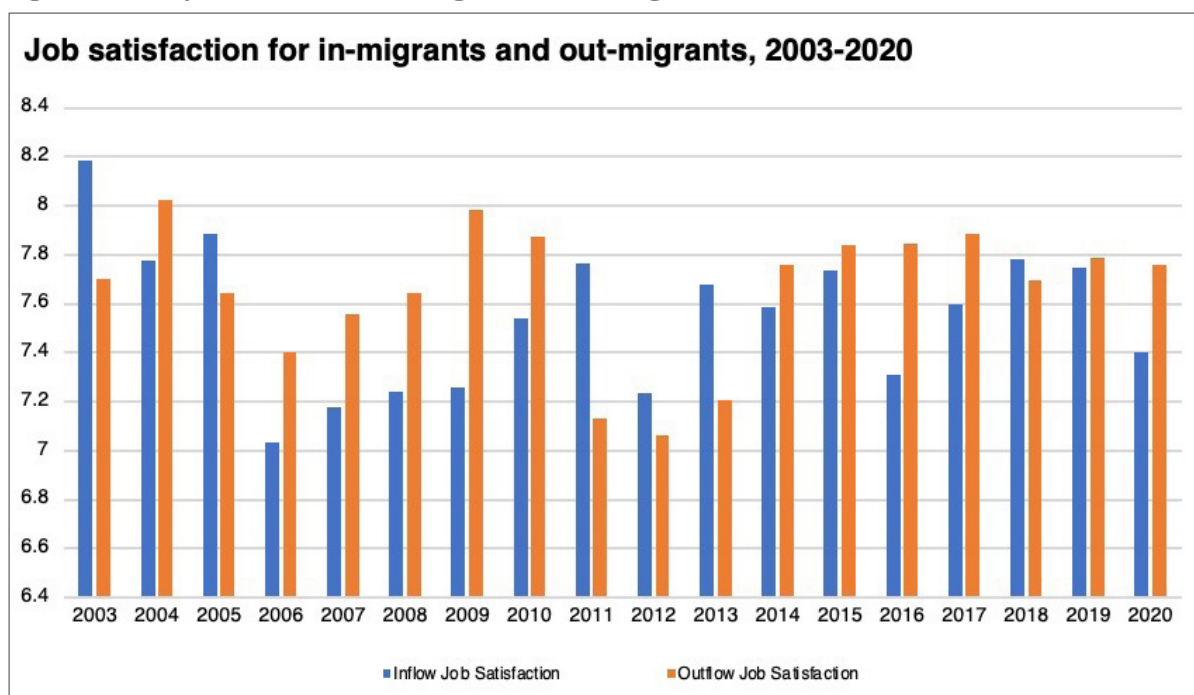
Source: HILDA, 2003–2020.

Note: Based on 1,441 records for in-migrants and 1,680 records for out-migrants.

3.5   Housing characteristics

3.5.1   Housing tenure after a move

Most in-migrants to capital cities live in private rentals, with the average proportion of renters stable at about 70 per cent (Figure 13). In contrast, there is a marked increase over time in the proportion of out-migrants from the capital cities who become homeowners. The average proportion of out-migrants owning or paying off their mortgage is 38 per cent, significantly higher than the 23 per cent of in-migrants, as most are renting.

Figure 13: Housing tenure for in-migrants to capital cities, 2003–2020
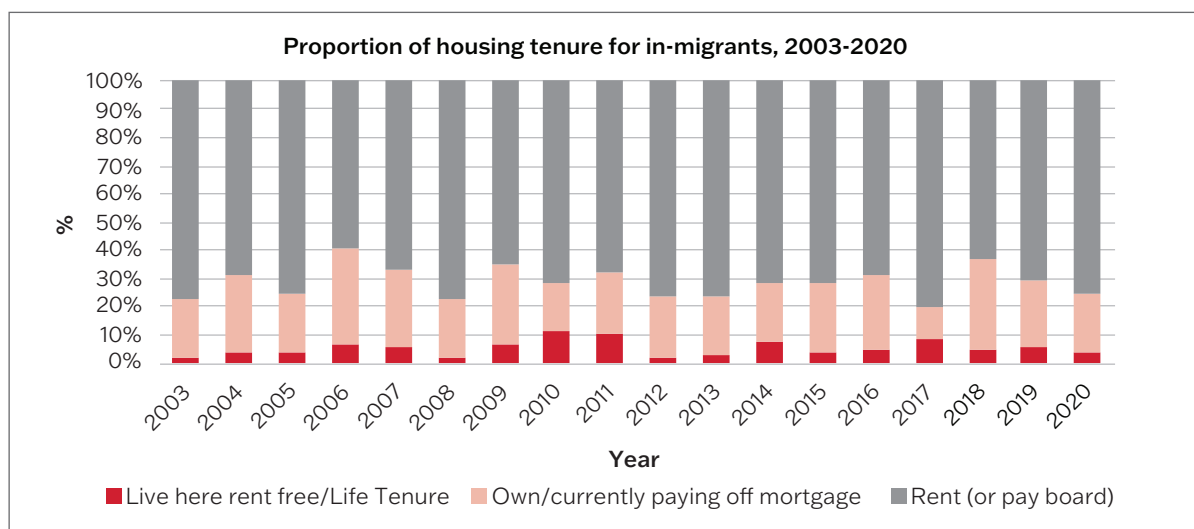
Source: HILDA, 2003–2020.

Note: Based on 1,859 records for in-migrants.

Figure 14: Housing tenure for out-migrants from capital cities, 2003–2020
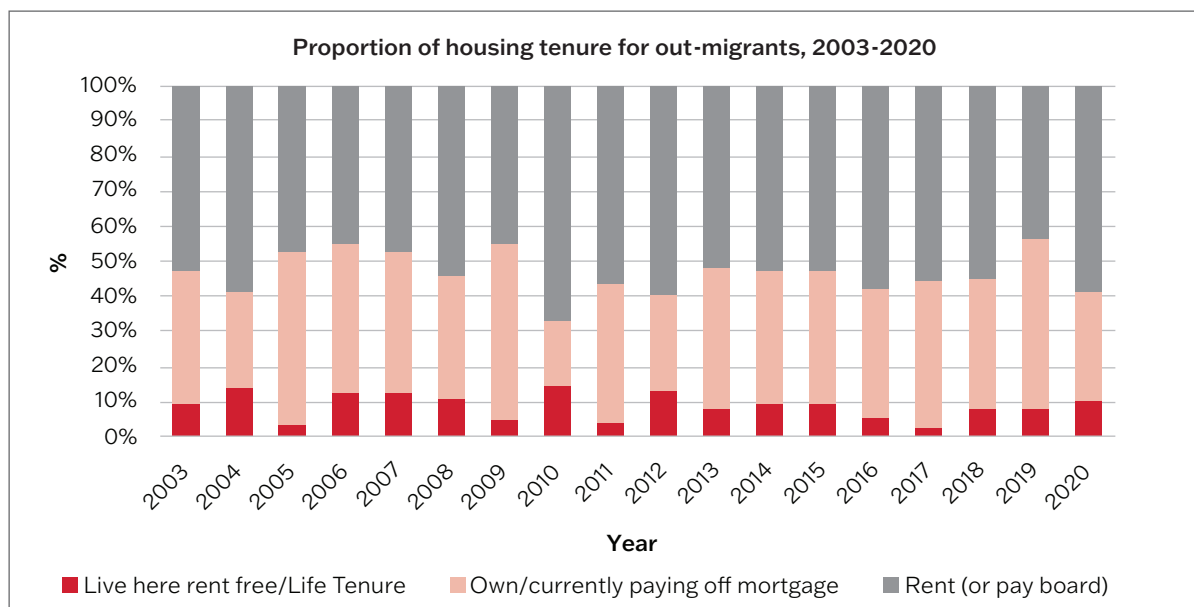
Source: HILDA, 2003–2020.

Note: Based on 2,224 records for out-migrants.

3.5.2   Dwelling type after a move

Figures 15 and 16 show the dwelling types of in-migrants and out-migrants. Both in-migrants and out-migrants moved to separate (detached) houses after their move. However, a significantly higher proportion of out-migrants from capital cities now live in separate houses (coloured in blue) than do in-migrants to capital cities. While capital cities offer a wide range of dwelling choices, these findings highlight the relative affordability of detached houses in regional areas compared to capital cities.

Figure 15: Dwelling types for in-migrants to capital cities, 2003–2020
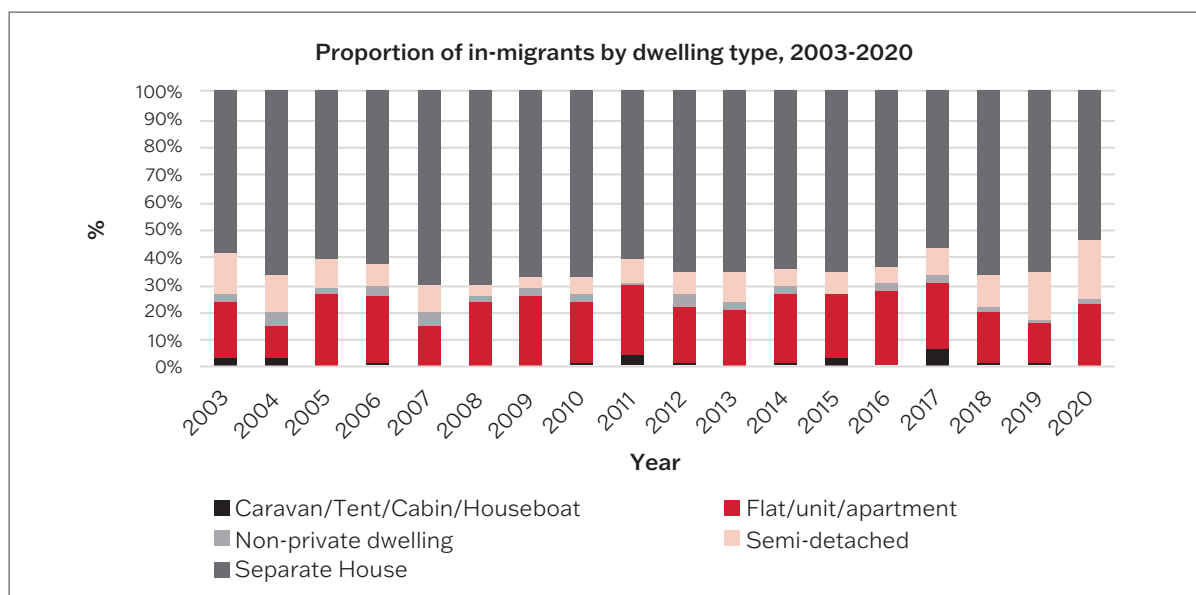
Source: HILDA, 2003–2020

Notes: Based on 1,867 records for in-migrants.

Figure 16: Dwelling types for out-migrants from capital cities, 2003–2020
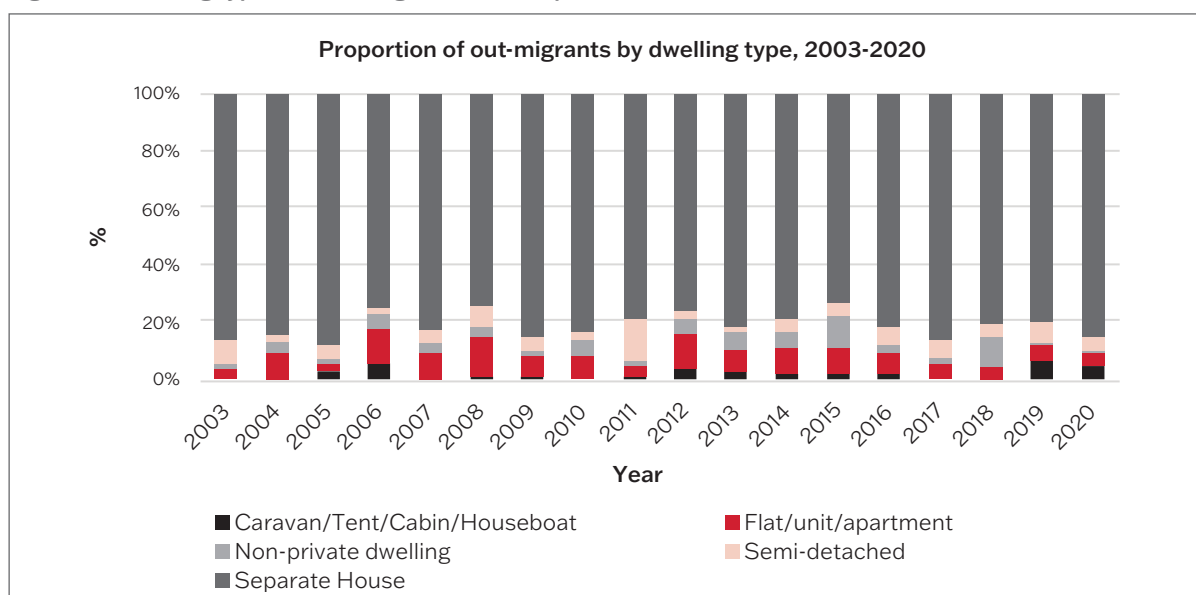
Source: HILDA, 2003–2020.

Notes: Based on 2,230 records for out-migrants.

3.6   Discriminating between migration groups by state

This section presents the results of a linear discriminant analysis (LDA). An LDA is a multivariate statistical model. It aims to statistically distinguish between in-migrants and out-migrants across states by evaluating a range of socio-economic and personal variables (refer to Table A2: Selected variables in HILDA, 2001–2020)

In-migrants to capital cities

Table 6 presents the coefficients for two linear discriminants used to examine in-migration patterns. Both functions LD1 and LD2 represent different characteristics of in-migration patterns. While LD1 focuses on economic and satisfaction-related factors, LD2 emphasises demographic characteristics and housing-related reasons for moving. The two linear functions collectively explain 75.88% of the variance, with LD1 accounting for 40.31%, and LD2 for 35.57%. The coefficients represent the relative contribution of each variable to the discriminant functions, serving as a quantifiable measure of the importance of each variable.

Table 6: Coefficients of discriminants for in-migrants to capital cities

Coefficients of linear discriminants	LD1 (40.31%)	LD2 (35.57%)
Age	-9.301	9.964
Household net worth	-3.390	-5.541
Household income	18.825	-3.346
Mortgage repayment	-19.763	8.351
Hours worked per week	1.346	0.765
Job satisfaction	7.454	-1.497
Satisfaction with life	-14.015	-0.893
Satisfaction with neighbourhood	11.570	5.661
Number of children	2.103	1.953
Move reason: Employment	-4.609	-0.602
Move reason: Education	-4.390	-5.360
Move reason: Health	0.252	0.654
Move reason: Housing	-2.898	-15.151
Move reason: Lifestyle	6.107	-6.530
Move reason: Family	-0.703	-10.537

Source: HILDA, 2003–2020

Notes: High absolute coefficients are significant in differentiating between groups for both LD1 and LD2. Based on 1,874 records for in-migrants from HILDA. Move reasons are discussed in Section 4.

In LD1, the analysis appears to highlight economic factors as significant for in-migrants. A high negative coefficient for mortgage repayment (−19.763) suggests that increased mortgage repayments are a significant factor in differentiating between in-migrants and out-migrants, indicating that higher mortgage repayments are less likely to be linked to in-migrants.

Conversely, LD2 places more emphasis on personal and lifestyle factors. Variables with high coefficients include age (9.964) and moving for housing (−15.151) and family (−10.537), indicating that these are key factors influencing in-migration. The positive coefficient for age implies that older age groups may be migrating differently compared to younger people. The orthogonality of LD2 in relation to the data implies that LD2 captures variance in the data that is completely independent and uncorrelated with LD1. In this analysis, while LD1 might capture economic factors influencing migration, LD2 provides insights into personal or lifestyle factors influencing migration decisions, which are distinct from economic considerations. Figure 17 provides a visualisation of the two discriminant functions for in-migrants in each state.

Figure 17: Visualisation of important factors for in-migrants to capital cities, 2003–2020
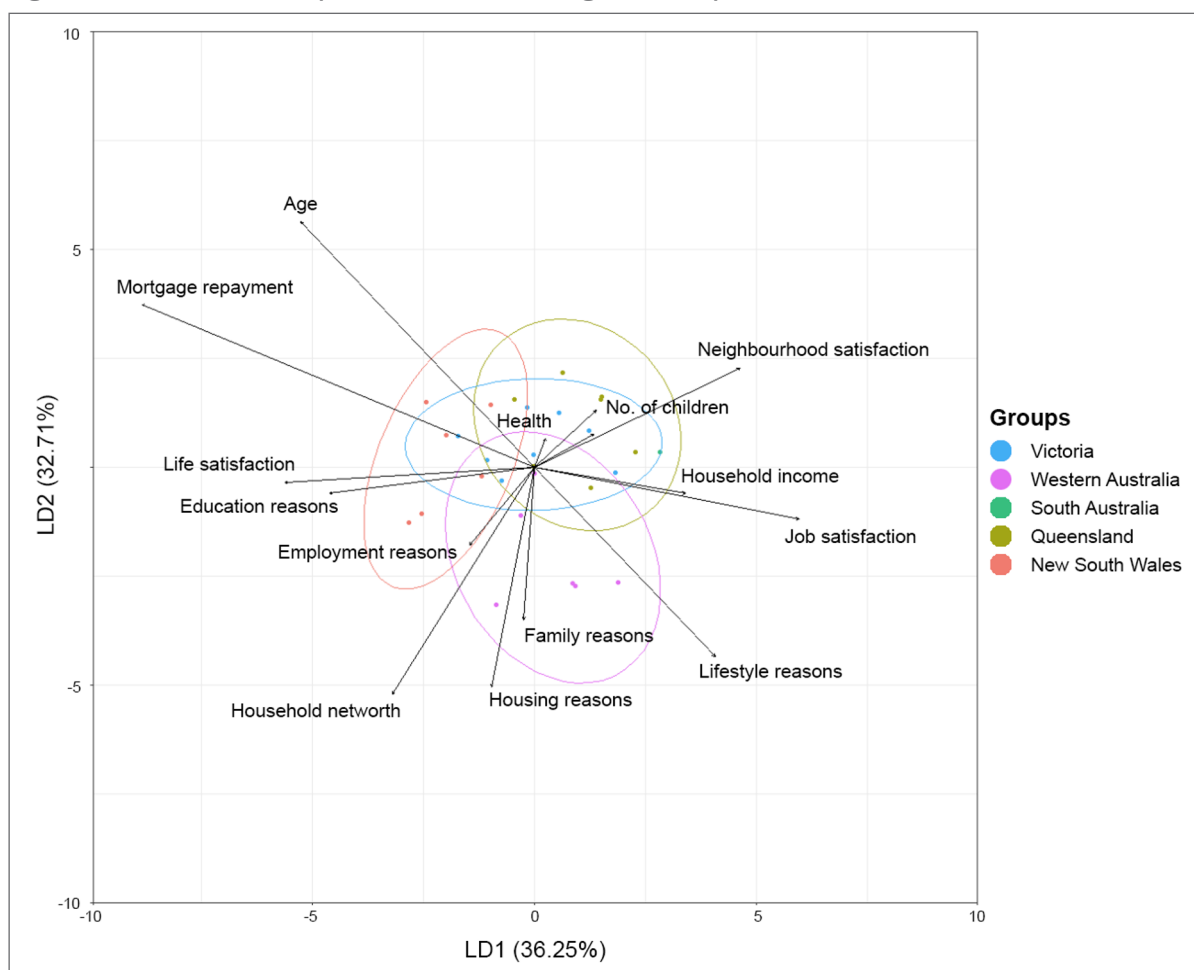
Source: HILDA, 2003–2020.

Notes: Based on 1,874 records for in-migrants.

In New South Wales, in-migrants show a tendency towards lower life satisfaction and higher mortgage repayments. There is also a convergence around moving for education and employment, pointing to the educational and employment opportunities in its capital cities, predominantly Sydney, as possible attractions for in-migrants.

In Victoria, in-migrants display overlaps with all other states, suggesting that migration factors cannot be easily determined for the state.

In Queensland, the pattern shows a heterogeneous distribution, with observable associations with neighbourhood satisfaction, number of children and household income.

In Western Australia, in-migrants feature clustering, with extensions towards moving for housing, family and lifestyle reasons, indicating their potential significance for in-migrants.

In South Australia, the sample size of in-migrants is too small to draw conclusive interpretations.

Out-migrants from capital cities

Table 7 presents the coefficients for the two linear discriminant functions LD1 and LD2 for out-migrants in each state. LD1 accounts for 36.25% of the variance between all groups, while LD2 explains 32.71% of the variance, which indicates substantial explanatory power in characterising out-migration dynamics. Figure 18 provides a visualisation.

Table 7: Coefficients of discriminants for out-migrants

Coefficients of linear discriminants	LD1 (36.25%)	LD2 (32.71%)
Age	5.791	-0.168
Household net worth	-3.559	1.539
Household income	2.077	-3.771
Mortgage repayment	-0.114	-0.462
Hours worked per week	-10.003	-33.966
Job satisfaction	2.526	1.973
Satisfaction with life	-4.558	2.562
Satisfaction with neighbourhood	1.607	-5.003
Number of children	-0.634	2.205
Move reason: Employment	-1.296	0.016
Move reason: Education	-2.400	-0.101
Move reason: Housing	-0.944	-0.878
Move reason: Lifestyle	-4.782	-3.425
Move reason: Family	1.460	0.885

Source: HILDA, 2003–2020

Notes: Based on 2,230 records for out-migrants. High absolute coefficients are significant in differentiating between groups for both LD1 and LD2. Move reasons are discussed in Section 4.

Age emerges as a significant predictor in the classification of out-migrants, with a positive coefficient of 5.791 for LD1. This suggests that older individuals tend to be associated with LD1, implying potential demographic distinctions between out-migrant groups. The positive coefficient for household income in LD1 (2.077) suggests that higher household income positively influences classification into LD1. The results suggest that older individuals with higher incomes are more strongly associated with the characteristics captured by LD1 in the analysis of out-migration patterns.

LD1 accounts for 36.25% of the total variance. This indicates that variables such as age, household net worth, household income and job satisfaction have noteworthy positive coefficients. This suggests that older individuals with higher household wealth and income—as well as those with greater job satisfaction—are more likely to be associated with LD1, and thus more likely to migrate out of capital cities. Conversely, variables such as hours worked per week and satisfaction with life show negative coefficients in LD1, indicating that individuals who work fewer hours per week and report lower levels of life satisfaction are also positively associated with out-migration from capital cities.

Employment-related variables such as job satisfaction and hours worked per week emerge as influential factors in distinguishing between out-migrant groups. Both variables have considerable negative coefficients across LD1 and LD2, indicating their substantial impact on the classification process. This suggests that employment-related considerations play a pivotal role in shaping out-migration patterns, potentially reflecting labour market dynamics, job opportunities and career aspirations among migrants. This implies that individuals or households with lower levels of employment, as indicated by fewer hours worked per week, are more likely to be classified within both LD1 and LD2. This could reflect different employment status among out-migrant groups, such as part-time employment, unemployment or retirement. However, distinguishing between these groups was not within the scope of this project.

It is interesting to note that LD1 has a positive coefficient for job satisfaction (2.526), which suggests that higher levels of job satisfaction are associated with the group represented by LD1. Similarly, LD2 also has a positive coefficient (1.973) for job satisfaction, indicating a positive association between job satisfaction and the out-migrant group represented by LD2. These findings imply that individuals or households with higher levels of job satisfaction are more likely to be classified within both LD1 and LD2, irrespective of the specific characteristics captured by each discriminant. This suggests that job satisfaction plays a significant role in influencing migration decisions, potentially reflecting preferences for areas with better employment prospects or job conditions among out-migrants.

Figure 18 presents a more nuanced picture. It indicates that the spread and overlap of state groups, contrary to the implications of the coefficients alone, have less pronounced differences among their out-migrant groups. This overlap suggests that while certain factors like age and hours worked per week—as evidenced particularly for Western Australia, Victoria and Queensland—do contribute to out-migrant characterisation, the variability within the groups is such that the states cannot be distinctly segregated based on these discriminants alone.

Figure 18: Clustering of out-migrants by state
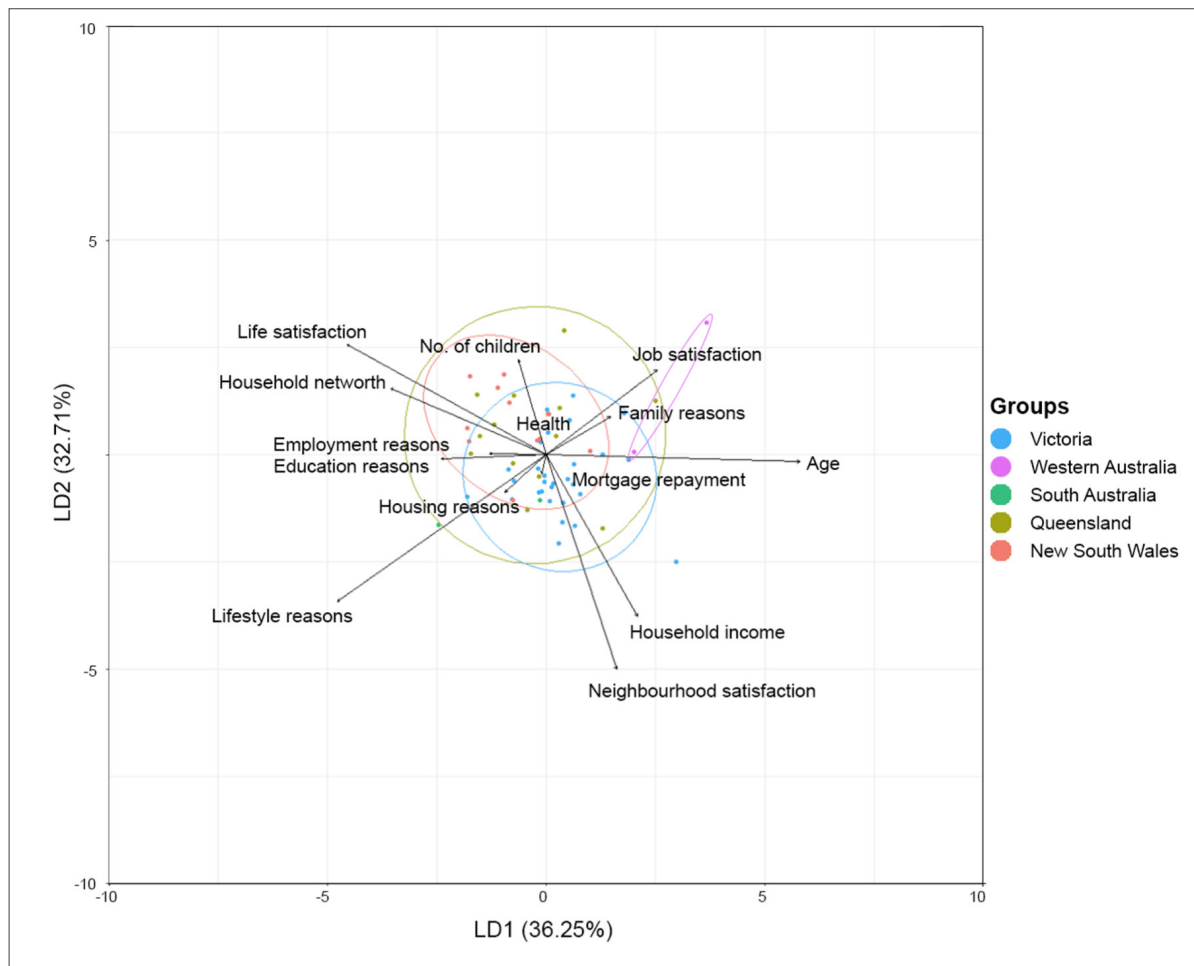
Source: HILDA, 2003–2020

3.7   Summary

The findings in this chapter confirm a number of well-known trends in regional migration.

- In-migrants have key differences in their socio-economic, demographic and motivational factors for moving to capital cities in different states, whereas the distinctions between out-migrants are more nuanced.

- In-migrants are generally younger, with lower household incomes and net worth, compared to out-migrants, which may reflect the 'sea-change' and 'tree-change' phenomena.

- In-migrants to capital cities have a higher likelihood of moving to higher-density dwelling types than out-migrants, although detached housing remains the dominant dwelling type for both groups.

- Significantly more in-migrants to capital cities rent rather than buy, while out-migrants from capital cities are about equally likely to rent or buy.

A notable finding is that an increase in higher-income out-migrants from capital cities has been clearly evident since 2015, clearly pre-dating the COVID-19 pandemic. While the pandemic focussed significant public and policymaker interest on the drivers of regional migration, this finding suggests that the growth of remote work is not the only reason more high-income workers are moving out of capital cities. This suggests that other drivers, such as housing affordability and availability, and lifestyle factors, should be a more important focus of policy makers, despite the increased interest in remote working. This conclusion is also supported by more recent data on trends in regional moves (Regional Australia Institute 2023), which shows a return to pre-pandemic regional migration levels. While the pandemic no doubt impacted the decisions of some regional migrants, the long-term impact of COVID-19 on regional migration may be less significant than it appeared at the time.

4. Reasons for moving for in-migrants and out-migrants

- **For in-migrants to capital cities, the most common reason for moving was employment (27.9%), followed by personal reasons (25.4%).**

- **For out-migrants from capital cities, the most common reason for moving was lifestyle (27.8%), followed by personal reasons (25.2%).**

- **Housing was significant for out-migrants, nearly double that of in-migrants: 16.2 per cent for in-migrants and 30 per cent for out-migrants.**

- **In Victoria, education was a particularly important reason for moving to a capital city.**

- **Health was not a common reason for moving.**

4.1   Reasons for migration

In the HILDA survey, respondents were asked questions on their main reasons for moving. For the purposes of this report, we categorise these responses into six broad categories: education, employment, health, housing, lifestyle, and personal. Table 8 lists the specific HILDA variables for each category. Appendix 4 summarises responses for all move variables, by state.

Table 8: Categorisation of move reason variables

Move Reason	Variable Included	Variable Name
Education	*Mhreast*	Main reasons for moving – To be close to place of study
Employment	*Mhreanj*	Main reasons for moving – To start a new job with a new employer
	Mhreawp	Main reasons for moving – To be nearer place of work
	Mhreawt	Main reasons for moving – Work transfer
	Mhreaob	Main reasons for moving – To start own business
	Mhrearb	Main reasons for moving – Decided to relocate own business
	Mhrealw	Main reasons for moving – To look for work
	Mhreawr	Main reasons for moving – Work reasons (NFI)
Health	*Mhreahr*	Main reasons for moving – Health reasons
Housing	*Mhrealb*	Main reasons for moving – To get a larger/better place
	Mhreasm	Main reasons for moving – To get a smaller/less expensive place
	Mhreapo	Main reasons for moving – To get a place of my own/our own
	Mhreapn	Main reasons for moving – Property no longer available
	Mhreaev	Main reasons for moving – Evicted
	Mhreagh	Main reasons for moving – Government housing (no choice)
	Mhreahn	Main reasons for moving – Housing/neighbourhood reason (NFI)
Lifestyle	*Mhreabn*	Main reasons for moving – To live in a better neighbourhood
	Mhreama	Main reasons for moving – Moved to Australia (NFI)
	Mhreaas	Main reasons for moving – To be closer to amenities/services/public transport
	Mhreals	Main reasons for moving – Seeking change of lifestyle
	Mhreatr	Main reasons for moving – Temporary relocation
	Mhrearo	Main reasons for moving – Travelling/returned from overseas
Personal	*Mhreamr*	Main reasons for moving – To get married/moved in with partner
	Mhreaff	Main reasons for moving – To be closer to friends and/or family
	mhreamb	Main reasons for moving – Marital/relationship breakdown
	Mhreafm	Main reasons for moving – To follow a spouse or parent/Whole family moved
	Mhreapf	Main reasons for moving – Personal/family reasons (NFI)

Source: HILDA data release wave 1-20 (2001-2020)

Note: NFI = No Further Information

4.2 National-level reasons for moving

Figure 19 summarises the national in-migrant and out-migrant reasons for moving.

For in-migrants, the most common reason for moving was employment (27.9%), followed by personal reasons (25.4%) and lifestyle (14.9%). Health was the least common reason for moving (3.3%).

For out-migrants, the most common reasons for moving were lifestyle (27.9%) and personal reasons (25.5%), followed by housing (21.0%) and employment (19.8%). The least common reasons for moving were education (3.2%) and health (2.6%).

Figure 19: Summary of reasons for moving, national
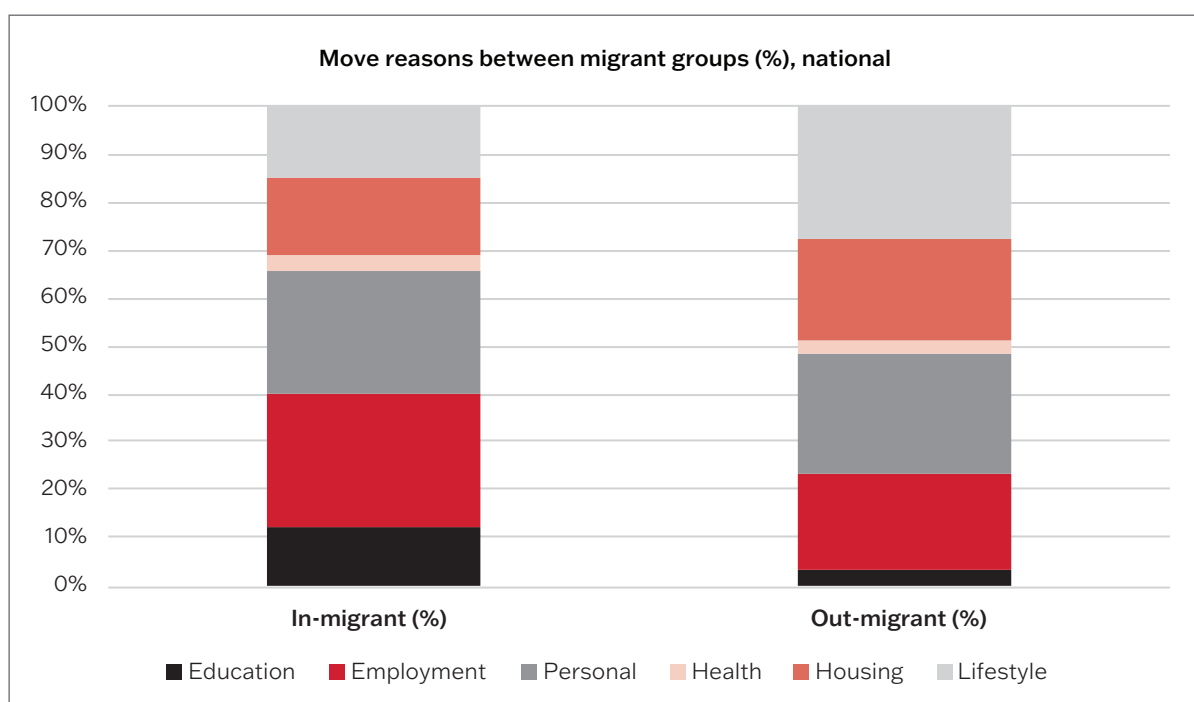
Source: HILDA data, 2003–2020.
Notes: Based on 1,833 records for in-migrants, and 2,030 records for out-migrants.

Employment is a significant factor for both in-migration and out-migration—although the motivations differ. Moving 'To Start A New Job With A New Employer' is a major reason for both groups: 27.9% for in-migrants and 19.9% for out-migrants. This suggests that employment opportunities are a crucial factor in migration decisions, whether entering or leaving a city. Moving 'To Be Nearer Place Of Work' is significant for in-migrants (11.02%), indicating the importance of job location in the decision to move closer to urban centres. Meanwhile, the relatively lower percentage (5.80%) for out-migrants might indicate the lesser, but still important, influence of job proximity on the decision to leave a city.

Personal-related reasons have a strong influence on migration patterns. Moving 'To Be Closer To Friends And/Or Family' is a major reason for both in-migrants (12.25%) and out-migrants (12.58%), suggesting that social and familial ties are equally influential for moving to and from cities. Moving 'To Get Married/Moved In With Partner' also shows a relatively balanced influence for both in-migrants (3.95%) and out-migrants (3.44%).

Housing is also important in migration patterns. Moving 'To Get A Place Of My Own/Our Own' is a significant reason for both in-migrants (6.92%) and out-migrants (6.64%), illustrating the universal aspiration for property ownership or establishing one's own household. Moving 'To Get A Larger/Better Place' is a reason for 3.23% of in-migrants and 5.15% of out-migrants. This indicates that while some individuals move into cities in search of improved living conditions, others move out, potentially due to the perception that regional areas offer more spacious or higher quality housing options at a more affordable cost. Moving 'To Get A Smaller/Less Expensive Place' is also a common reason for out-migration (5.52%) compared to in-migration (2.36%). The higher percentage for out-migrants may reflect the financial pressure of urban living, where the cost of housing is often higher. This could also signify a lifestyle choice for downsizing or simplifying living arrangements, possibly after significant life events such as retirement or children leaving the home.

Lifestyle factors are particularly significant among out-migrants, with 'Seeking Change Of Lifestyle' at 18.94% more than double that of in-migrants at 8.61%. This substantial difference suggests that individuals leaving the city are often searching for a different way of life, which could involve a variety of factors including a quieter environment, different cultural experiences, or a lower cost of living. Moving 'To Live In A Better Neighbourhood' is 2.41% for in-migrants, which is lower than the 6.55% for out-migrants. This suggests that while some are looking for improved neighbourhoods in cities, a larger group is possibly seeking what they perceive to be better living conditions outside of urban areas.

Education as a reason for migration is notably higher for in-migrants (12.15%) than for out-migrants (3.25%), highlighting the draw of urban centres as hubs for educational opportunities. This discrepancy likely reflects the concentration of educational institutions in capital cities, and their attractiveness to those seeking access to such facilities.

Moving for health is relatively low in comparison to other categories, at 3.28% for in-migrants and 2.15% for out-migrants.

4.3   State-level differences in reasons for in-migrants and out-migrants

4.3.1   Move reasons for in-migrants by state

Figure 20 shows the main motivations for in-migrants to capital cities for each state.

Figure 20: In-migrant reasons for moving, by state, 2003–2020
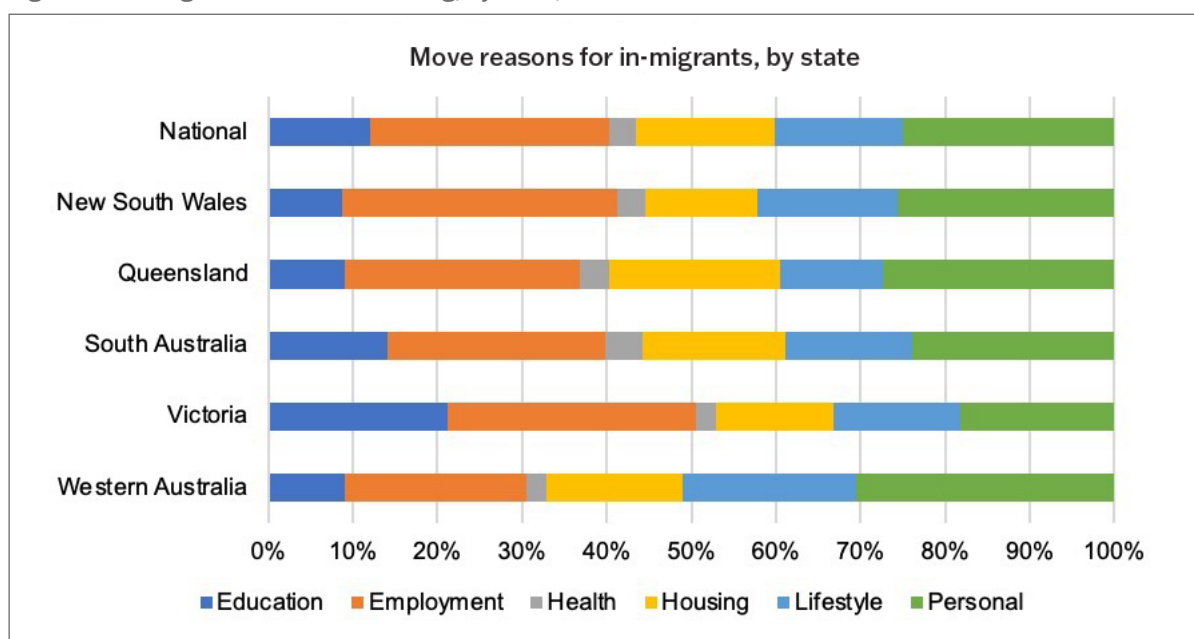
Source: HILDA data, 2003–2020.

Notes: Number of records in each state: 452 in NSW, 654 in Queensland, 234 in Victoria, 390 in South Australia, and 221 in Western Australia.

New South Wales has a higher rate of employment-driven migration (32.74%) than the national average (27.99%). The state has slightly higher rates of moving for personal reasons (25.66%) than the national average (25.42%), but lower rates than the national averages for education (9.51%) and health (3.32%).

Victoria has a markedly higher percentage of education-related migration (21.03%) than the national average (12.15%), suggesting Melbourne's prominence as an educational centre. The percentage of people who moved for personal reasons (18.72%) is lower than the national average (25.42%). Moving for reasons of employment (28.21%), lifestyle (15.13%) and housing (14.36%) are relatively comparable to national averages.

Queensland has a higher proportion of people moving for personal reasons (27.83%) compared to the national average (25.42%), and a higher proportion for housing (20.18%) compared to the national average (16.20%). However, moving for education (8.87%) and lifestyle (12.08%) are lower than the national averages.

South Australia has a marginally higher proportion of in-migrants for health reasons (4.27%) than the national average (3.28%) and also has slightly higher housing (16.24%) and lifestyle (14.96%) reasons. Education-driven migration (14.10%) is higher than the national average, indicating the pull of Adelaide as the state's education destination.

Western Australia has the highest percentage of moves for personal (31.22%) and lifestyle reasons (20.36%) compared to other states. In contrast, moving for employment reasons (27.9%) is below the national average.

Employment

Employment opportunities appear to be a significant factor influencing intrastate migration to major Australian cities. Nationally the data suggest that 11.02% of migrants relocated to be closer to their place of work. This figure was notably higher in New South Wales (14.16%) and Victoria (13.33%), while South Australia recorded the lowest percentage (7.69%). This likely reflects the greater concentration of employment opportunities in the state capitals of New South Wales and Victoria. Starting a new job with a new employer motivated 7.84% of relocations nationwide, ranging from 6.88% in Queensland to 9.07% in New South Wales. Work transfers accounted for 3.43% of moves nationally, with relatively consistent figures across the states. Finally, 4.56% of migrants moved with the primary objective of seeking employment, with the highest percentage in South Australia (5.98%) and the lowest in Western Australia (2.71%).

Personal relationships

Personal relationships emerged as another significant driver of migration decisions. Across Australia, the desire to be closer to friends and family appeared to be the strongest personal motivator, influencing 12.25% of moves. This trend was strongest in Western Australia (16.74%) and least notable in South Australia (8.97%). Nationally, 3.95% of people moved for this reason, showing that personal relationships are a significant factor in migration decisions— but not a dominant factor. This reason is strongest in Western Australia (5.56%) and lowest in Victoria (2.87%), which could indicate either a lower rate of marriage or cohabitation, or possibly a greater acceptance of long-distance relationships. Conversely, marital or relationship breakdown preceded 4.05% of relocation decisions, with the highest percentage in Western Australia (4.52%) and the lowest in Victoria (2.82%).

Education

Educationally motivated in-migrants are most significantly represented in Victoria, where 21.03% of in-migrants moved to be close to their place of study, a rate considerably higher than the national average of 12.15%. This suggests that Melbourne's educational institutions might have a strong pull factor, possibly due to their reputation or the variety of courses offered. In contrast, New South Wales and Queensland have lower percentages (9.51% and 8.87% respectively).

Housing

Housing considerations play a substantial role in migration patterns to capital cities. Nationally, a sizeable 16.2% of moves were primarily motivated by housing needs or preferences. Statewide trends exhibit notable variations, revealing how regional factors influence housing-driven migration. Queensland has the highest percentage of people moving for a larger or better place at 4.13%, with South Australia the lowest (2.99%). Downsizing or seeking less-expensive housing does not appear to be a primary reason for moving within states, although it does factor into the decision for some people. The highest proportion of in-migrants looking for more affordable places to live are in Western Australia (4.07%) and Queensland (3.52%), and the lowest in South Australia (0.85%). The motivation to acquire one's own place is the most prominent housing-motivated move reason at 6.92% nationally, strongest in Western Australia (8.21%) and weakest in New South Wales (5.09%). All states—apart from New South Wales—recorded higher than national averages, which may indicate favourable conditions in most states for first-time buyers or those looking to own their own property.

Health

While less substantial than the other identified factors, healthcare considerations do appear to influence some in-migration decisions. At a national level, 3.28% of individuals cited health reasons as a driving factor in their move. However, this varied considerably across states, with South Australia recording the highest percentage (4.27%) and Victoria the lowest (2.56%). Variations in healthcare availability, affordability, and quality across states may attract those with specific health needs or priorities.

4.3.2   Move reasons for out-migrants by state

Figure 21 shows the reasons for moving for out-migrants from capital cities for each state.

Figure 21: Out-migrants reason for moving, by state, 2003–2020
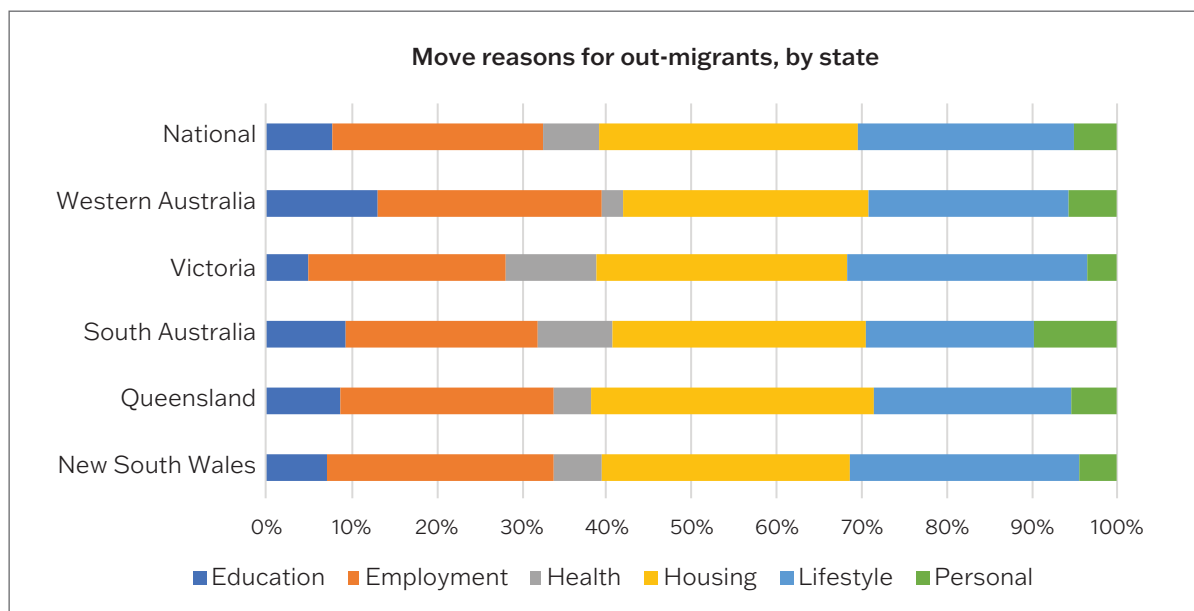
Source: HILDA data, 2003–2020.

Notes: Number of records in each state: 626 in NSW, 607 in Queensland, 214 in Victoria, 547 in South Australia, and 160 in Western Australia.

In *New South Wales*, the primary reason for moving out of cities is housing, at 29.23%, which is similar to the national average of 30.45%. Employment is the second most significant reason, at 26.68%, which is higher than the national average of 24.88%. Lifestyle choices are also a significant factor, at 27.0%, which is above the national average of 25.21%. Education and health reasons are less prominent than the national average, at 7.19% and 5.43% respectively.

Victoria shows the lowest percentage for education as a reason for out-migration (4.75%), which is substantially below the national average (7.66%). The leading reason for out-migration in Victoria is housing, at 29.43%, which is very similar to the national average. Employment and lifestyle reasons are also aligned with the national trends at 23.22% and 28.15%, respectively. However, moving for health reasons (10.79%), is significantly higher than the national average.

In *Queensland,* housing is the predominant reason for out-migration at 33.28%, which is considerably higher than the national average. Moving for lifestyle (23.06%) is slightly below the national rate. Employment reasons are 25.04%. In contrast, education and health reasons are less influential than the national average, at 8.73% and 4.45%, respectively.

In *South Australia*, education (9.35%) and health (8.88%) are reasons for out-migration at proportions higher than the national average. Housing and employment reasons are 29.91% and 22.43%, respectively, with both percentages being slightly below the national rates. Similarly, moving out of Adelaide for lifestyle, at 19.63%, is well below the national average. Moving to Adelaide for health reasons (8.88%) is significantly higher than the national rate (6.64%).

In *Western Australia*, the most prominent reason for moving out of cities is education (13.13%), which is much higher than the national average. Housing and employment are close to the national averages, at 28.75% and 26.25%, respectively. Health reasons are notably low at 2.5%, well below the national average. Lifestyle reasons in Western Australia are slightly below the national average at 23.75%.

Housing

One of the most prominent reasons people move away from capital cities is housing. Across all states, a significant proportion of out-migrants cited reasons related to housing as their primary motivation. For example, in New South Wales, 13.58% of out-migrants said they moved to get a place of their own, 6.23% wanted a smaller/less-expensive place, and 4.15% wanted a larger/better place. This highlights the important role that housing affordability and availability play in out-migration decisions. Similar trends are seen across all states, closely reflecting national figures.

Lifestyle

Lifestyle factors also play a major role in out-migration from capital cities. In all states except Western Australia, seeking a change of lifestyle was the most common reason people gave for moving, ranging from 12.15% in South Australia to 22.30% in Victoria.

Employment

Employment-related reasons were also significant motivators for out-migration—although to a lesser extent than housing and lifestyle. Within this category, the reasons for moving varied. Queensland (8.57%) and Western Australia (7.5%) recorded above national rates (5.80%) for out-migrants moving to start a new job with a new employer. No substantial deviation from the national rates is noted for other states.

Education

In the education category, a small but significant proportion of out-migrants moved to be closer to a place of study, particularly in Western Australia (13.13%), South Australia (9.35%) and Queensland (8.73%). This suggests that regional universities in these states have a role in attracting young people away from capital cities.

Health

Health-motivated reasons show a substantial difference compared to in-migrants nationally, at 6.64%. In particular, South Australia (8.88%) and Victoria (10.79%) had significantly higher than national rates, with Western Australia having the lowest rate (2.5%).

Personal reasons

Personal reasons were not a significant factor for out-migrants. Reasons such as moving to be closer to family or friends, or experiencing marital breakdown, were cited by some out-migrants, but they are not the primary driver for moving out of capital cities.

4.4   Summary

The micro-behavioural analysis of in-migrants and out-migrants can help develop policies tailored to the specific individual characteristics and motivations of different locations, which can then be used to change migration patterns. Key observations for policy makers include the following.

- The disparity in household income and net worth between in-migrants and out-migrants suggests the need for policies that address income inequality that may lead to spatial disparity. While this finding may partly reflect the older average age of out-migrants compared to in-migrants, it highlights the importance of policy mechanisms designed to avoid lower-income residents being priced out of growing regional areas by newly-arrived out-migrants from capital cities. In particular, government support for social and affordable housing development in regional areas should be a key focus.

- Understanding the specific motivations for migration in different states can inform state-level policies. For example, the particularly large proportion of in-migrants in Victoria who move to Melbourne for educational reasons may highlight a particular need to support regional university campuses in that state.

The following chapter identifies existing policy settings affecting migration, and the final chapter discusses policy options based on the research findings.

5. Review of migration policy levers

- **A review of current policies designed to attract and retain regional populations shows a strong focus on incentive policies targeting key workforce sectors.**

- **Nationally, health workers and school-level educators are the targets of the most incentive programs.**

- **Many policies target both attraction and retention, although new migrants may receive additional benefits to cover extra costs (e.g. relocation costs).**

- **Governments should consider expanding incentive schemes for industries for high-value, sustainable regional growth (e.g. urban planning, construction, universities, incubator schemes).**

- **Policy innovation can target different workforce sectors in different regional areas, in line with the principles of place-based policy development.**

5.1   The role of policy in driving regional migration

There is debate about the role of governments in shaping migration outcomes. A recent AHURI report (Vij, Ardeshiri et al. 2022: 57) concluded:

> *The absence of a coherent and consistent policy framework driving the growth of regional Australia has meant many parts of non-metropolitan Australia have either not grown or have experienced population decline … There has been ongoing debate about the most appropriate mix of policies to encourage the growth of regions …*

Much of this debate has focussed on the effectiveness of high-level strategic planning for regional growth (Beer, Crommelin et al. 2022; Gurran, Forsyth et al. 2021), with a particular interest in interventions such as:

- decentralisation programs (Commonwealth of Australia 2018)

- post-industrial economic transformation initiatives (Beer, Barnes et al. 2023)

- investment in major transport infrastructure (Denham 2018).

However, operating alongside these significant strategic investments is a suite of policy mechanisms that target potential regional migrants directly, offering incentives to encourage individuals or small organisations to relocate to regional areas, or to remain in them. While these relocation and retention policy mechanisms attract less attention than strategic planning and economic development initiatives, they may be more likely to affect the decision-making process for individuals considering regional migration. For this reason, it is helpful in discussing individual migration preferences to understand the scope of these policy initiatives and consider how they may interact with the regional migration drivers examined in the earlier chapters.

The findings of the earlier chapters demonstrate that the decision to move from a capital city to a regional area often involves a complex decision-making process, weighing up employment and educational opportunities, family commitments and lifestyle preferences. Given this complexity, questions remain about the extent to which government policy can drive relocation from capital cities to regions and, if so, which policies are best suited to achieving these outcomes. Reviewing the policy mechanisms currently in place that are designed to shape individual relocation and retention decisions helps to shed light on the role of government in driving regional growth outcomes. The policy typology highlights opportunities for new approaches to using targeted policy interventions, which can be aligned with broader regional development policy trends (Beer, Crommelin et al. 2022).

Examples of the types of policies considered include:

- varying visa conditions—e.g. the Regional Sponsored Migration Scheme Visa program

- relocation incentive schemes—e.g. the federal Relocation Assistance to Take Up a Job program

- policies to support the growth and sustainability of regional tertiary education facilities—e.g. regional student/trainee rotation programs

- location-based variations in government support schemes—e.g. the additional Remote Area Allowance for recipients of federal income support payments, and the regional Seniors travel card

- policies to facilitate regional housing access—e.g. the regional First Home Owner Grant.

A typology of existing policy settings was mapped across different levels of government.

5.2   Identifying a typology of incentive policies

To identify a typology of current relocation and retention policies directly targeting regional migrants, we undertook a desktop review of federal and state/territory government websites (excluding the ACT). A total of 101 relevant policies were identified, of which 49 were federal policies. The remaining 52 policies are shown by state/territory jurisdiction in Figure 22.

Figure 22: Relocation and retention policies identified by state jurisdiction
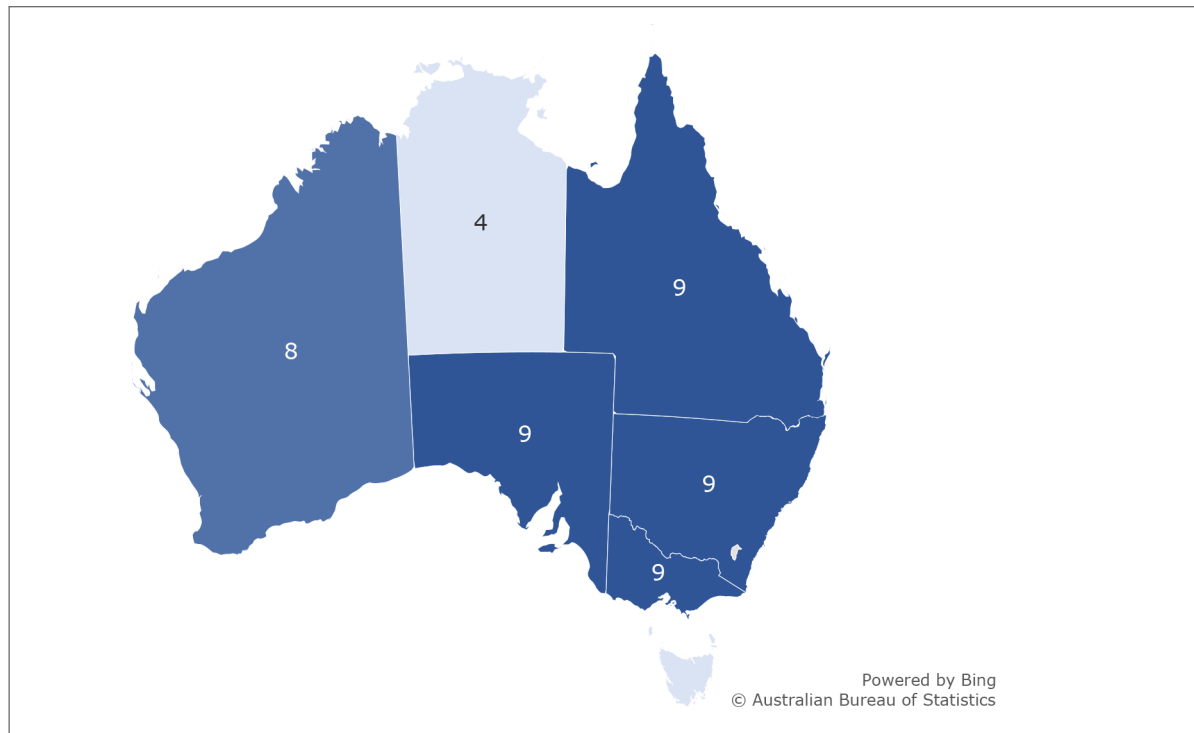
Source: Authors, identified by desktop review.

Notes: N = 52.

We reviewed each policy and categorised them as follows.

- Policy aim: whether the policy seeks to attract new domestic or international migrants, and/or whether retention of existing population is a stated policy goal.

- Policy target: which subset of the population the policy targets, if any—e.g. a specific workforce sector.

- Policy mechanism: what types of incentives are offered to encourage migration/retention.

The following three sections review the findings by aim, target and mechanism.

5.2.1   Policy aim

The policies identified in this research have three main aims:

- Attraction of new domestic migrants.

- Attraction of new international migrants.

- Retention of existing residents.

Figure 23 shows the aim for the policies identified in our review. In many cases, a single policy may have two or three aims. For example, a policy designed to address teacher shortages may be open to teachers already working in regional areas, as well as to new teachers relocating. These policies often involve a suite of incentives, not all of which are available to all candidates. For example, relocation costs would be available to a migrating teacher, while retention bonuses are available to both migrating and local teachers. As such, one policy may be counted against two or three aims, hence the difference in number of policies identified for the states (52) and in total (101).

Figure 23: Regional incentive policies by goal
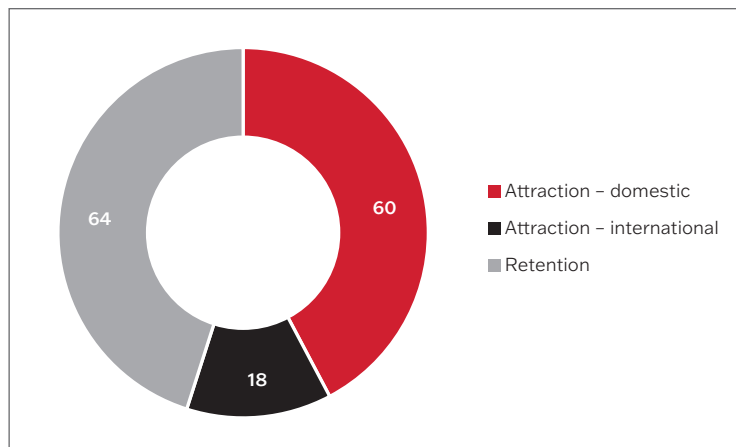
Source: Authors, identified by desktop review
Note: N = 142.

Of particular interest is the relatively even split between policies that target new migrants and the policies directed at retaining the existing population. While there is sometimes a perception in regional areas that policy makers are more focussed on attracting new residents than ensuring retention of those already in regional areas (see Crommelin, Denham et al. 2022 for discussion), this review suggests that current policy settings weight both aims fairly equally.

5.2.2   Policy target

A majority of policies are directed at attracting specific workforce sectors to either move to, or remain in, regional areas. Figure 24 shows a breakdown of the identified policies by target sector/workforce, excluding those policies that do not target any specified workforce or industry sector.

Incentives for healthcare workers are most common, with incentives for school-level education workers the second most common. The category of 'skilled workers' includes those roles targeted by Australia's regionally focussed visa programs, which include roles in agriculture, tourism, the aviation industry, business management and a small number of public service roles.[3]

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[3]   For the full list of occupations see the Regional Occupations List (ROL) in *Migration (LIN 19/051: Specification of Occupations and Assessing Authorities) Instrument 2019* (Cth). Available at: https://www.legislation.gov.au/Details/F2022C00574

Figure 24: Number of policies targeting specific sectors or workforce
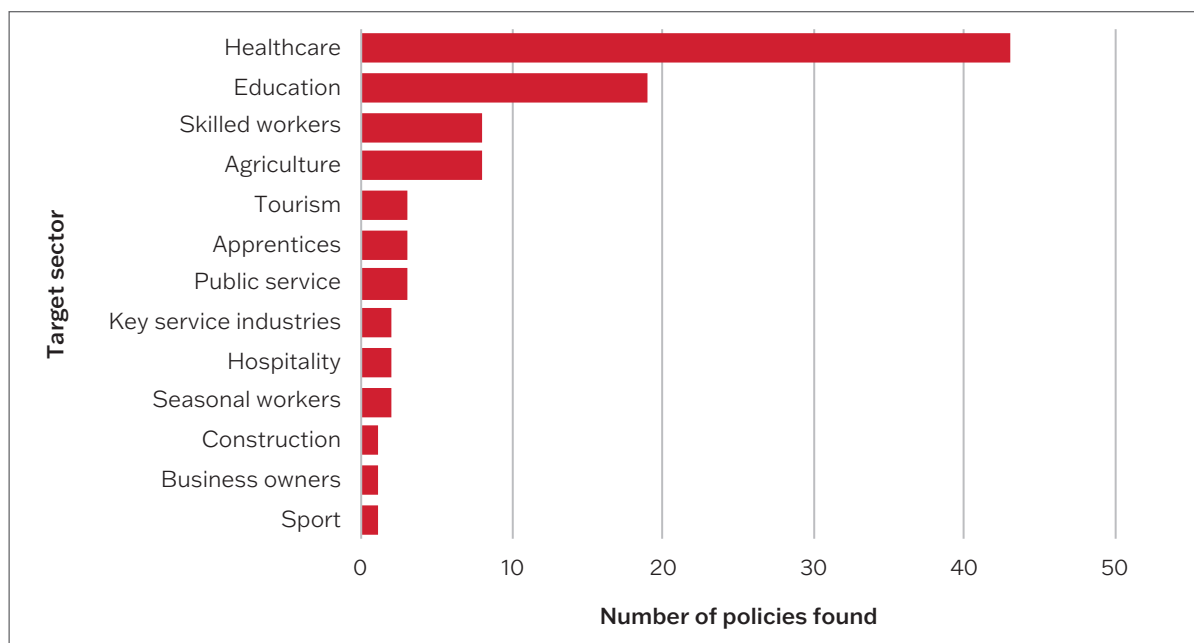
Source: Authors, identified by desktop review

Note: N = 96. Across 101 policies, 108 target sectors were identified, with 12 non-sector specific policies excluded.

By contrast, only a dozen policies were identified that did not target one or more employment sectors. These include regional First Home Owner Grants, visa policies directed at asylum seekers, and policies designed to encourage tertiary students to choose regional universities.

In addition to the policies identified here, there is also a range of policies that seek to help specific regional industries grow by funding business planning and development, new infrastructure and equipment, industry events and other related business costs. However, these types of policies are not included in this review as they target individuals only indirectly—that is, by creating new jobs that in turn attract new residents. As noted above, these policies fit more comfortably within the scope of what may be described as strategic economic development policies, rather than policies to attract or retain individuals. For this reason, it is important to note that the data depicted in Figure 24 only represent part of the scope of growth-related policies in regional areas.

5.2.3   Policy mechanisms

Policies designed to encourage regional migration and retention adopt a range of mechanisms and incentives. These can be broadly grouped into six categories: immigration opportunities; tertiary study support; training and career advancement opportunities; relocation support; housing subsidies; retention incentives; and business benefits. Table 9 lists the different policy types within each category, while Figure 25 shows the number of policies that adopt each kind of incentive or mechanism.

Table 9: Incentive mechanisms grouped by category

Immigration	Visas	Temporary worker migration schemes	
Study	Student loan reduction	Scholarships	
Career	Training courses	Career support, e.g. coaching	Extra career pathways
Relocation	Temporary accommodation costs	Travel costs	Costs of family/city visits
Housing	Housing subsidies	Home buyer grants	
Retention	Retention bonus	New business loans	Improved earning potential, e.g. higher Medicare rebates
Business benefits	Small grants	Business attraction grants	Tax exemptions

Source: Authors, based on desktop review.

The different policy mechanisms show a willingness to experiment with various strategies to encourage migration and retention. Looking more closely at how these different mechanisms are implemented, it is notable that only two sectors—healthcare and education—have packages with multiple incentives. For example, the Northern Territory's 'Teach In the NT' policy provides relocation costs, a retention bonus, travel allowance, career advantages, additional leave and housing subsidies. This more holistic approach to addressing multiple factors that inhibit regional attraction and retention could be extended to policies targeting other industry sectors.

Figure 25: Range of policy mechanisms used to attract and retain regional population
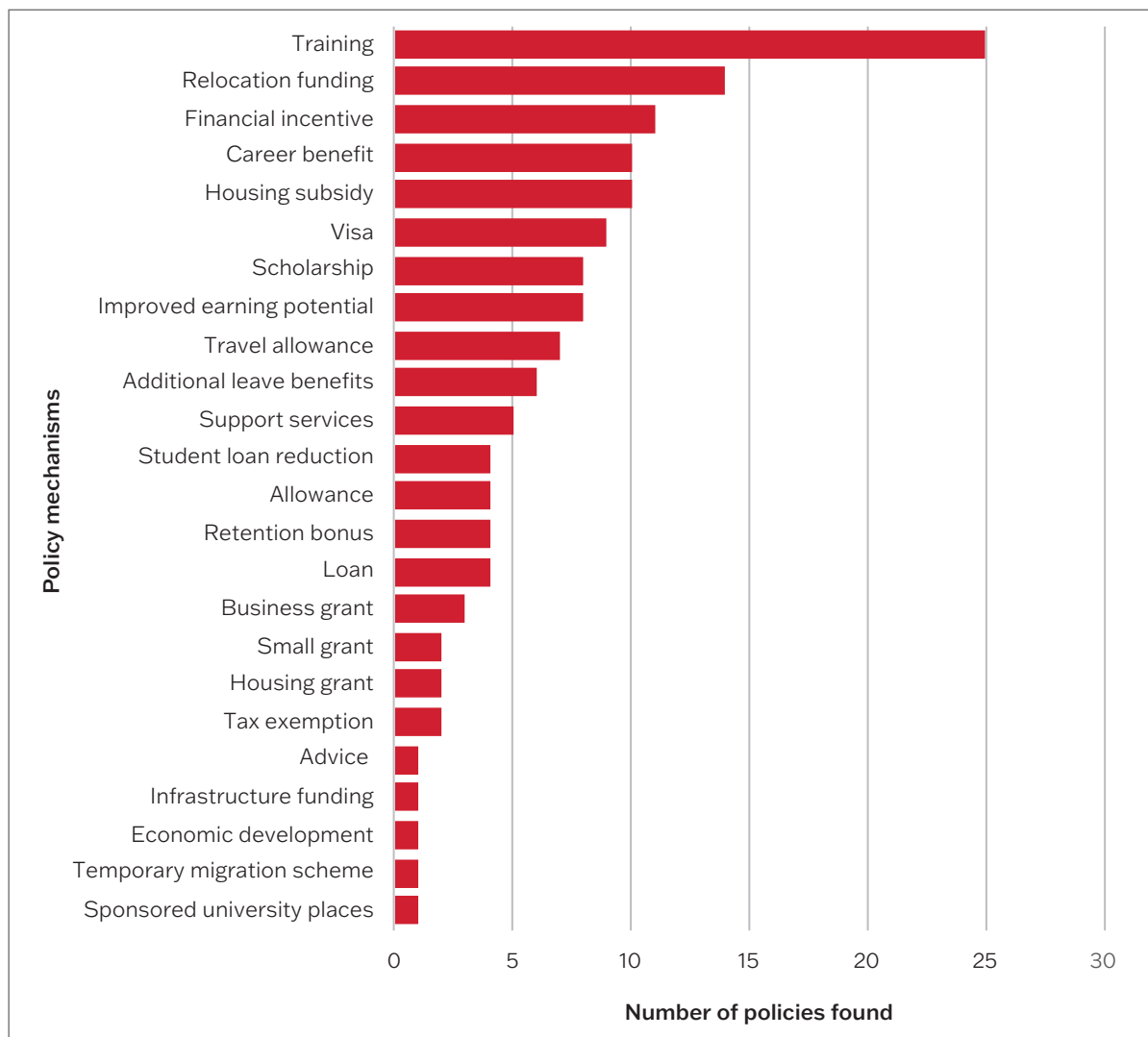
Source: Authors, based on desktop review of 101 policies. N = 143.

5.2.4   Policy patterns

When the identified policies are viewed collectively, the similarity in approaches across jurisdictions is noticeable. Overall, there is a notable homogeneity to the policy approaches adopted by state and territory governments— which is not surprising, as they face similar challenges. For example, every jurisdiction has policies in place to attract healthcare workers (particularly doctors) and school-level educators to regional areas. In practice, this may mean that the advantage of these incentives is partly cancelled out, at least in terms of one jurisdiction being able to attract population from another. This has resulted in a competition to increase the value of these incentives, which has recently been occurring in healthcare, which Queensland Health Minister Yvette D'Ath described as an 'arms race' between jurisdictions (Jurss-Lewis 2023).

Nearly two decades ago, Collits (2004: 89) observed that 'not all governments agree on every regional policy issue, but there has nonetheless been clear policy convergence'. Our review suggest this observation continues to hold, and that there is significant room for new policy innovation to help drive greater regional migration.

Most policies are replicated across the country, and there are only a few policies that seem to be unique to a particular jurisdiction:

- Western Australia has a policy of supporting regional athletes to travel to events, thus reducing the need to move to a metropolitan area to access competitions.

- A South Australian program offers small grants for the spouses of medical professionals who choose to work in regional areas, thus targeting the well-documented challenge of ensuring both partners find meaningful opportunities to thrive in their new regional location (see Crommelin, Denham et al. 2022).

- In New South Wales, the Department of Regional NSW highlights the benefits of a 'Regional Gap Year' for urban school-leavers, and 'the Welcome Experience' identifying key representatives in regional areas to help welcome new arrivals.

5.3   Policy setting alignment with the migration analysis

The analysis in Chapter 4 shows that the reasons for in-migration and out-migration between capital cities and regions vary: more people move to capital cities for education opportunities, while housing affordability and lifestyle reasons drive more out-migration to regional areas. These findings reflect long-established trends in regional migration in Australia, where young adults move to capital cities for tertiary education, then may return to a regional area when they are older. Here are our observations about the incentive policies, based on these findings:

- Tertiary education opportunities remain a strong driver of migration away from regional areas to capital cities. Reversing this trend could help support regional growth and bring other economic benefits. As Li, Denham et al. (2022) note, growth in tertiary education and research necessarily means a growth in high skill and high-value employment, which is important to ensure that population growth is sustainable (as opposed to having growth only in low-wage service industries).

- Housing affordability and availability is a driver of migration to regions, yet only a small proportion of the incentive schemes identified target the industries that help increase housing supply, including urban planners, architects and construction workers.

Chapter 4 also shows that health is identified as a reason for migration in either direction by only a small proportion of respondents. This may suggest that while accessing healthcare is a serious concern for many regional residents (see Crommelin, Denham et al. 2022), this may only translate into a decision to move to a capital city for a relatively small percentage of people who can afford capital city housing.

Health and education were the largest and third-largest industries in regional areas in 2011 and 2016, with both sectors growing during this period (Li, Denham et al. 2022). Given these trends, further research to examine the role incentive policies play in facilitating this growth would be very valuable. It would help to determine whether the 'arms race' that is now underway between governments to attract healthcare workers is actually improving the health workforce in regional areas.

5.4   Policy alignment with related research

Beyond the observations from comparing the policy typology findings with the findings of the migration analysis, it is also helpful to reflect on how the policy typology findings align with previous research on regional development. A recent AHURI Inquiry into growing Australia's smaller cities (Beer, Crommelin et al. 2022) suggested several policy options, including:

- developing and activating land-use planning tools

- implementing place-based policies nationally

- growing smaller cities as research and education hubs

- developing smaller cities as preferred retirement destinations.

While achieving these objectives would require a much broader suite of strategic policies beyond the scope of the incentive-based policies reviewed here, it is nonetheless useful to consider these policy goals alongside the finding of this analysis. A few key observations emerge.

The role of planning

The role of planning is central to ensuring that regional growth is well managed and does not undermine the affordability and amenity drivers of regional migration. Well-resourced local planning departments are essential to supporting this growth. However, none of the incentives identified in this review target urban planners as key workers. A new cadet scheme began in New South Wales in mid-2023 to support new planners to complete their studies (see Box 1). The strong response to this scheme highlights an opportunity to develop further incentive programs for planners and related industries—such as urban designers, architects and transport planners— would be well received.

The number of policies that target construction workers is also relatively small. To support growth in regional areas, more incentives to increase regional housing development capacity may be valuable. This could extend beyond construction workers to include draftspeople, certifiers, surveyors and other related industries.

Box 1: Case study: NSW planning cadet scheme

Case study: NSW planning cadet scheme

The NSW Government launched the Strong Start Cadetship program in May 2023 to address local planning workforce shortages and support the employment of new planning cadets. The program includes $1.85 million in grant funding and support to encourage councils to employ additional cadet planners and develop them into more senior roles, as well as development for existing planners in NSW councils. While not targeted solely at regional councils, 60 of the 74 councils that applied were from regional areas (NSW Government 2023). Minister for Planning and Public Spaces Paul Scully noted that 'Local government has been crying out for planners, especially in some of our regional areas, where some positions have remained vacant for some time …We're addressing the skills shortage from the ground up, by helping councils build a pipeline of young planning talent aimed at setting up the state's planning future for success.'

Source: Authors, based on NSW Government 2023

Place-based policies

Implementing place-based policies requires tailoring policy mechanisms to local needs and conditions. The policy review highlights policy convergence across states and territories, with limited targeting or policy innovation. Examples of more targeted interventions, such as the Murray-Darling Medical Schools Network or Victoria's targeted Rural Workforce Pilot, should be considered to tailor interventions to local needs.

Research and education hubs

The goal of growing smaller cities as research and education hubs reflects the value tertiary education facilities bring to regional areas, both as economic drivers and as mechanisms for retaining residents. Yet while education workers are a key focus of attraction and retention policies identified for this review, no policies were identified that were directed at tertiary education staff. All policies targeted early learning, primary and/or secondary school educators. Similar policies for tertiary education workers may help support the growth of key regional cities.

Retirement destinations

The successful development of smaller cities as preferred retirement destinations will, as Beer, Crommelin et al. (2022) note, be highly dependent on ensuring health services are available to support ageing residents. However, despite the relative plethora of policies and incentives designed to attract healthcare workers to regional areas, shortages in these fields persist, as they do in urban areas. Furthermore, few of these policies target aged-care workers, a sector that needs significant investment for regional areas to adequately service growing retiree populations. New approaches to encouraging healthcare workers to move to or stay in regional areas will require ongoing innovation. The federal government (National Health Reform Agreement [NHRA], 2020) has recently undertaken a significant overhaul of regional incentive policies for healthcare workers, but the effects of this remain to be seen.

Overall, this chapter shows that ongoing innovation in regional policy is needed, including more clearly place-based approaches to attract new residents. In particular, there is an opportunity to realign incentive-based policies to reflect emerging regional needs and opportunities—particularly in tertiary education, healthcare and aged-care, and the development industry.

6. Policy development options

- Improve the diversity of housing and reduce the cost of housing in regional areas. Possible mechanisms including increasing the supply of developable land and the availability of social and affordable housing in regional areas, particularly those experiencing higher-income migration.

- Improve regional access to higher education by expanding regional university campuses in regional centres and online/hybrid learning options.

- Improve employment opportunities and strengthen incentives for key high-value industries such as construction and education, along with emerging and growing industries such as renewable energy.

- Improve access to amenities and services, particularly access to capital cities and access to regional amenities and services.

- Ensure adequate support for retiree migration to regional areas through affordable housing policies and incentives to attract healthcare and aged-care workers to the regions.

- Governments should consider expanding incentive schemes for industries necessary for high-value, sustainable regional growth such as urban planning, construction, universities, incubator schemes and renewable energy.

6.1   Introduction

The report documents the ongoing primacy of metropolitan areas in Australia's settlement patterns, and identifies drivers of migration between capital cities and regional areas. While the analysis undertaken here was not designed to answer the question of whether policymaking efforts should be directed towards rebalancing Australia's population, it sheds light on the question of how such a policy goal may be more effectively achieved. This is important, as previous research has identified the limitations of existing policy approaches to encouraging population growth (Beer, Crommelin et al. 2022).

With this in mind, this chapter uses the reasons for in-migration and out-migration to suggest policy development options that would either strengthen factors that attract migration from the capital cities to regional areas or address factors attracting migrants from regional areas into those cities. These options draw on the discussion of existing policies summarised in Chapter 5.

6.2   Improve diversity of housing type and tenure, and reduce costs

One factor driving out-migration from capital cities is the greater ability to purchase a dwelling in regional areas. Lower dwelling prices already attract people to move, but there is still a need for policies to ensure dwelling prices in regional areas are affordable to encourage growth in regional populations. Previous AHURI research has found that higher housing costs have a negative impact on migration to smaller Australian cities (Vij, Ardeshiri et al. 2022). Existing policies incorporate housing subsidies and grants, but more comprehensive policies are required for both land and housing construction.

Policies are needed to ensure that land zoned for residential and employment uses is available in major towns attractive to in-migrants, or where employment opportunities are likely to expand. The significance of land costs in increasing house prices has grown (e.g. Bourassa, Hoesli et al. 2011). This can reflect supply-related constraints, notably a shortage of serviced, zoned land (e.g. Richards 2008), as well as hoarding of suitable sites by developers (Murray 2020). Thus, ensuring adequate supplies of zoned housing land may ameliorate house price increases. This could involve a range of actions from housing development programs for areas that compare population forecasts with existing stocks of zoned land and identify the extra supply needed to accommodate forecast population increases. Such programs could be led by local government, with assistance from state/territory housing and planning departments, and involve liaison with local developers and infrastructure agencies about their plans. An example of a recent initiative focussing on these challenges is the Regional Workforce Pilots in Victoria. The locations of any extra zoned land could be canvassed in Local Strategic Plans in NSW and equivalents in other jurisdictions.

Councils could use stocks of their land, where available, to supply new residential land at attractive prices.

At the same time, regional growth will likely drive housing price increases, even with efforts to ensure adequate supply. This is particularly the case given the increased earning and buying power of out-migrants from capital cities (see Section 4.1). This means that programs are needed to increase the availability of social and affordable housing in regional areas, to help ensure that residents in growing regional cities are not priced out of their communities. Recent AHURI research (Reynolds, Parkinson et al. 2024) shows affordability pressures for lowest-income earners are already widespread in regional areas. Lawson, Pawson et al. (2018) highlight the significant cost differential in developing social housing across regional and metropolitan areas. While it is important to develop social housing in locations that provide access to good services and employment—and not simply the cheapest locations to develop—there are opportunities for social housing development in regional centres that would help support sustainable population growth, while also bringing the broader benefits from investment in this form of infrastructure (Lawson, Denham et al. 2019).

Building construction costs are another factor in housing costs. A major component of construction costs that might be amenable to policy initiatives is the supply of skilled construction labour. To keep residential building costs down, the supply of skilled construction labour should be increased in in-demand areas, perhaps drawing on the Victorian tradespersons assistance scheme. This might be assisted by policies such as an immigration points bonus for construction workers living in non-metropolitan areas for a specific period. Local Technical and Further Education (TAFE) courses offering building trades qualifications must produce adequate graduates to meet local demand. This, in turn, may need new state/territory government funding.

As well as reducing housing costs, supporting diversity in housing type and tenure is important. Most out-migrants currently live in detached housing, reflecting demand and supply. A small proportion of out-migrants choose non-detached dwellings, possibly due to their lower cost. While housing, including detached housing, is cheaper in regional areas, policies that keep housing prices lower in regional areas are also relevant. Local housing policies need to ensure that a diversity of housing types is supplied. This requires integrated planning to ensure that residents choosing to live in medium density have access to necessary supporting infrastructure—particularly open space.

6.3   Improve access to higher education

There are policy challenges in reducing in-migration of younger people to capital cities because of greater tertiary education opportunities. As Mackey (2019) notes, '[f]ewer than a third of regional students commencing university in 2005 made the move to a city. By 2010, that number had risen to half, and by 2015 it was 57 per cent.' There are several possible responses, including new satellite university campuses in regional centres and online distance learning. Some regional centres already have university campuses.

Providing more scholarships for regional and remote students in regional universities would help to retain local students. Cheap accommodation for regional university students could also be attractive as a counter to high accommodation costs in capital cities. Developer loans could be provided by, or backed by, state governments as part of regional development.

Policies would also be required to attract and retain staff in higher education facilities, related to other policies to improve regional amenities and services and access to capital cities.

This is related to the suggestion by Beer, Crommelin et al. (2022) to grow smaller cities as research and education hubs, providing high skill employment.

6.4   Improve employment opportunities

Employment opportunities are a key driver of migration, and improving employment opportunities in regional areas remains challenging. In the past, the relocation of government employment, at either the federal or state level, has been used to support regional areas, but there are limits to what types of departments or agencies can be relocated.

In regional areas, emerging and growing sectors such as renewable energy may provide new place-based opportunities that complement population-based employment such as health and education.

Improving communications technology may support non-place-based employment, but it is more likely for smaller-scale employment rather than major employment sources.

It is important that strategic land-use plans zone appropriate land for employment uses, and that policies attract sufficient workers in planning and construction to implement plans.

6.5   Improve access to amenities and services

As well as access to the specific service of higher education, it is also important to improve access between regional areas and capital cities through improved transport links, and to improve access to regional cultural and recreational amenities.

6.5.1   Improve access to capital cities

Access to a desired range of amenities and services was a significant reason for in-migration to capital cities. Conversely, the lack of amenities outside capital cities is reflected in shortages of various categories of workers including health and educational professionals.

Measures that improve access to capital cities and their amenities and services can offset their lack in the regions. In turn, improving accessibility involves a range of possible policies including transport infrastructure and cost. Potterton (2022) argues that a focus on convenient same-day return transport to metropolitan areas is essential for regional centre functioning, including visits by medical professionals. His survey indicated that self-drive is the preferred transport from regional centres up to 350 km from the capital cities. This suggests that improvements to highways linking regional centres and the capital city will increase regional centre accessibility.

Beyond 350 km from a capital city, over 90 per cent of larger regional centres have airline services, with local councils indicating that service frequency and affordability are vital concerns (Potterton 2022). Capped airfares to capital cities, as operating under the Western Australian Government's Regional Airfare Zone Cap, could be necessary for affordable travel on non-tourism routes over the most extended distances (Potterton 2022).

There is much scope to improve public transport in regional areas. The feasibility of high-speed infrastructure has been studied over many years (ARA, 2021; Kim and Han, 2016). A high-speed rail route could connect the east coast capital cities of Brisbane, Sydney and Melbourne and towns in between, thus improving accessibility to capital city amenities and services. However, many regional areas would not benefit regardless of whether an inland or coastal route is chosen.

Apart from the very long-term project of high-speed rail, improvements in public transport in regional areas and to capital cities could improve accessibility to amenities and services—particularly for ageing populations (Han and Corcoran, 2014).

6.5.2   Improve regional amenities and services

Due to the differences in population size and catchment areas, amenities in regional areas will not match those available in capital cities, but improving amenities and services in regional centres can help attract and retain migrants. More research may be required on suitable levels of cultural amenities and services—such as banking and telecommunications—required to attract and retain people from capital cities.

6.6   Attract high-income migrants and support low-income migrants

During the COVID-19 pandemic, the primary trend was increased out-migration by higher-income groups from capital cities. In large part, this likely reflects the ability of high-income people to pay for more spacious dwellings in higher amenity locations, allowing them to work from home via the internet. In other cases, these migrants may have been taking advantage of incentives directed at skilled workers, particularly in the health sector.

Policy options to facilitate more of this high-value migration include expanding incentive schemes beyond current focus areas into sectors like planning, urban design and university education and research. Accessibility to capital cities for employees working from home (but who need to visit the CBD office occasionally) will also support more regional migration of this kind.

At the same time, policy makers need to focus on strategies to ensure that higher levels of higher-income migration do not displace existing lower-income residents in regional areas. Additional support for social and affordable housing in regional areas is required, as discussed in Section 6.2.

6.7   Support retiree migration

Out-migrants from capital cities are older, work fewer hours on average, and seek cheaper housing and an improved lifestyle, compared to in-migrants to capital cities. This points to an outflow of retirees to regional areas. To encourage such migration, supportive housing policies are needed (such as those outlined in Section 6.2, as well as supportive service policies for older populations, such as policies to attract aged-care workers and specialist medical and healthcare workers (as noted in Section 5.4). The 2022 suggestion by Beer, Crommelin et al. (see Section 5.4) of growing smaller cities as retirement destinations might enable economies of scale that facilitate the provision of aged-care health services, such as specialist medical facilities like operating theatres.

Nevertheless, the nationwide shortage of health and aged-care workers means that attracting such workers to the regions will require innovative new policies, as emphasised in Chapter 5. The current Working Holiday visa program (DHA, 2024) could be expanded as one potential source of workers, while federal and state capital grants and subsidies for affordable housing need to specifically target essential workers in the regions.

6.8   Conclusion

Regional development policy to attract people to regions should address housing affordability, social infrastructure development (e.g. health and education), and access to amenities important for different population groups. Implementing place-based, location-specific policies for emerging regional clusters can reduce the dominance of capital cities in Australia and promote more balanced regional development. In particular, retirees will seek affordable housing and an improved lifestyle, migrating from capital cities to regional areas where aged-care and healthcare services are accessible.

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Appendix 1: Rank-size rule

The distribution of city size in Australia

In general, primacy was found to be characteristic of small countries or developing countries having a low per capita income, depending heavily upon the exports of an agricultural economy, and experiencing rapid population growth, which is common to the so-called 'underdeveloped countries' (London 1977). Moreover, the presence of a primate city can impede regional economic growth. Various elements are associated with parasitism, encompassing the overriding concern of hindering national development. These elements include impeding the development of other cities, and primarily focussing on providing goods and services to foreign or indigenous elite markets. This may perpetuate a regional imbalance in housing and economic opportunities.

Table A1 shows the Australian population distribution pattern and the comparison with other countries based on the population size and population ranks of cities. Ellis and Andrews (2001) used Zipf's Law to quantify the rank-size relationship of different countries. The estimated Zipf coefficient could be lower than 1, where smaller cities had lower average growth rates or higher variances of their growth rates than the larger cities. A lower mean growth rate could occur if the natural population increase is roughly the same nationwide, but larger cities systematically attract residents away from smaller cities. Similarly, smaller cities might have narrower industrial bases and thus be more susceptible to industrial shocks (Ellis and Andrews 2001).

Australia's share of the urban population in the two largest cities, Sydney and Melbourne, is 54.2 per cent, almost three times higher than the USA (15.7%) and the UK (19%). Large countries like Brazil (26.8%), Canada (42.6%), Spain (28%) and Russia (19%) show a much lower primate city distribution. Australia's low coefficient implies that city populations are lower down the rank ordering than Zipf's Law predicts. Indeed, Australia has few middle-sized cities according to the UN definition of between 500,000 and 1 million inhabitants. This suggests that population growth behaves roughly the same across Australia's small towns, but small towns behave differently from large towns and cities (Ellis and Andrews 2001). Thus, it is crucial to first understand why Australia has so few middle-sized cities, then to design and implement regional development and urban growth policies in Australia.

Table A1: International comparison of primate city distribution

	Zipf curve exponent estimates		Share of urban population in	Primacy ratio[a]
	OLS	MLE	two largest cities	
Argentina	0.68	0.80	68.7	8.92
Australia	0.62	0.71	54.2	1.18
Belgium	0.92	1.28	47.7	1.44
Brazil	1.22	1.19	26.8	1.77
Canada	0.82	0.82	42.6	1.35
China	1.08	0.56***	4.6	1.11
France	0.98	0.92	48.8	7.38
Germany	1.28	1.31	20.0	2.04
Indonesia	0.89	0.82	35.1	3.39
Italy	1.14	1.31	27.1	1.96
Japan	1.32	1.21	15.2	2.43
Netherlands	1.24	1.28	28.0	1.02
New Zealand	0.74	—	59.1	2.97
Poland	1.31	1.39	21.4	1.97
Russia	1.18	1.06	19.0	1.97
Spain	1.32	1.36	28.0	1.86
Ukraine	1.11	0.96	20.9	1.64
United Kingdom	1.83	2.23***	19.0	6.90
United States	1.01	0.76**	15.7	2.04

Notes:	MLE estimates exclude New Zealand due to insufficient number of cities. **,*** indicates related Lagrange multiplier test of $\zeta = 1$ rejected at 5 per cent and 1 per cent significance levels.
	(a) Ratio of largest city to second-largest. If Zipf's Law is true, this ratio should be 2.
Sources:	See Appendix B

Source: Ellis and Andrews, 2001, p.16

Figures A1 through A5 show the rank-size distribution of cities in each state, highlighting the skewed population distribution. Notably, Sydney, the largest city, is approximately 13 times larger than the second-largest city in New South Wales, Newcastle.

Figure A1: Size distribution of cities in New South Wales, 2021

Source: ABS Census 2021.

Note: Cities are defined as SA4.

Figure A2: Size distribution of cities in Victoria, 2021
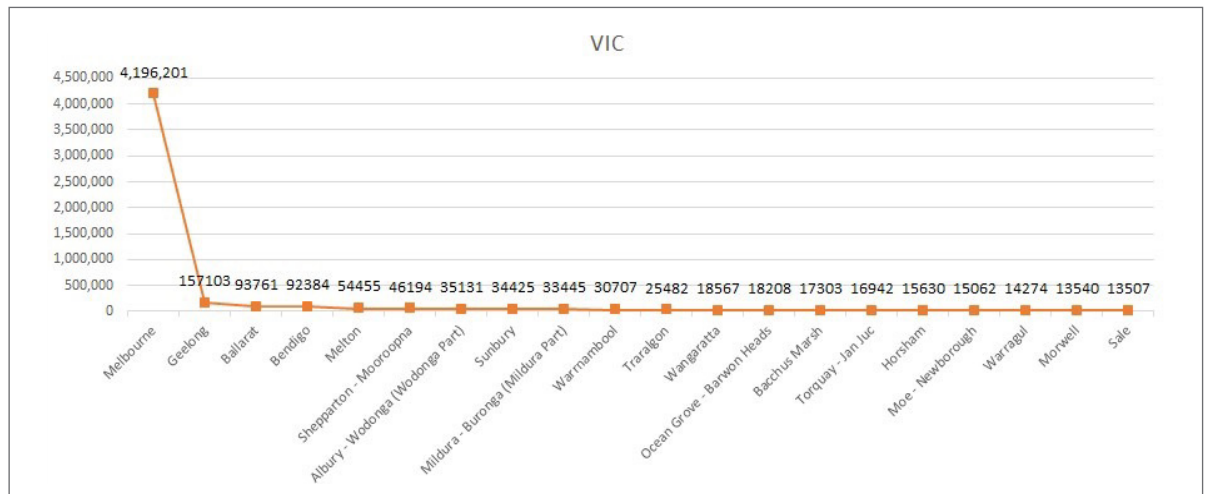
Source: ABS Census 2021.

Note: Cities are defined as SA4.

Figure A3: Size distribution of cities in Queensland, 2021
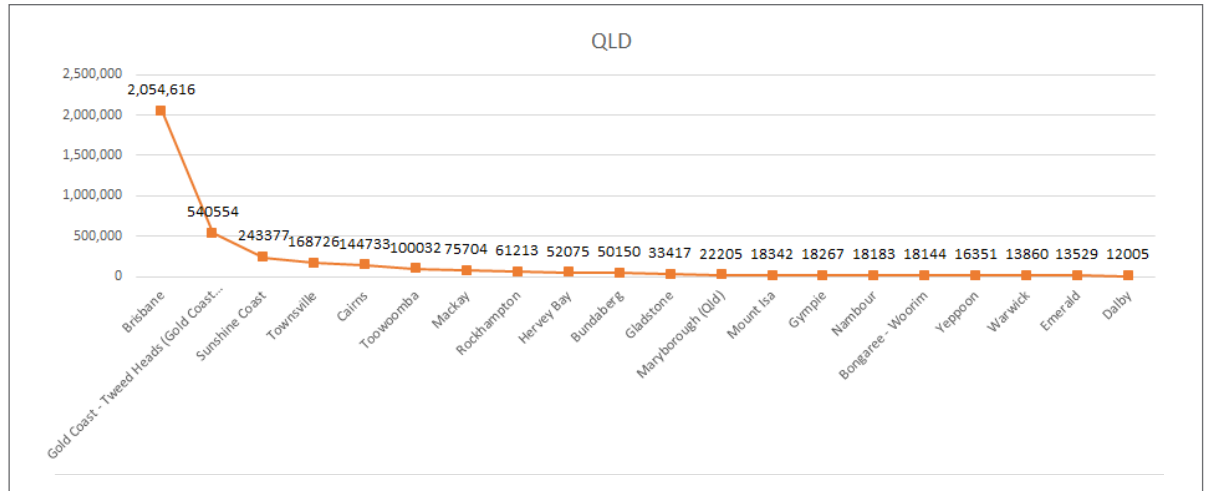
Source: ABS Census 2021.

Note: Cities are defined as SA4.

Figure A4: Size distribution of cities in South Australia, 2021
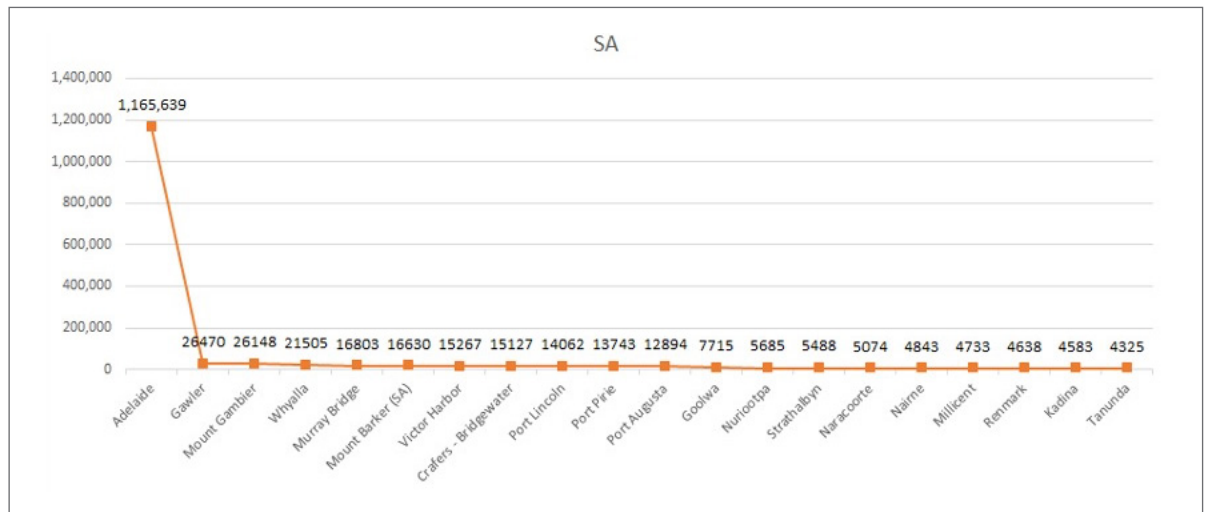
Source: ABS Census 2021.

Note: Cities are defined as SA4.

Figure A5: Size distribution of cities in Western Australia, 2021
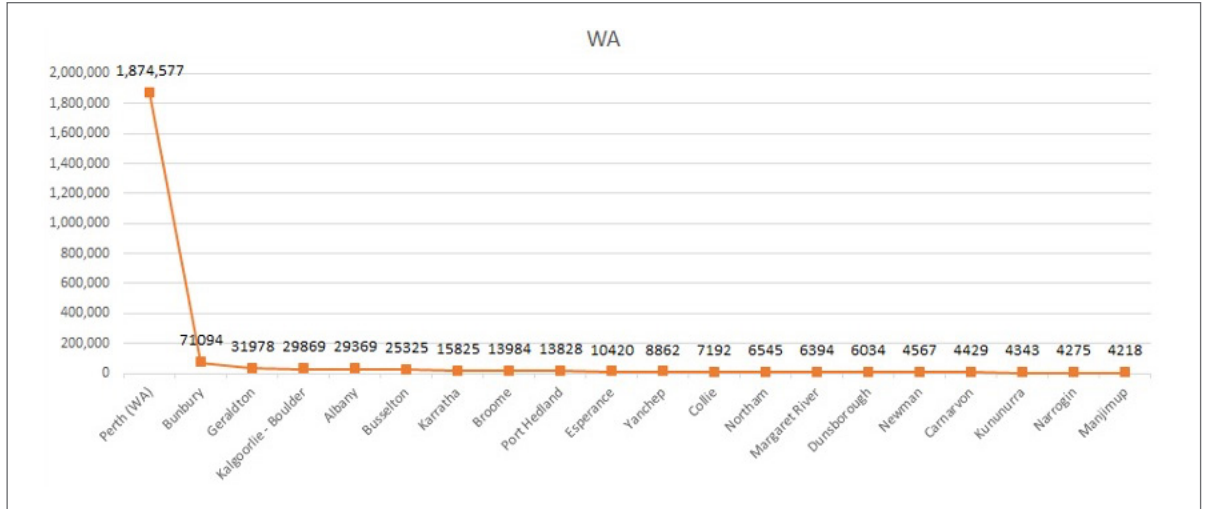
Source: ABS Census 2021.

Note: Cities are defined as SA4.

Appendix 2: Origin and destination matrices for migrants, by state

Table 1a: Data for analysis of origin and destination matrix in New South Wales, 2016–2021

	Sydney	Queanbeyan	Snowy Mountains	Goulburn - Mulwaree	Bathurst	Lithgow - Mudgee	Orange	Coffs Harbour	Dubbo	Hunter	Maitland	Wollongong	Port Macquarie	Albury	Armidale	Tamworth - Gunnedah	Newcastle	Richmond Valley	Wagga Wagga
Sydney	0	773	413	577	1382	1300	1288	1332	1420	1832	908	5113	1332	418	830	1058	7944	1446	1365
Queanbeyan	1685	0	170	179	35	18	37	29	45	25	20	86	34	36	15	37	114	23	163
Snowy Mountains	953	129	0	33	9	20	12	11	10	21	28	83	13	12	12	17	106	61	59
Goulburn - Mulwaree	1528	282	51	0	38	26	39	23	23	21	10	127	25	16	20	23	53	16	92
Bathurst	2053	19	23	39	0	696	549	41	220	67	26	65	46	19	20	69	120	18	94
Lithgow - Mudgee	2286	16	11	32	241	0	113	44	313	254	88	85	38	10	22	62	261	41	61
Orange	2538	32	25	33	537	161	0	35	486	82	27	94	64	20	60	74	180	51	118
Coffs Harbour	3057	34	39	32	52	66	77	0	115	124	62	122	201	58	435	361	378	367	76
Dubbo	1967	44	9	21	147	315	348	59	0	218	83	64	82	29	94	190	361	69	105
Hunter	4935	32	21	44	115	222	116	107	187	0	3096	75	164	20	91	510	5478	82	114
Maitland	2644	38	24	34	86	112	75	80	156	3444	0	32	128	18	69	230	6374	85	130
Wollongong	8204	100	85	114	134	132	248	57	124	77	21	0	65	128	37	82	142	62	348
Port Macquarie	4511	60	24	47	143	115	162	264	219	321	133	98	0	47	330	504	709	172	147
Albury	1045	58	22	30	28	14	46	42	46	40	25	84	39	0	26	30	69	28	608
Armidale	864	5	11	15	33	36	51	191	103	160	48	39	128	3	0	349	191	167	19
Tamworth - Gunnedah	1622	19	12	26	77	128	100	175	345	642	151	49	226	15	555	0	714	111	75
Newcastle	17952	139	59	88	418	495	427	644	778	3940	3352	243	993	107	560	1354	0	315	256
Richmond Valley	5012	60	16	53	57	56	79	319	76	119	43	130	116	23	152	171	309	0	95
Wagga Wagga	2116	160	84	166	92	64	130	54	169	94	51	183	71	411	36	88	280	50	0

Source: ABS Census 2021.

Table 2a: Data for analysis of origin and destination matrix in Victoria, 2016–2021

	Melbourne	Ballarat	Creswick - Daylesford - Ballan	Bendigo	Heathcote - Castlemaine - Kyneton	Geelong	Upper Goulburn Valley	Wangaratta - Benalla	Wodonga - Alpine	Baw Baw	Latrobe Valley	Macedon Ranges	Grampians	Mildura	Murray River - Swan Hill	Shepparton	Glenelg - Southern Grampians	Colac - Corangamite	Warrnambool
Melbourne	0	2786	797	2611	1590	5875	2745	1417	1614	1303	1797	1376	1047	1139	791	2691	605	644	1165
Ballarat	5486	0	1934	236	186	688	121	74	84	64	83	90	983	125	162	94	263	292	256
Creswick - Daylesford - Ballan	2580	1106	0	40	180	150	25	12	13	8	8	70	66	6	7	14	15	20	14
Bendigo	3727	266	92	0	2251	280	293	167	140	23	69	189	275	247	685	323	61	61	86
Heathcote - Castlemaine - Kyneton	4744	78	283	1811	0	85	153	18	38	13	23	621	60	36	101	24	16	26	32
Geelong	12368	839	160	463	193	0	165	161	225	81	143	104	474	150	198	326	370	812	590
Upper Goulburn Valley	6063	45	37	98	112	96	0	188	120	38	39	199	45	38	42	253	37	16	26
Wangaratta - Benalla	1914	55	19	70	41	86	323	0	653	46	35	22	35	36	55	182	23	16	22
Wodonga - Alpine	2697	78	32	81	47	141	182	691	0	37	38	33	46	64	46	145	24	42	23
Baw Baw	2911	27	3	31	15	42	36	15	26	0	1220	10	12	20	10	40	10	28	19
Latrobe Valley	2125	43	12	43	18	53	58	37	32	1300	0	8	42	23	16	29	26	15	24
Macedon Ranges	2954	29	59	70	402	55	110	10	4	7	9	0	8	9	22	11	8	5	8
Grampians	1615	370	96	149	67	254	47	31	29	24	43	24	0	125	165	27	235	121	96
Mildura	941	87	15	113	22	64	35	7	30	12	26	20	111	0	395	43	26	18	28
Murray River - Swan Hill	787	114	48	236	70	80	39	19	21	33	20	33	169	158	0	34	14	30	18
Shepparton	2631	52	20	203	38	123	389	198	80	43	22	31	51	49	87	0	24	27	13
Glenelg - Southern Grampians	792	129	41	57	53	266	32	18	25	22	20	17	278	47	51	35	0	102	335
Colac - Corangamite	1219	189	47	52	22	522	44	14	18	6	19	11	67	10	27	21	70	0	462
Warrnambool	1655	144	29	65	45	285	41	20	36	10	19	24	239	37	50	19	492	650	0

Source: ABS Census 2021.

Table 3a: Data for analysis of origin and destination matrix in Queensland, 2016–2021

	Brisbane	Cairns	Innisfail - Cassowary Coast	Port Douglas - Daintree	Granite Belt	Rockhampton	Biloela	Gladstone	Gold Coast	Mackay	Sunshine Coast	Toowoomba	Charters Towers - Ayr - Ingham	Townsville	Bundaberg	Gympie - Cooloola	Hervey Bay	Maryborough
Brisbane	0	4828	566	217	1300	2877	415	2098	9478	2944	4546	6238	492	5974	2169	1202	1506	984
Cairns	2476	3522	1538	568	90	268	23	126	514	401	304	228	262	1742	155	86	114	96
Innisfail - Cassowary Coast	381	1250	0	52	10	53	4	30	57	57	66	34	114	328	66	25	31	23
Port Douglas - Daintree	100	342	14	0	6	14	0	11	60	19	18	5	0	47	7	3	6	8
Granite Belt	1515	79	18	9	0	57	15	34	219	61	128	833	23	67	63	38	42	55
Rockhampton	1699	275	54	22	69	0	721	735	279	536	256	237	92	360	368	129	131	156
Biloela	217	26	10	0	13	282	0	183	19	60	47	66	7	37	53	27	24	35
Gladstone	1475	199	35	3	52	580	203	0	222	240	271	132	40	186	513	179	243	208
Gold Coast	10102	852	71	72	199	309	28	231	0	425	450	692	65	618	255	118	236	93
Mackay	1744	465	129	22	46	584	93	412	312	0	219	246	175	769	265	128	177	89
Sunshine Coast	6760	473	62	35	135	342	67	328	527	394	0	590	66	508	361	813	260	205
Toowoomba	5860	291	44	16	1319	326	124	191	613	274	374	0	88	602	286	151	247	161
Charters Towers - Ayr - Ingham	401	297	117	19	22	47	30	40	60	131	34	77	0	1174	56	47	24	30
Townsville	3150	1719	624	89	71	436	27	246	437	906	250	446	2076	0	201	117	128	98
Bundaberg	2193	215	45	16	133	303	96	710	363	301	403	368	81	315	0	295	357	342
Gympie - Cooloola	1614	138	12	16	66	152	36	135	163	152	2200	189	45	189	183	0	136	309
Hervey Bay	1794	230	45	31	94	228	34	237	463	144	474	311	43	274	326	301	0	1573
Maryborough	1286	131	33	10	64	150	33	145	223	105	429	201	33	128	232	418	1306	0

Source: ABS Census 2021.

Table 4a: Data for analysis of origin and destination matrix in South Australia, 2016–2021

	Adelaide	Barossa	Lower North	Mid North	Yorke Peninsula	Eyre Peninsula and South West	Outback - North and East	Fleurieu - Kangaroo Island	Limestone Coast	Murray and Mallee
Adelaide	0	3202	1587	1507	1837	3078	1948	4237	2595	3964
Barossa	3967	0	263	51	98	84	132	78	79	366
Lower North	1497	280	0	241	185	90	129	69	48	155
Mid North	1045	40	196	0	119	186	302	43	37	86
Yorke Peninsula	2116	131	375	166	0	150	225	124	65	161
Eyre Peninsula and South West	1925	57	118	191	88	0	362	113	89	159
Outback - North and East	1232	46	52	199	93	354	0	69	45	93
Fleurieu - Kangaroo Island	6748	132	141	55	132	192	144	0	280	550
Limestone Coast	1855	57	71	50	55	103	60	157	0	343
Murray and Mallee	3766	338	165	115	114	196	199	466	380	0

Source: ABS Census 2021.

Table 5a: Data for analysis of origin and destination matrix in Western Australia, 2016–2021

	Perth	Augusta - Margaret River - Busselton	Bunbury	Manjimup	Albany	Wheat Belt	Kimberley	Pilbara	Esperance	Gascoyne	Goldfields	Mid West
Perth	0	4031	7238	1602	4415	9196	2754	7165	1260	1044	4682	4227
Augusta - Margaret River - Busselton	5345	0	869	418	256	417	218	319	96	87	160	180
Bunbury	5156	906	0	985	475	704	219	526	144	76	505	354
Manjimup	1930	265	643	0	171	220	71	149	38	29	92	56
Albany	3841	179	302	224	0	702	190	208	254	54	136	174
Wheat Belt	7304	123	313	134	357	0	166	342	144	101	296	402
Kimberley	2186	119	162	25	136	151	0	315	34	62	93	143
Pilbara	7123	295	560	82	184	335	426	0	76	127	140	542
Esperance	823	39	93	30	135	184	46	83	0	15	247	48
Gascoyne	761	71	57	34	58	64	56	177	16	0	15	150
Goldfields	2684	78	180	36	79	198	79	157	228	29	0	162
Mid West	2650	130	163	57	148	516	248	499	72	355	229	0

Source: ABS Census 2021.

Table 6a: Data for analysis of origin and destination matrix in New South Wales, 2011–2016

	Sydney	Queanbeyan	Snowy Mountains	Goulburn - Mulwaree	Bathurst	Lithgow - Mudgee	Orange	Coffs Harbour	Dubbo	Hunter	Maitland	Wollongong	Port Macquarie	Albury	Armidale	Tamworth - Gunnedah	Newcastle	Richmond Valley	Wagga Wagga
Sydney	0	761	453	621	1446	1365	1246	1600	1405	1967	977	4543	1644	623	922	1429	8344	1941	1545
Queanbeyan	1371	0	138	160	39	28	42	40	38	36	20	73	25	42	27	9	94	24	187
Snowy Mountains	743	134	0	30	11	7	23	15	16	37	17	85	12	11	5	20	90	31	71
Goulburn - Mulwaree	1476	261	43	0	23	18	50	10	28	67	21	85	14	23	6	24	70	35	76
Bathurst	2415	15	20	52	0	613	469	37	232	74	29	49	40	30	32	64	135	48	117
Lithgow - Mudgee	2670	10	6	23	297	0	125	28	265	233	52	71	43	11	35	94	220	27	55
Orange	2347	37	9	39	525	192	0	38	498	61	40	42	35	38	43	72	159	42	106
Coffs Harbour	2576	72	22	22	50	54	69	0	107	155	55	69	184	59	327	313	301	331	80
Dubbo	1772	29	10	28	149	275	274	87	0	177	53	32	50	33	66	210	291	74	85
Hunter	3357	19	28	34	76	163	62	103	190	0	2041	71	184	36	104	490	3892	102	99
Maitland	1788	23	20	14	69	93	102	94	114	2785	0	33	139	30	36	179	4524	45	111
Wollongong	7074	72	83	134	94	151	159	78	148	65	12	0	38	117	43	83	199	72	288
Port Macquarie	4057	66	35	44	150	93	124	241	162	297	125	62	0	51	201	329	557	185	137
Albury	1001	50	20	48	68	17	44	19	64	36	30	43	32	0	24	21	63	51	542
Armidale	896	19	16	7	38	30	41	254	107	165	48	19	193	13	0	453	192	175	42
Tamworth - Gunnedah	1714	21	22	33	74	122	79	207	321	703	188	55	181	24	474	0	648	122	74
Newcastle	12963	87	76	101	269	440	298	583	636	3132	2802	221	954	80	387	1053	0	306	278
Richmond Valley	3452	45	31	37	78	33	59	326	150	139	47	119	164	39	180	182	371	0	73
Wagga Wagga	1969	113	90	124	91	62	121	41	156	96	46	106	63	378	59	61	158	56	0

Source: ABS Census 2016.

Table 7a: Data for analysis of origin and destination matrix in Victoria, 2011–2016

	Melbourne	Ballarat	Creswick - Daylesford - Ballan	Bendigo	Heathcote - Castlemaine - Kyneton	Geelong	Upper Goulburn Valley	Wangaratta - Benalla	Wodonga - Alpine	Baw Baw	Latrobe Valley	Macedon Ranges	Grampians	Mildura	Murray River - Swan Hill	Shepparton	Glenelg - Southern Grampians	Colac - Corangamite	Warrnambool
Melbourne	0	2813	769	2421	1515	5399	2034	1441	1819	1289	1908	1340	1164	1094	920	2522	702	785	1249
Ballarat	3392	0	1779	220	146	443	100	64	100	47	79	69	1186	160	156	66	330	267	283
Creswick - Daylesford - Ballan	2064	994	0	35	158	134	23	7	11	9	12	47	58	7	18	14	23	19	38
Bendigo	2773	218	67	0	1897	225	242	170	115	41	60	95	340	255	693	393	53	44	66
Heathcote - Castlemaine - Kyneton	3172	76	248	1722	0	55	118	24	36	13	28	448	70	35	90	44	14	19	35
Geelong	6920	699	149	365	132	0	196	164	192	44	109	80	473	115	192	299	394	812	485
Upper Goulburn Valley	3200	48	23	87	109	89	0	180	115	24	17	147	32	26	33	269	35	25	25
Wangaratta - Benalla	1409	49	13	84	37	68	302	0	609	34	17	8	50	16	38	144	18	11	13
Wodonga - Alpine	1917	80	32	108	24	90	166	613	0	36	41	23	61	42	35	158	48	51	43
Baw Baw	1824	44	9	35	15	25	37	18	24	0	1084	11	25	19	24	29	8	17	9
Latrobe Valley	1487	33	5	46	20	61	42	35	38	788	0	12	36	16	33	35	32	16	15
Macedon Ranges	2281	22	32	63	374	37	82	23	22	0	0	0	15	13	8	11	5	12	9
Grampians	1254	344	86	111	51	211	44	20	33	34	53	22	0	117	187	59	222	56	122
Mildura	725	80	25	133	27	70	28	15	30	23	29	14	155	0	379	39	54	15	27
Murray River - Swan Hill	577	97	55	233	55	89	34	40	29	27	13	20	184	134	0	48	22	54	25
Shepparton	1768	77	7	165	46	72	330	148	95	22	47	18	35	74	121	0	18	30	23
Glenelg - Southern Grampians	599	126	22	53	27	174	36	18	31	19	20	8	257	40	35	20	0	98	262
Colac - Corangamite	855	148	19	29	19	368	23	26	20	19	26	10	76	24	29	15	64	0	412
Warrnambool	1097	162	44	90	47	232	38	30	29	10	29	11	231	58	33	53	483	643	0

Source: ABS Census 2016.

Table 8a: Data for analysis of origin and destination matrix in Queensland, 2011–2016

	Brisbane	Cairns	Innisfail - Cassowary Coast	Port Douglas - Daintree	Granite Belt	Rockhampton	Biloela	Gladstone	Gold Coast	Mackay	Sunshine Coast	Toowoomba	Charters Towers - Ayr - Ingham	Townsville	Bundaberg	Gympie - Cooloola	Hervey Bay	Maryborough
Brisbane	0	4813	708	198	1387	3228	475	2423	8640	3996	5544	6130	483	5415	2793	1605	1784	1260
Cairns	2524	0	1461	586	48	335	33	187	490	500	239	275	370	1712	214	73	183	104
Innisfail - Cassowary Coast	387	1284	0	38	13	44	9	44	55	87	31	46	172	396	76	21	12	10
Port Douglas - Daintree	108	320	28	0	13	8	9	12	53	27	55	10	18	45	14	10	10	10
Granite Belt	1353	67	11	6	0	97	28	41	196	53	100	907	38	85	41	55	49	44
Rockhampton	1750	309	76	26	49	0	726	891	268	655	191	188	123	446	414	128	207	157
Biloela	321	17	13	0	11	311	0	119	12	61	41	57	32	31	80	30	18	26
Gladstone	1423	152	30	17	43	568	283	0	300	282	216	95	48	305	574	165	166	193
Gold Coast	9032	801	104	64	207	358	30	323	0	518	408	787	72	629	304	117	272	150
Mackay	1658	349	76	10	59	513	72	297	298	0	220	189	207	701	233	101	146	100
Sunshine Coast	5931	492	58	24	101	398	87	500	481	516	0	520	57	489	460	835	431	206
Toowoomba	5061	315	45	19	1187	331	114	199	566	338	349	0	121	539	292	178	253	170
Charters Towers - Ayr - Ingham	434	330	139	16	14	63	27	29	31	188	50	60	0	1186	77	33	15	33
Townsville	3260	1930	581	77	100	527	47	295	467	1153	258	530	2550	0	294	125	204	153
Bundaberg	1757	242	76	16	76	426	113	1127	242	366	248	296	93	257	0	162	230	300
Gympie - Cooloola	1616	153	39	0	57	165	55	201	158	173	1303	174	57	146	173	0	163	332
Hervey Bay	1679	247	47	17	81	245	57	433	306	258	247	386	72	201	421	226	0	1449
Maryborough	1150	107	26	0	65	135	54	213	103	143	227	142	39	194	285	295	1061	0

Source: ABS Census 2016.

Table 9a: Data for analysis of origin and destination matrix in South Australia, 2011–2016

	Adelaide	Barossa	Lower North	Mid North	Yorke Peninsula	Eyre Peninsula and South West	Outback - North and East	Fleurieu - Kangaroo Island	Limestone Coast	Murray and Mallee
Adelaide	0	2906	1636	1444	1649	3285	2013	3859	2595	4101
Barossa	3663	0	267	72	102	105	100	73	71	331
Lower North	1416	267	0	235	180	149	166	61	51	116
Mid North	1015	49	203	0	122	194	376	54	40	98
Yorke Peninsula	1949	108	252	185	0	113	207	59	56	171
Eyre Peninsula and South West	1912	65	111	171	94	0	494	105	98	162
Outback - North and East	1225	70	73	190	66	304	0	58	61	124
Fleurieu - Kangaroo Island	5905	111	102	74	69	216	160	0	212	484
Limestone Coast	1684	39	41	40	57	116	53	134	0	375
Murray and Mallee	3680	330	175	99	101	248	176	312	405	0

Source: ABS Census 2016.

Table 10a: Data for analysis of origin and destination matrix in Western Australia, 2011–2016

	Augusta - Margaret River - Busselton	Bunbury	Manjimup	Perth	Albany	Wheat Belt	Kimberley	Pilbara	Esperance	Gascoyne	Goldfields	Mid West
Augusta - Margaret River - Busselton	0	806	388	5464	336	460	188	381	68	72	169	190
Bunbury	818	0	977	5492	395	825	250	667	181	82	466	326
Manjimup	183	505	0	1803	157	182	55	163	37	34	50	79
Perth	3044	6082	1357	0	3701	9269	2562	8076	1111	975	4601	3927
Albany	118	282	199	4039	0	683	164	237	263	74	229	213
Wheat Belt	155	330	132	7795	434	0	176	501	142	117	375	593
Kimberley	84	136	18	1924	144	115	0	378	24	68	83	172
Pilbara	257	678	106	7871	216	396	399	0	92	170	349	535
Esperance	42	75	25	728	104	176	74	90	0	24	345	75
Gascoyne	65	43	25	714	40	54	70	197	5	0	10	162
Goldfields	37	177	40	2219	85	175	117	175	224	23	0	171
Mid West	71	187	76	2688	129	490	187	767	76	327	261	0

Source: ABS Census 2016.

Appendix 3: Data dictionary and methodology for HILDA data

Data collection and setup

The HILDA dataset from the Australian Data Archive was downloaded in SPSS.sav file format and processed using the R programming language. The individual release waves (Waves A to T) were restructured and harmonised to create longitudinal data by selecting relevant variables in all releases. These variables formed the primary data structure for each release wave, aligned with the cross-wave identifier, `waveid` and the respective release year, 'y'–=, noting that where specific attributes were not collected at the time of the survey, a NA value was assigned to the cell for that identified attribute and year only. All 20 release waves were merged to create a consolidated master dataset that was used for the subsequent data extraction. A total of 410,658 person-period records were obtained.

Identifying inflow and outflows within states

Geography attributes from HILDA, such as Statistical Area 1 (`hhssa1'), Statistical Area 2 (`hhssa2'), Statistical Area 3 (`hhssa3'), Statistical Area 4 (`hhssa4'), Greater City Capital (`hhsgcc') and state names (`hhmsr') were used to determine the location of each cross-wave identifier in their current year. First, an additional attribute called `state movement' was appended to the dataset, indicating whether an individual remained within the same state or experienced a change in state between consecutive years.

Within these data subsets, movements from regional areas to major cities were noted using the HILDA variable `hhsgcc'. Movement from a regional area into a greater capital city area within the same state is classified as 'Inflow'; movement out of capital city regions as 'Outflow'; and, where no change is noted between years, the movement type is classified as 'Stable'.

Year-by-year comparison of variables

The variables used to describe each cross-wave identifier's socio-economic and demographic characteristics are listed in Table A3. To ascertain the changes between years for each individual, the previous and current year attributes were extracted and compared based on `waveid' and by release year. It should be noted that where the same variables across years were separated, these were concatenated into a single variable, with care taken to ensure all attribute descriptions were consistent within the entire dataset.

For a preliminary analysis, we compared in-migrants and out-migrants in terms of housing tenure, dwelling type, income, health status and job satisfaction after their move.

Table A2: Selected variables in HILDA, 2001–2020

	Persons who moved from regionals to the capital city within the state (Inflows)	Persons who moved from the capital city to regionals within the state (Outflows)
Housing	• Mortgage payment or total reliability	• Mortgage payment or total reliability
Individual/family	• Age (use HILDA age breakdown 15–19; 20–24; 25–34, … , 65–74 • Household income • Household net worth • Hours worked • Number of children • Life satisfaction • Job satisfaction	• Age (use HILDA age breakdown 15–19; 20–24; 25–34, … , 65–74 • Household income • Household net worth • Hours worked • Number of children • Life satisfaction • Job satisfaction
Neighbourhood & community	• Satisfaction for the neighbourhood in which you live (0 if totally dissatisfied, 5 if neither satisfied nor dissatisfied, and 10 if totally satisfied	• Satisfaction for the neighbourhood in which you live (0 if totally dissatisfied, 5 if neither satisfied nor dissatisfied, and 10 if totally satisfied)

Source: HILDA

Table A3: Variables extracted from HILDA

Variables	Descriptions	Notes
waveid	Individual Unique Identifier For All Waves Which Is Xwaveid	
y	Year Of Wave	
aesdtl	DV: Current labour force status - detail	
ajbmo61	DV: E13 Occupation 1-digit ANZSCO 2006	
anbcob	History: Country Of Birth - Brief	
ancob	History: Country Of Birth	
ancobn	Country Of Birth	
anengfn	Is English the first language you learned to speak as a child	
chkhru	Check If Works Part-Time	
dodtyp	Interviewer Recorded Dwelling Type	Wave 4-20
dodtype	Interviewer Recorded Dwelling Type	Wave 2-3
dotype	Interviewer Recorded Dwelling Type	Wave 1
edcly	History: Country Of Last School Year	
edclyn	History: Country Completed Highest Qualification In	
edcoqn	Country Completed Highest Education	
edhigh1	History: Highest Education Level Achieved	
edrqenr	Enrolled In Course For Trade Certificate, Diploma Or Degree	
edsscat	Which Year Of School Did You Attend In X Year	
edsscmp	Highest Year Of School Completed	
edsstyp	Type Of School Attended	
esbrd	Employment Status Broad	
esdtl	Employment Status Detail	
esempst	Current Employment Status	
fmfcob	Father's Country Of Birth	
fmfo6n1	Father's Job	DV: NPQ:BB17 Father's occupation 1-digit ANZSCO 2006
fmfocc	History: Father's Occupation 1-Digit Asco	
fmfocc1	Father's Job	History: Father's occupation 1-digit ASCO
fmfocn1	Father's 4-Digit, 2-Digit And 1-Digit Occupation	DV: NPQ:BB17 Father's occupation 1-digit ASCO
fmmcob	Mother's Country Of Birth	
fmmocc	History: Mother's Occupation 1-Digit Asco	

Table A3 (continued): Variables extracted from HILDA

Variables	Descriptions	Notes
fmmocc1	Mother's Job (Around The Time The Respondent Was 14 Years Old – History Variable)	
gh1	Self-Assessed Health	
hgage	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	
hgage1	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 1
hgage10	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 10
hgage11	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 11
hgage12	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 12
hgage13	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 13
hgage14	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 14
hgage15	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 15
hgage16	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 16
hgage17	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 17
hgage18	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 18
hgage19	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 19
hgage2	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 2
hgage20	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 20
hgage3	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 3
hgage4	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 4
hgage5	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 5
hgage6	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 6
hgage7	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 7
hgage8	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 8
hgage9	Age At Last Birthday As Of 30 June Immediately Preceding The Fieldwork For That Wave	Person 9
hges	Employment Status On Household Form, Answered By One Person In Household	
hgsex1	Sex	Person 1
hgsex10	Sex	Person 10
hgsex11	Sex	Person 11
hgsex12	Sex	Person 12
hgsex13	Sex	Person 13
hgsex14	Sex	Person 14
hgsex15	Sex	Person 15
hgsex16	Sex	Person 16
hgsex17	Sex	Person 17
hgsex18	Sex	Person 18
hgsex19	Sex	Person 19

Table A3 (continued): Variables extracted from HILDA

Variables	Descriptions	Notes
hgsex2	Sex	Person 2
hgsex20	Sex	Person 20
hgsex3	Sex	Person 3
hgsex4	Sex	Person 4
hgsex5	Sex	Person 5
hgsex6	Sex	Person 6
hgsex7	Sex	Person 7
hgsex8	Sex	Person 8
hgsex9	Sex	Person 9
hhmsr	Asgc 2001 Major Statistical Region	
hhra	Asgc 2001 Remoteness Area	
hhsgcc	Dv: Asgs 2011 Greater Capital City Statistical Area (Gccsa)	
hhslga	Asgs 2011 Local Government Area (Lga)	
hhssa1	Asgs 2011 Statistical Area Level 1 (Sa1) 7-Digit	
hhssa2	Asgs 2011 Statistical Area Level 2 (Sa2) 5-Digit	
hhssa3	Asgs 2011 Statistical Area Level 3 (Sa3) 5-Digit	
hhssa4	Asgs 2011 Statistical Area Level 4 (Sa4) 3-Digit	
hhstate	State	
hhtype	Household Type	
hiband	Gross Income Band Of Household For Last Financial Year (Wave 4-5)	
hiband_f	Concatenated: Gross Income Band Of Household For Last Financial Year	
hiband_full	Correct Year Labels: Gross Income Band Of Household For Last Financial Year	
hiband2	Gross Income Band Of Household For Last Financial Year (Wave 6-8)	
hiband3	Gross Income Band Of Household For Last Financial Year (Wave 9 -20)	
hifefp	Dv: Household Financial Year Gross Regular Income ($) [Imputed] Positive Values [Weighted Topcode]	
hsbedrm	Number Of Bedrooms	
hsmg	DV: Mortgage usual repayments $ per month [weighted topcode]	
hsrnt	Dv: Rent Usual Payments $ Per Month [Weighted Topcode]	
hstenr	Own, Rent Or Live Rent Free	
hstenur	Own, Rent Or Live Rent Free	
hsyrcad	History: Years At Current Address	
hwasset	Dv: Household Total Assets ($) [Weighted Topcode]	
hwnetwn	Dv: Household Net Worth [Negative Values] ($)	
hwnetwp	Dv: Household Net Worth [Positive Values] ($) [Weighted Topcode]	

Table A3 (continued): Variables extracted from HILDA

Variables	Descriptions	Notes
jbawmhr	Available To Work More Hours Than Currently Working	
jbhrcpr	Prefer To Work	
jbhrua	Hours Per Week Worked On Average (Over 4 Week Period) In All Your Jobs	
jbhruw	Hours Per Week Usually Worked In All Your Jobs	
jbmday	Type Of Work Schedule	
jbmhrua	Hours Per Week Work On Average In Main Job	
jbmhruw	Hours Per Week Usually Work In Main Job	
jbmlpc	Main Job Location Of Work Asgs Postal Area (Poa)	
jbmsall	Job Satisfaction	
jbn	Currently Have More Than One Job	
jbpmfhr	Prefers To Work More Or Fewer Hours (Check C4)	
jbprhr	Total Hours Per Week Would Choose To Work	
jbptrea	Main Reason For Working Pt Hours Rather Than Ft	
losat	Satisfaction with life	
losatnl	Satisfaction for the neighbourhood in which you live (0 if totally dissatisfied, 5 if neither satisfied nor dissatisfied, and 10 if totally satisfied)	
mhli	Changed Address Since Last Interview	
mhlyr	Moved To Current Address Less Than 12 Months Ago	
mhreaas	Main Reasons For Moving - To Be Closer To Amenities/Services/Public Transport	
mhreabn	Main Reasons For Moving - To Live In A Better Neighbourhood	
mhreadk	Main Reasons For Moving - Dont Know	
mhreaev	Main Reasons For Moving - Evicted	
mhreaff	Main Reasons For Moving - To Be Closer To Friends And/Or Family	
mhreafm	Main Reasons For Moving - To Follow A Spouse Or Parent/Whole Family Moved	
mhreagh	Main Reasons For Moving - Government Housing (No Choice)	
mhreahn	Main Reasons For Moving - Housing/Neighbourhood Reason (Nfi)	
mhreahr	Main Reasons For Moving - Health Reasons	
mhrealb	Main Reasons For Moving - To Get A Larger/Better Place	
mhreals	Main Reasons For Moving - Seeking Change Of Lifestyle	
mhrealw	Main Reasons For Moving - To Look For Work	
mhreama	Main Reasons For Moving - Moved To Australia (Nfi)	
mhreamb	Main Reasons For Moving - Marital/Relationship Breakdown	
mhreamr	Main Reasons For Moving - To Get Married/Moved In With Partner	
mhreana	Main Reasons For Moving - Not Answered	
mhreani	Main Reasons For Moving - Nei To Classify	
mhreanj	Main Reasons For Moving - To Start A New Job With A New Employer	

Table A3 (continued): Variables extracted from HILDA

Variables	Descriptions	Notes
mhreaob	Main Reasons For Moving - To Start Own Business	
mhreaos	Main Reasons For Moving - Other	
mhreapf	Main Reasons For Moving - Personal/Family Reasons (Nfi)	
mhreapn	Main Reasons For Moving - Property No Longer Available	
mhreapo	Main Reasons For Moving - To Get A Place Of My Own/Our Own	
mhrearb	Main Reasons For Moving - Decided To Relocate Own Business	
mhrearf	Main Reasons For Moving - Refused	
mhrearo	Main Reasons For Moving - Travelling/Returned From Overseas	
mhreasm	Main Reasons For Moving - To Get A Smaller/Less Expensive Place	
mhreast	Main Reasons For Moving - To Be Close To Place Of Study	
mhreatr	Main Reasons For Moving - Temporary Relocation	
mhreawp	Main Reasons For Moving - To Be Nearer Place Of Work	
mhreawr	Main Reasons For Moving - Work Reasons (Nfi)	
mhreawt	Main Reasons For Moving - Work Transfer	
mrcms	Current Marital Status	
mschgdk	Changes To Marital Status - Dont Know	
mschgdv	Changes To Marital Status - Got Divorced	
mschgmr	Changes To Marital Status - Got Married	
mschgna	Changes To Marital Status - No Answer	
mschgno	Changes To Marital Status - None Of The Above	
mschgrf	Changes To Marital Status - Refused	
mschgrs	Changes To Marital Status - Reunited With Spouse	
mschgsp	Changes To Marital Status - Separated	
mschgwd	Changes To Marital Status - Was Widowed	
tchave	Number Of Children	
tcn04	Dv: Count Of Own Non-Resident Children Aged 0-4 (G3)	
tcn1524	Dv: Count Of Own Non-Resident Children Aged 15-24 (G3)	
tcn25	Dv: Count Of Own Non-Resident Children Aged 25+ (G3)	
tcn514	Dv: Count Of Own Non-Resident Children Aged 5-14 (G3)	
tcr04	Dv: Count Of Own Resident Children And Resident Step/Foster/Grand Children Without Parent In Household, Aged 0-4 (G15)	
tcr1524	Dv: Count Of Own Resident Children And Resident Step/Foster/Grand Children Without Parent In Household, Aged 15-24 (G15)	
tcr25	Dv: Count Of Own Resident Children And Resident Step/Foster/Grand Children Without Parent In Household, Aged 25+ (G15)	
tcr514	Dv: Count Of Own Resident Children And Resident Step/Foster/Grand Children Without Parent In Household, Aged 5-14 (G15)	

Table A3 (continued): Variables extracted from HILDA

Variables	Descriptions	Notes
tifefn	Dv: Financial Year Gross Regular Income ($) [Imputed] Negative Values	
tifefp	Dv: Financial Year Gross Regular Income ($) [Imputed] Positive Values [Weighted Topcode]	
tifmkin	Dv: Financial Year Regular Market Income ($) [Imputed] Negative Values	
tifmkip	Dv: Financial Year Regular Market Income ($) [Imputed] Positive Values [Weighted Topcode]	
tifpiin	Dv: Financial Year Regular Private Income ($) [Imputed] Negative Values	
tifpiip	Dv: Financial Year Regular Private Income ($) [Imputed] Positive Values [Weighted Topcode]	

Source: HILDA

Table A4: Definitions of 'major cities' in HILDA: New South Wales, Queensland, South Australia, Victoria and Western Australia, 2002–2020

State	SA4 Labels
New South Wales	Sydney – Inner West
	Sydney – Northern Beaches
	Sydney – Outer South West
	Sydney – North Sydney and Hornsby
	Sydney – South West
	Sydney – City and Inner South
	Sydney – Outer West and Blue Mountains
	Central Coast
	Sydney – Ryde
	Sydney – Sutherland
	Sydney – Blacktown
	Sydney – Parramatta
	Sydney – Inner South West
	Sydney – Baulkham Hills and Hawkesbury
	Sydney – Eastern Suburbs
	Capital Region
Queensland	Brisbane Inner City
	Brisbane – South
	Brisbane – East
	Ipswich
	Brisbane – North
	Moreton Bay – South
	Brisbane – West
	Moreton Bay – North
South Australia	Adelaide – North
	Adelaide – South
	Adelaide – West
	Adelaide – Central and Hills
Victoria	Melbourne – Inner East
	Melbourne – Inner
	Melbourne – Inner South
	Melbourne – Outer East
	Melbourne – West
	Mornington Peninsula
	Melbourne – North West
	Melbourne – South East
	Melbourne – North East
Western Australia	Perth – South West
	Perth – Inner
	Perth – South East
	Perth – North East
	Perth – North West
	Mandurah

Source: ABS Australian Statistical Geography Standard (2021)

Discriminant functions

The following discriminant function is used to characterise differences among the in-migrants and out-migrants of capital cities:

$$Z_{jk} = a + W_1 X_{1k} + W_2 X_{2k} + ... + W_n X Z_{jk}$$

represents the discriminant Z-score of discriminant function *j* for migrants in city *k*. The variables X_{nk} are independent variables for in-migrants and out-migrants in city k, and W_n denotes the discriminant coefficient for each independent variable.

Appendix 4: Reasons for move for in-migrants and out-migrants

Table A5: Reasons for move by in-migrants and out-migrants, national, 2001–2020

All States			Inflow		Outflow	
Variable	**Reasons for moving**	**Category**	**Total**	**%**	**Total**	**%**
Mhreast	To Be Close To Place Of Study	Education	237	11.80%	70	3.14%
Mhrearb	Decided To Relocate Own Business	Employment	5	0.25%	8	0.36%
Mhreawp	To Be Nearer Place Of Work	Employment	215	10.71%	125	5.62%
Mhrealw	To Look For Work	Employment	89	4.43%	22	0.99%
Mhreanj	To Start A New Job With A New Employer	Employment	153	7.62%	165	7.41%
Mhreaob	To Start Own Business	Employment	8	0.40%	27	1.21%
Mhreawr	Work Reasons (NFI)	Employment	9	0.45%	6	0.27%
Mhreawt	Work Transfer	Employment	67	3.34%	76	3.41%
Mhreahr	Health Reasons	Health	64	3.19%	57	2.56%
Mhreaev	Evicted	Housing	8	0.40%	12	0.54%
Mhreagh	Government Housing (No Choice)	Housing	0	0.00%	0	0.00%
Mhreahn	Housing/Neighbourhood Reason (NFI)	Housing	11	0.55%	5	0.22%
Mhreapn	Property No Longer Available	Housing	53	2.64%	63	2.83%
Mhrealb	To Get A Larger/Better Place	Housing	63	3.14%	111	4.99%
Mhreapo	To Get A Place Of My Own/Our Own	Housing	135	6.72%	143	6.42%
Mhreasm	To Get A Smaller/Less Expensive Place	Housing	46	2.29%	119	5.35%
Mhreama	Moved To Australia (NFI)	Lifestyle	1	0.05%	0	0.00%
Mhreals	Seeking Change Of Lifestyle	Lifestyle	168	8.37%	408	18.33%
Mhreatr	Temporary Relocation	Lifestyle	11	0.55%	12	0.54%
Mhreaas	To Be Closer To Amenities/Services/Public Transport	Lifestyle	52	2.59%	18	0.81%
Mhreabn	To Live In A Better Neighbourhood	Lifestyle	47	2.34%	141	6.33%
Mhrearo	Travelling/Returned From Overseas	Lifestyle	13	0.65%	22	0.99%
Mhreani	NEI To Classify	Other	16	0.80%	24	1.08%
Mhreana	Not Answered	Other	0	0.00%	6	0.27%
Mhreaos	Other	Other	41	2.04%	42	1.89%
Mhreamb	Marital/Relationship Breakdown	Personal	79	3.93%	73	3.28%
Mhreapf	Personal/Family Reasons (NFI)	Personal	25	1.25%	21	0.94%
Mhreaff	To Be Closer To Friends And/Or Family	Personal	239	11.90%	271	12.17%
Mhreafm	To Follow A Spouse Or Parent/Whole Family Moved	Personal	76	3.78%	105	4.72%
Mhreamr	To Get Married/Moved In With Partner	Personal	77	3.83%	74	3.32%

Source: HILDA data release wave 1-20 (2001-2020)

Note: NFI = No further information.

Table A6: Reasons for move by in-migrants by state, 2001–2020

Reason	NSW		QLD		SA		VIC		WA		Nat.	
	N	%	N	%	N	%	N	%	N	%	N	%
To Be Close To Place Of Study	43	9.51	58	8.87	33	14.10	82	21.03	21	9.50	237	12.15
To Start A New Job With A New Employer	41	9.07	45	6.88	21	8.97	31	7.95	15	6.79	153	7.84
To Be Nearer Place Of Work	64	14.16	67	10.24	18	7.69	52	13.33	14	6.33	215	11.02
Work Transfer	13	2.88	26	3.98	8	3.42	12	3.08	8	3.62	67	3.43
To Start Own Business	1	0.22	7	1.07	0	0.00	0	0.00	0	0.00	8	0.41
Decided To Relocate Own Business	1	0.22	2	0.31	0	0.00	0	0.00	2	0.90	5	0.26
To Look For Work	23	5.09	32	4.89	14	5.98	14	3.59	6	2.71	89	4.56
Work Reasons (NFI)	5	1.11	2	0.31	1	0.43	1	0.26	0	0.00	9	0.46
Health Reasons	15	3.32	22	3.36	10	4.27	10	2.56	7	3.17	64	3.28
To Get A Larger/Better Place	8	1.77	27	4.13	7	2.99	13	3.33	8	3.62	63	3.23
To Get A Smaller/Less Expensive Place	8	1.77	23	3.52	2	0.85	4	1.03	9	4.07	46	2.36
To Get A Place Of My Own/Our Own	23	5.09	45	6.88	19	8.12	32	8.21	16	7.24	135	6.92
Property No Longer Available	9	1.99	28	4.28	9	3.85	7	1.79	0	0.00	53	2.72
Evicted	4	0.88	2	0.31	1	0.43	0	0.00	1	0.45	8	0.41
Government Housing (No Choice)	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Housing/Neighbourhood Reason (NFI)	4	0.88	7	1.07	0	0.00	0	0.00	0	0.00	11	0.56
To Live In A Better Neighbourhood	11	2.43	15	2.29	6	2.56	9	2.31	6	2.71	47	2.41
Moved To Australia (NFI)	0	0.00	1	0.15	0	0.00	0	0.00	0	0.00	1	0.05
To Be Closer To Amenities/Services/ Public Transport	9	1.99	17	2.60	6	2.56	9	2.31	11	4.98	52	2.67
Seeking Change Of Lifestyle	46	10.18	39	5.96	22	9.40	36	9.23	25	11.31	168	8.61
Temporary Relocation	3	0.66	3	0.46	1	0.43	2	0.51	2	0.90	11	0.56
Travelling/Returned From Overseas	5	1.11	4	0.61	0	0.00	3	0.77	1	0.45	13	0.67
To Get Married/Moved In With Partner	15	3.32	30	4.59	13	5.56	11	2.82	8	3.62	77	3.95
To Be Closer To Friends And/Or Family	59	13.05	84	12.84	24	10.26	35	8.97	37	16.74	239	12.25
Marital/Relationship Breakdown	19	4.20	29	4.43	10	4.27	11	2.82	10	4.52	79	4.05
To Follow A Spouse Or Parent/Whole Family Moved	18	3.98	33	5.05	5	2.14	8	2.05	12	5.43	76	3.90
Personal/Family Reasons (NFI)	5	1.11	6	0.92	4	1.71	8	2.05	2	0.90	25	1.28

Source: HILDA data release wave 1-20 (2001-2020)

Note: NFI = No further information

Table A7: Reasons for move by out-migrants by state, 2001–2020

Reasons	NSW		QLD		SA		VIC		WA		Nat.	
	N	%	N	%	N	%	N	%	N	%	N	%
To Be Close To Place Of Study	45	7.19	53	8.73	20	9.35	26	4.75	21	13.13	165	7.66
To Start A New Job With A New Employer	23	3.67	52	8.57	11	5.14	27	4.94	12	7.50	125	5.80
To Be Nearer Place Of Work	29	4.63	18	2.97	3	1.40	19	3.47	1	0.63	70	3.25
Work Transfer	20	3.19	24	3.95	8	3.74	14	2.56	10	6.25	76	3.53
To Start Own Business	9	1.44	5	0.82	4	1.87	5	0.91	4	2.50	27	1.25
Decided To Relocate Own Business	4	0.64	1	0.16	1	0.47	1	0.18	1	0.63	8	0.37
To Look For Work	27	4.31	28	4.61	12	5.61	36	6.58	8	5.00	111	5.15
Work Reasons (NFI)	55	8.79	24	3.95	9	4.21	25	4.57	6	3.75	119	5.52
Health Reasons	34	5.43	27	4.45	19	8.88	59	10.79	4	2.50	143	6.64
To Get A Larger/Better Place	26	4.15	23	3.79	9	4.21	10	1.83	6	3.75	74	3.44
To Get A Smaller/Less Expensive Place	39	6.23	40	6.59	15	7.01	41	7.50	6	3.75	141	6.55
To Get A Place Of My Own/Our Own	85	13.58	71	11.70	24	11.21	73	13.35	18	11.25	271	12.58
Property No Longer Available	4	0.64	8	1.32	2	0.93	6	1.10	2	1.25	22	1.02
Evicted	17	2.72	27	4.45	9	4.21	9	1.65	11	6.88	73	3.39
Government Housing (No Choice)	11	1.76	27	4.45	4	1.87	19	3.47	2	1.25	63	2.92
Housing/Neighbourhood Reason (NFI)	1	0.16	6	0.99	1	0.47	3	0.55	1	0.63	12	0.56
To Live In A Better Neighbourhood	29	4.63	35	5.77	12	5.61	23	4.20	6	3.75	105	4.87
Moved To Australia (NFI)	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
To Be Closer To Amenities/Services/Public Transport	3	0.48	5	0.82	2	0.93	8	1.46	0	0.00	18	0.84
Seeking Change Of Lifestyle	128	20.45	100	16.47	26	12.15	122	22.30	32	20.00	408	18.94
Temporary Relocation	9	1.44	0	0.00	2	0.93	1	0.18	0	0.00	12	0.56
Travelling/Returned From Overseas	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
To Get Married/Moved In With Partner	17	2.72	13	2.14	13	6.07	9	1.65	5	3.13	57	2.65
To Be Closer To Friends And/Or Family	6	0.96	9	1.48	1	0.47	4	0.73	2	1.25	22	1.02
Marital/Relationship Breakdown	5	0.80	7	1.15	6	2.80	1	0.18	2	1.25	21	0.97
To Follow A Spouse Or Parent/Whole Family Moved	0	0.00	3	0.49	0	0.00	3	0.55	0	0.00	6	0.28
Personal/Family Reasons (NFI)	0	0.00	1	0.16	1	0.47	3	0.55	0	0.00	5	0.23

Source: HILDA data release wave 1-20 (2001-2020)

Note: NFI = No further information