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Maximising the value of the South Australian migrant community

Department of Premier and Cabinet

May 2024

Deloitte
Access **Economics**

Contents

THE CHALLENGE

	UNDEREMPLOYMENT	UNEMPLOYMENT	QUALIFICATION UNDERUTILISATION
MIGRANT	8.1%	5.0%	46.1%
AUSTRALIAN BORN	6.7%	3.9%	29.5%

The underemployment rate is **1.4 percentage points higher** for migrants than Australian born

The unemployment rate is **1.1 percentage points higher** for migrants than Australian born

The qualification underutilisation rate is **16.7 percentage points higher** for migrants than Australian born

Source: ABS Longitudinal Labour Force Survey, Deloitte Access Economics. Note: Figures reflect an average over 2023.

THE OPPORTUNITY

ESTIMATED ANNUAL IMPACT

1.2% increase in labour productivity

39,552 overqualified migrants redeployed in suitable roles

7,177 additional full time equivalent jobs

$2.2 billion increase in Gross State Product

Source: ABS Longitudinal Labour Force Survey, Deloitte Access Economics. Note: Impact reflects reducing the underutilisation rate to the South Australian Australian-born average.

THE SOLUTION

IMPROVE EMPLOYMENT OUTCOMES

Address barriers preventing migrants from fully utilising their time and skills

> Encourage greater access to work and training
> Increase cultural competency training
> Expand micro-credentialing

IMPROVE SETTLEMENT OUTCOMES

Help migrants and their families settle into South Australia

> Improve wrap around supports for skilled and family migrants
> Expand eligibility for support services to temporary migrants

BUILD NETWORKS & COMMUNITY

Connect individuals and organisations to provide a support network for migrants

> Develop and promote networking and connection
> Expand data sharing and coordination between sectors

Executive Summary

Migration is an important driver of economic growth and influence on the cultural tapestry of South Australia. In the five years to 2022, net overseas migration accounted for nearly 85 per cent of population growth in South Australia each year (ABS, 2024). Each year thousands of international migrants choose to call South Australia home and yet many struggle to fulfill their economic potential.

To better understand migrant underutilisation in the labour force in South Australia, the Department of Premier and Cabinet (DPC) engaged Deloitte Access Economics to provide a robust evidence base on the extent of underutilisation in the state, inform initiatives addressing migrant underutilisation and estimate the economic benefits of reducing underutilisation.

Underutilisation is a broad concept describing workers who are not fully utilising their skills and qualifications. For example, this could represent a migrant who was previously qualified in their home country, but has had to switch to a different occupation or industry in order to find and maintain employment in Australia. This report explores two types of 'narrow' underutilisation using detailed labour market data: time-based underutilisation and qualifications-based underutilisation (Figure i).

Figure i: Overview of underutilisation measures

Time-based underutilisation

Occurs when an individual works less hours than they are willing and able to work, such as underemployment and unemployment.

Qualifications-based underutilisation

Occurs when an individual is working in a position below their qualifications and/or skills or outside their field of study

While reducing underutilisation, from both a time and qualification perspective, is not as easy task, if realised it could offer substantial economic benefits.

Based on best estimates of migrant underutilisation, and applying economic modelling (DAE-RGEM – Deloitte's regional general equilibrium model), it is estimated that reducing both time and qualifications-based underutilisation to the Australian-born average would redeploy almost 40,000 migrants into positions aligning with their qualification and increase labour productivity by 1.20 per cent. This would **increase the size of the South Australian economy by $2.2 billion** (as measured by gross state product) **and create an employment uplift of 7,177** (as measured by full-time equivalent employment) in a given year.
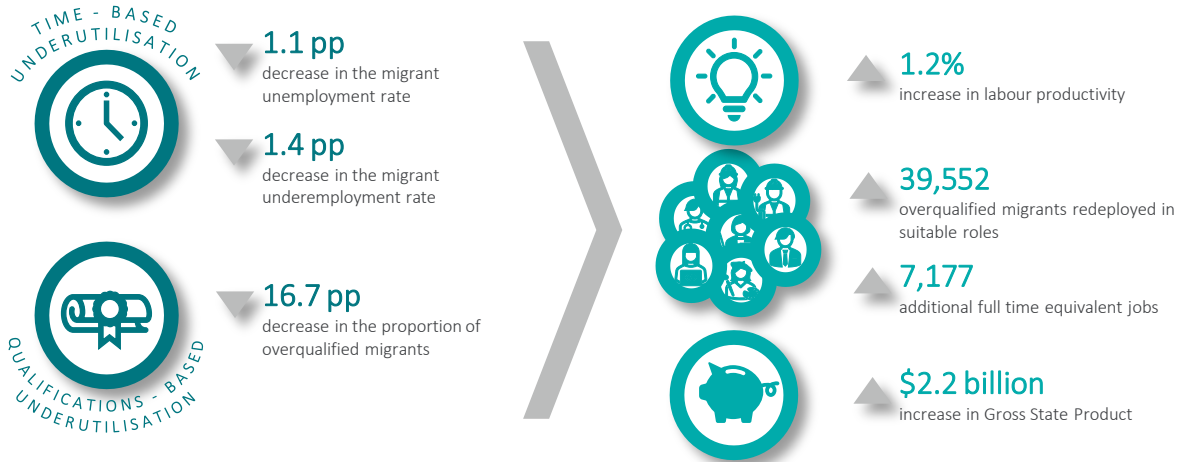
Reducing underutilisation is also anticipated to produce a range of wider benefits in relation to migrants' experience in South Australia. As part of this work Deloitte Access Economics surveyed over 400 migrants in South Australia (a broadly representative sample) and found that about 30 per cent of respondents work in a job that does not use their highest qualification obtained before arriving in Australia.[1] The survey found that:

- Underutilisation has a negative impact on job satisfaction, with only 1 in 10 underutilised respondents reporting being happy with their employment and not searching for new opportunities, compared to 4 in 10 of not underutilised respondents.

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[1] This includes those *choosing* not to use their highest qualification. This is however expected to be a small proportion of migrants as evidenced by the small percentage of individuals reporting being happy with their employment and not looking for new opportunities while being qualification underutilised.

- Additionally, working below qualification or skill level was the top cited reason for being unhappy with current employment.

Figure ii: Modelled average impact of lowering the migrant underutilisation rate, per annum

TIME - BASED UNDERUTILISATION

▼ **1.1 pp**
decrease in the migrant unemployment rate

▼ **1.4 pp**
decrease in the migrant underemployment rate

QUALIFICATIONS - BASED UNDERUTILISATION

▼ **16.7 pp**
decrease in the proportion of overqualified migrants

▲ **1.2%**
increase in labour productivity

▲ **39,552**
overqualified migrants redeployed in suitable roles

▲ **7,177**
additional full time equivalent jobs

▲ **$2.2 billion**
increase in Gross State Product

Source: ABS Longitudinal Labour Force Survey, Deloitte Access Economics. Note: Impact reflects the average uplift per annum from 2024 to 2028.

The substantial potential economic benefits are reflective of the size of the problem.

In 2023 the unemployment and underemployment rate (measures of time-based underutilisation) were 1.1 percentage points and 1.4 percentage points higher respectively for South Australian migrants compared to those born in Australia. Additionally, the proportion of migrants overqualified for their current job (qualifications-based underutilisation) was 16.7 percentage points higher than those born in Australia.[2]

Importantly, these figures reflect longer term trends with **migrants typically experiencing higher levels of underutilisation, both in terms of qualification and time**. Analysis also points to shifts in the relationship between migrant and Australian born underutilisation unique to South Australia.

Across larger states,[3] despite having one of the lowest qualification underutilisation rates for those born in Australia, South Australia now has the highest rate of migrant qualification underutilisation. The gap between migrant and Australian born qualification underutilisation is apparent in both South Australia and nationally, but South Australia has seen an uptick in migrant qualification underutilisation since COVID which is not reflected nationally.

While these statistics present the 'average' experience of migrants, it should be acknowledged that the experience differs between individuals, with certain cohorts more likely to experience underutilisation.

Econometric analysis undertaken by Deloitte Access Economics not only confirms that there is a relationship between migrant status and underutilisation but finds across estimates of both time and qualifications-based underutilisation, being female and the recency of arrival increases the likelihood of underutilisation. Age has a slightly different impact across the two types of underutilisation: for time underutilisation, younger cohorts are more likely to be underutilised, while the middle age cohort (35 to 54 year olds) are more likely to be qualification underutilised. Notably these factors often compound, meaning that particular cohorts like young female recent migrants, have a higher probability of being underutilised than other cohorts.
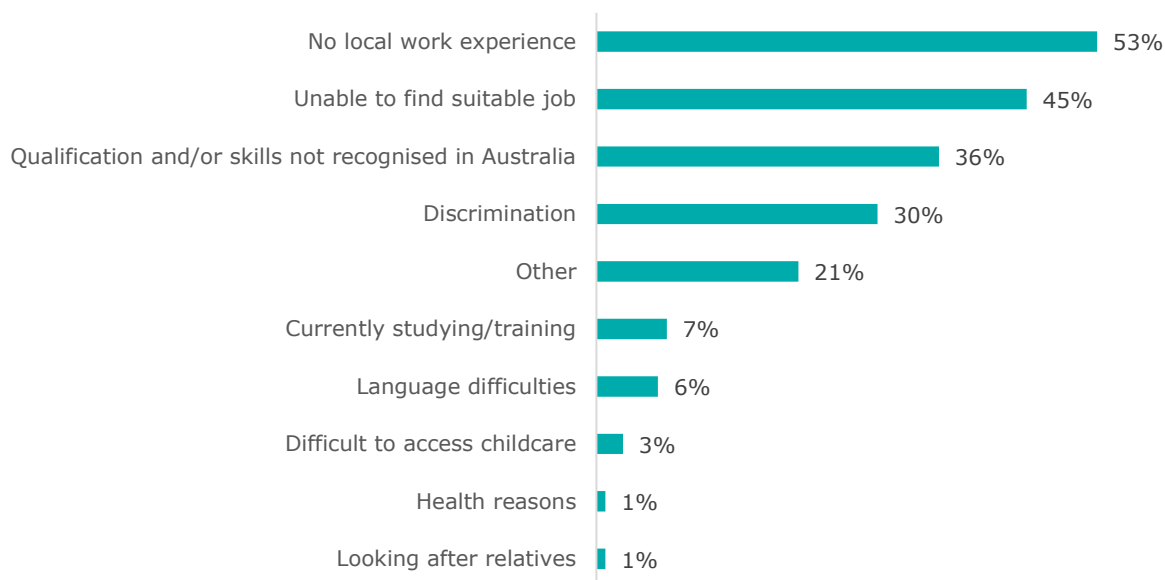
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[2] These figures reflect the difference between the average rate for migrants and those born in Australia across the 2023 calendar year.
[3] Comparisons were only available for New South Wales, Victoria, Western Australia and Queensland.

Adding to the complexity of the problem, underutilisation has numerous causes.

Those identifying as working below their highest qualification most commonly cited local work experience, availability of suitable work, skill recognition and discrimination as reasons for the underutilisation of their skills.

Chart ii: Survey respondents' reasons for not using their qualification in their work

Reason	Percentage
No local work experience	53%
Unable to find suitable job	45%
Qualification and/or skills not recognised in Australia	36%
Discrimination	30%
Other	21%
Currently studying/training	7%
Language difficulties	6%
Difficult to access childcare	3%
Health reasons	1%
Looking after relatives	1%

Source: Deloitte Access Economics survey, 2023
Question: "What is the reason you are not using your qualification in your current role? Tick all that apply" (n=108)

Local work experience is known to be a common gatekeeper to enter the workforce, leaving individuals in a "Catch-22" where local experience is required to get local experience. In the 2019 ABS Characteristics of Recent Migrants survey, a lack of Australian work experience and local networks were the top cited difficulties in finding a first job in Australia (ABS, 2020). This finding was further evidenced from consultations with government, industry and community groups who identified South Australia having a higher concentration of small to medium enterprises, which can accentuate preferences for workers with local work experience.

Findings from the migrant survey corroborate this: approximately **3 in 4 unemployed survey respondents cited a lack of local work experience** among their primary difficulties finding work, the most selected among all options. About one in three also noted that not having local networks was a primary difficulty.

Skills recognition also plays a large role. Of the 59 per cent of migrant survey respondents who applied to have their qualifications assessed, about **1 in 5 were unsuccessful in having their qualifications recognised in Australia**.[4]

Survey and consultation findings also confirm that discrimination is a barrier to migrant utilisation, with 30 per cent of respondents citing discrimination as a reason they are working below their qualifications.

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[4] A similar survey of Queensland migrants fielded by Deloitte Access Economics in 2018 found approximately 32 per cent of migrants who applied for qualification recognition in Australia were unsuccessful (Deloitte Access Economics, 2018). Data from the ABS' Characteristics of Recent Migrants reports 9 per cent of migrants applying for qualification where unsuccessful in 2019 (ABS, 2020).

In realising the economic opportunity, the barriers causing underutilisation must be addressed.

To achieve this economic opportunity, action will need to be taken by government, business and community groups. Based on consultations with South Australian Government Departments, community organisations and industry, and findings from the survey of South Australian migrants, this report recommends the following to improve employment outcomes:

- **Encourage greater access to work and training** by supporting programs to provide migrants with experience in South Australian workplaces.
- **Increase cultural competency training** to help make South Australian workplaces more inclusive of migrant workers.
- **Expand micro-credentialling** to improve accessibility to skill recognition and reduce repeated coursework for overseas trained individuals.

Figure iii: Recommendations to address migrant underutilisation

IMPROVE EMPLOYMENT OUTCOMES	**IMPROVE SETTLEMENT OUTCOMES**	**BUILD NETWORKS & COMMUNITY**
Address barriers preventing migrants from fully utilising their time and skills	*Help migrants and their families settle into South Australia*	*Connect individuals and organisations to provide a support network for migrants*
> Encourage greater access to work and training	> Improve wrap around supports for skilled and family migrants	> Develop and promote networking and connection
> Increase cultural competency training	> Expand eligibility for support services to temporary migrants	> Expand data sharing and coordination between sectors
> Expand micro-credentialing		

Stakeholder consultations revealed the intense stress that can result from moving to a new country. When individuals are lacking information or are struggling to have their needs met, they may be more likely to take on work below their level of qualification. This report recommends the following to improve settlement outcomes:

- **Improve wrap-around supports for skilled and family migrants** using similar support structures available to humanitarian migrants for those in need.
- **Expand eligibility for support services** to allow temporary migrants to access additional supports and subsidies.

Support networks and community are crucial for migrants to settle comfortably in Australia and access career opportunities relevant to their skill level. Discussions with industry and community organisations revealed a lack of information sharing and collaboration across sectors to support migrants, suggesting the potential for greater coordination. This report recommends the following to build networks and community:

- **Develop and promote networking and connection** through encouraging industry organisations to engage new arrivals with networking events and supporting community organisations to provide wrap-around services.
- **Expand data sharing and coordination between sectors** through a limited opt-in system, allowing service providers to make first contact with new arrivals and outline clearer responsibilities for each sector.

Context

Purpose of this report

The Department of Premier and Cabinet (DPC) engaged Deloitte Access Economics to investigate the underutilisation of migrants in South Australia.

The purpose of this report is to provide a robust evidence base to inform initiatives addressing migrant underutilisation. This report aims to provide a snapshot of current trends in underutilisation of onshore migrants and insights into the implementation of strategies to optimise the skills and experiences of migrants in South Australia.

Australia's migration policy

Migrants to Australia can enter through three primary streams: skilled, family or humanitarian. Under each stream sits a variety of permanent and temporary visa subclasses. Permanent visas comprise the majority of subclasses under these three streams.

Figure 1.1: Overview of Australia's migration system
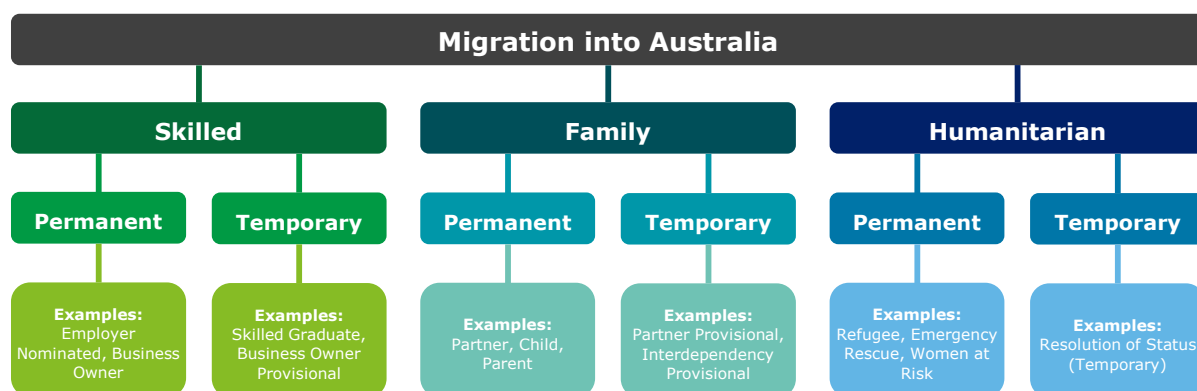
The 2022-23 Migration program broad policy objectives include:

- To ease workforce and skill shortages
- Provide more certainty of permanency
- Retain more onshore temporary migrants.

South Australian migration policy

South Australia's annual intake from the Migration program is typically between 4-6 per cent of national intake. The migrant community comprises a significant portion of the state's population, with a quarter of South Australians being born overseas.

As South Australia has a rapidly ageing population and the highest proportion of people aged 55+ on mainland Australia, migration plays a key role in maintaining a strong working-age population in the state.

South Australia takes in a relatively higher proportion of skilled migrants and lower proportion of family and humanitarian migrants. Over two thirds of South Australia's migrant intake are from the skilled stream, compared to just under half of the national intake. Migrants on Skilled Graduate visas comprise over a third of South Australia's intake.

Adelaide is classified as a Category 2 designated regional area, and thus is one of the larger cities where skilled migrants are eligible for a variety of incentives such as priority processing of visas and a greater list of job opportunities. As a result, South Australia receives a higher proportion of migrants on Skilled Work Regional visas.

South Australia's state nominated migration program, which sits within the skilled migration stream, has evolved over time. Before 2019, most of South Australia's nominations (about 76 per cent from 2016-17 to 2018-19) were to applicants with occupations under the 'Supplementary Skills List' rather than the 'State Nominated Occupation List'. After restructuring the program in 2020, there is now a single occupation list and a more consistently applied eligibility framework which focuses on skilled employment outcomes.

Approach and structure of this report

This report presents the latest quantitative statistics and consultation findings examining the extent and nature of migrant underutilisation in South Australia, and it's impacts on migrants and their experience. It also examines the economic opportunity for South Australia if migrant utilisation is increased. Key recommendations that could support migrants and lift utilisation rates are also explored.

To inform the findings through the report, Deloitte Access Economics conducted bespoke analysis across a range of avenues:

- **Detailed labour market data analysis:** Using the Longitudinal Labour Force data from the ABS, this report estimates migrant and Australian born time and qualifications-based underutilisation rates in South Australia, and conducts econometric analysis to understand the relationship between migrant status and underutilisation.
- **Consultations:** Deloitte Access Economics undertook stakeholder engagements with government, community and industry organisations through the course of this project, to understand experiences in supporting migrant settlement and employment, and gain key insights in potential solutions to underutilisation.
- **Survey:** Deloitte Access Economics fielded an online survey of migrants in South Australia, consisting of 49 questions on labour market experiences, skill recognition processes and support services. In total, there were 464 responses to the survey (335 complete, 129 partial).
- **CGE modelling:** using the Deloitte Access Economics Regional General Equilibrium Model (DAE-RGEM), the report modelled the potential economic impact of increased migrant utilisation in South Australia, to better understand the size of the economic opportunity.

Why now?

Onshore migrant workers play a key role in South Australia's economy and labour market. South Australia, having the oldest median age of all mainland Australian states and territories, is prone to labour shortages and recruitment difficulties. In the period following the COVID-19 lockdowns these concerns were exaggerated in the context of an unusually tight labour market.

In the context of the ongoing national Review of the Migration System and the Migration Strategy, alongside recent record high levels of net overseas migration, Australian migration policy is entering a period of change. Better understanding migrant underutilisation and potential solutions is critical to ensure that this change is best suited for the economy, and improves the experiences of migrants that come to South Australia.

1 Defining the problem

To better understand and define the issue of migrant underutilisation in South Australia, this chapter explores characteristics of the current South Australian migrant community, before discussing key estimates of time and qualifications-based underutilisation.

These estimates were developed using detailed Longitudinal Labour Force data from the ABS, and supported by data from the Department of Home Affairs, Census 2021 and other sources.

1.1   Migration in South Australia

Migration is critical to the South Australian economy and community. In 2021, one in four South Australians were born overseas (25.1 per cent) – a share of the population that has been steadily increasing over time (ABS, 2021).

Post COVID, migration has ramped up even more. 2022-23 was a record breaking year for migration, with about 518,000 people added to the national population through net overseas migration. South Australia accounted for 5.4 per cent of this, adding 27,860 people to the South Australian population. **This is the largest annual net overseas migration figure on record, and is more than double than the ten-year pre-COVID average** between 2008-09 and 2018-19 of 12,700 for South Australia (ABS, 2023b). This figure largely reflects a catch-up from pandemic years, with the majority of net overseas inflows comprising those on temporary visas. Subsequently, net overseas migration is expected to temper in the following years.

Over the past ten years, there have been about 130,000 permanent migrants who have settled in South Australia (Department of Home Affairs, 2023)**.** These migrants come from different backgrounds and have different skills, which often influence their experience living and working in South Australia.

In general, permanent migrants are much younger than the broader South Australian population, with about 35 per cent of migrants aged between 25 and 34. This is critical to South Australia, which has a rapidly ageing population and the highest proportion of people aged 55+ on mainland Australia. A third of South Australians are aged 55+, compared to only 3 per cent of permanent migrants in South Australia. Some visa streams have younger demographics still, with 43 per cent of Humanitarian migrants aged under 18.

Chart 1.1: Age distribution by cohort
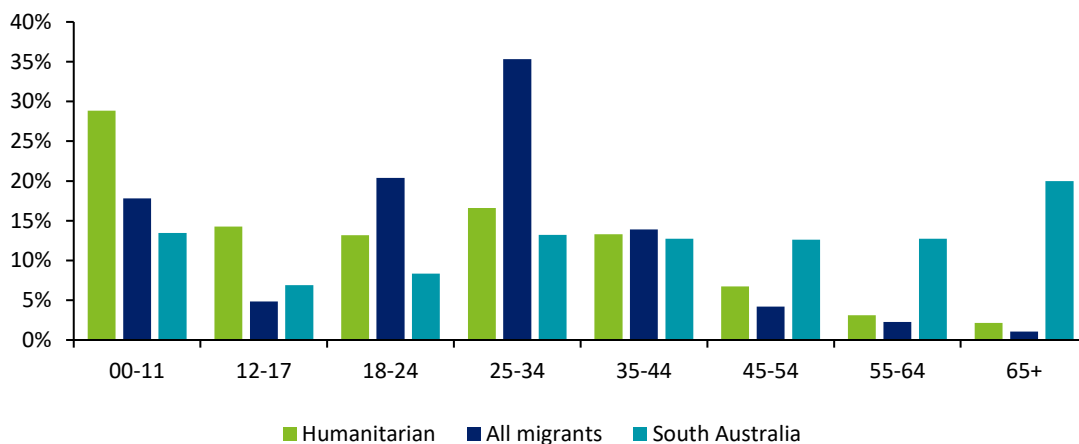
Source: Department of Home Affairs, settlement data; ABS, Census 2021.

Note: "All migrants" refers to all permanent migrants, and "South Australia" refers to the total of all South Australian residents.

Over the past ten years, South Australian permanent migrants have come from over 160 different countries, and over 100 ethnicities. Across all permanent migrants, India is the most common country of birth (making up 22.0 per cent of all permanent migrants), followed by China (13.2 per cent), the Philippines (5.4 per cent), the United Kingdom (4.9 per cent) and Vietnam (3.8 per cent). However, this differs substantially across visa categories. For Humanitarian migrants, the top five most common countries of birth are Myanmar, Afghanistan, Syria, Iran and Iraq.

English proficiency also differs by visa streams. While 72 per cent of Skilled migrants report having 'very good' English proficiency, this compares to only 1 per cent of Humanitarian migrants. Almost 70 per cent of Humanitarian migrants report having 'nil' English proficiency.

Chart 1.2: English proficiency of South Australian permanent migrants, by visa stream
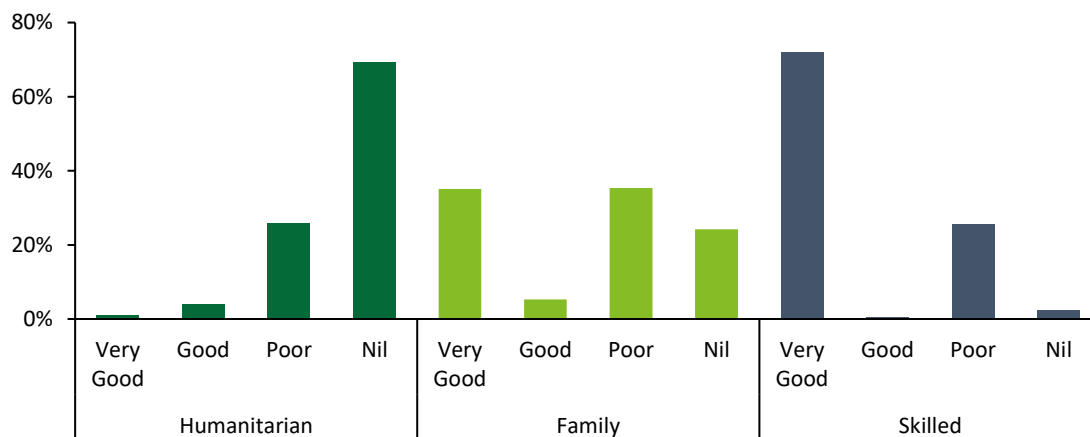
Source: Department of Home Affairs, settlement data.

Migrants were much more likely to settle in Greater Adelaide than the Rest of SA.[5] About 93.7 per cent of permanent migrants live in Greater Adelaide, with about 30 per cent of all permanent migrants equally spread across just two inner north LGAs – Port Adelaide Enfield and Salisbury.

These two LGAs are home to some of South Australia's largest migrant communities; Census data suggests that about 36 per cent of residents in each LGA were born overseas (ABS, 2021). This is unsurprising as migrants tend to settle within existing migrant communities, where housing has traditionally been more affordable as well (Deloitte Access Economics, 2023c).

Overall, the data is clear: migration is an important part of South Australia. The characteristics of migrants differ substantially based on a number of factors – such as cultural background, visa stream and more – and mean that migrants also contribute to the South Australian economy in different ways, and across a range of industries.

1.2   Migrant underutilisation

While migrants are growing as a share of the South Australian population and labour force, a key issue is **migrant underutilisation.**

Underutilisation is a broad concept describing workers who are not fully utilising their skills and qualifications. For example, this could represent a migrant who was previously qualified in their home country, but has had to switch to a different occupation or industry in order to find and maintain employment in Australia.

There is growing evidence that underutilisation within migrant cohorts is a particularly prevalent issue in South Australia: the survey of almost 400 South Australian migrants found that **30 per cent of respondents work in a job that does not use their highest qualification obtained before arriving in Australia** (Deloitte Access Economics, 2023a).

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[5] 'Greater Adelaide' includes 20 LGAs, which match the LGAs outlined by the South Australian Government here.
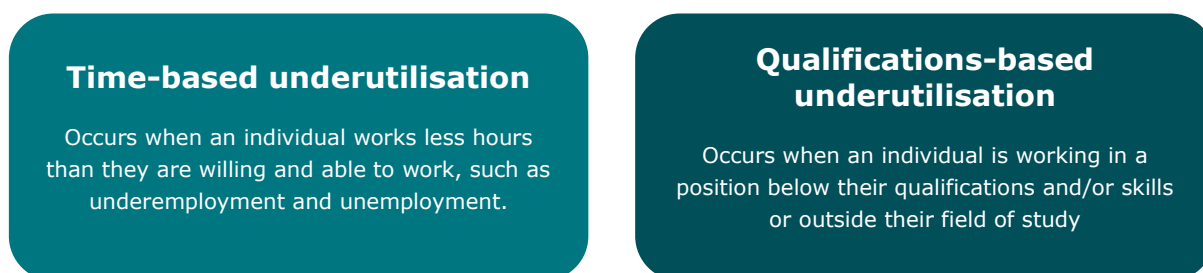
This aligns closely with similar research from South Australia and other Australian jurisdictions:

- ABS data suggests that 33 per cent of recent migrants to Australia reported experiencing difficulty in finding their first job, with the most common difficulties being a lack of Australian work experience, lack of local contacts and language difficulties (ABS, 2020)
- The Continuous Survey of Migrants finds that about 23 per cent of surveyed permanent skilled migrants experienced skills mismatch, finding themselves in a job that was lower than their skill level 18 months after arrival (Department of Home Affairs, 2020)
- In South Australia, 44 per cent of migrants don't work in their nominated occupation (compared to 30 per cent nationally) and 54 per cent of migrants work below their skill level compared to 25 per cent nationally (Committee for Adelaide, 2022)
- Some 53 per cent of employed skilled migrants reporting they felt they were employed at a level below their overseas experience or qualification (Cebulla & Tan, 2019).

This report has explored two types of 'narrow' underutilisation using detailed labour market data: time-based underutilisation and qualifications-based underutilisation. This data provides robust evidence to the magnitude of the problem in South Australia.

These indicators are outlined in the next two sections. Both measures are developed using granular data from the ABS' Labour Force Survey, the key source of labour market macroeconomic data in Australia. More information about the development of these indicators is explained in Appendix A.

Figure 1.1: Overview of underutilisation measures

Time-based underutilisation

Occurs when an individual works less hours than they are willing and able to work, such as underemployment and unemployment.

Qualifications-based underutilisation

Occurs when an individual is working in a position below their qualifications and/or skills or outside their field of study

1.3   Time-based underutilisation

Time-based underutilisation refers to when individuals are working less hours than they are willing and able to work. In this analysis, this includes individuals who are unemployed and individuals who are underemployed (defined as employed persons who worked less hours than usual or people who want to work more hours).

Migrant time-based underutilisation in South Australia has typically tracked higher than Australian born workers, spiking sharply during the initial COVID-19 lockdowns to over 25 per cent and in past economic downturns such as the Global Financial Crisis. Compared to the national average, South Australian time-based underutilisation is higher for both migrants and Australian born workers and more volatile over time.

Migrant underutilisation seems to spike by more than Australian born workers during economic downturns like the Global Financial Crisis and COVID-19. Over COVID-19, the spike in underutilisation seemed to be caused by more underemployed persons than unemployed persons (likely because JobKeeper helped workers hold on to jobs, even if they were disrupted by COVID-19).

Note the gap between the time-based underutilisation rate of migrants and Australian born workers has worsened in South Australia over 2023, while the same trend has not been observed on a national scale.

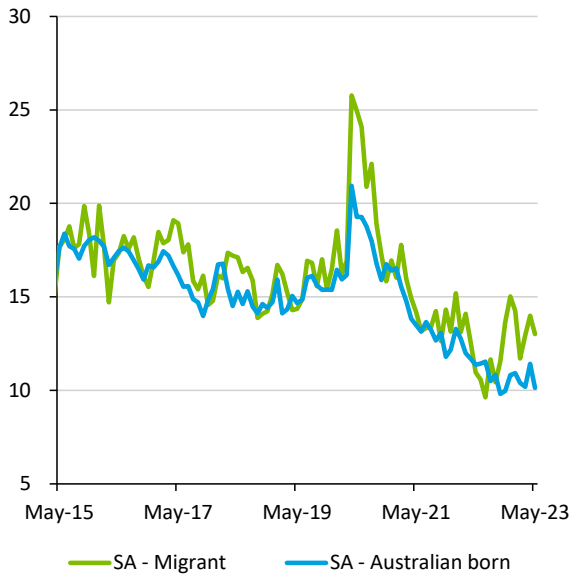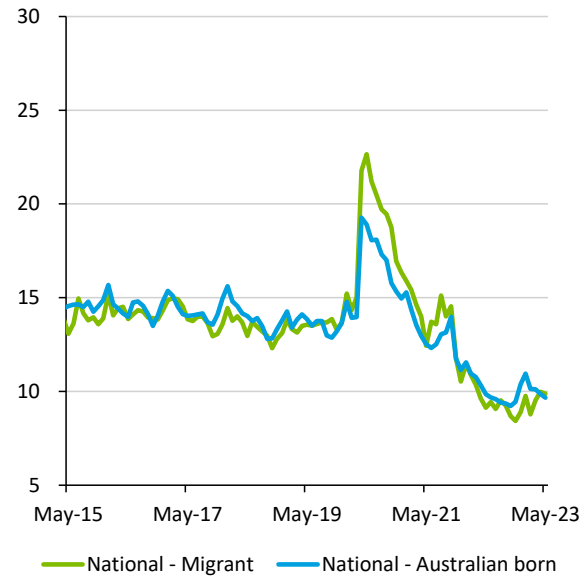Chart 1.3: South Australian underutilisation rate (%) monthly

Chart 1.4: National underutilisation rate (%), monthly

Source: ABS Longitudinal Labour Force Survey, Deloitte Access Economics.

Note: Underutilisation rate = (unemployed + underemployed persons)/ labour force

Relative to other Australian states and territories, South Australia has a uniquely pronounced disparity between the migrant and Australian born rate of underutilisation. Note that South Australia does have a higher overall underutilisation rate than other states, but the difference between migrant and Australian born underutilisation is most pronounced in South Australia.

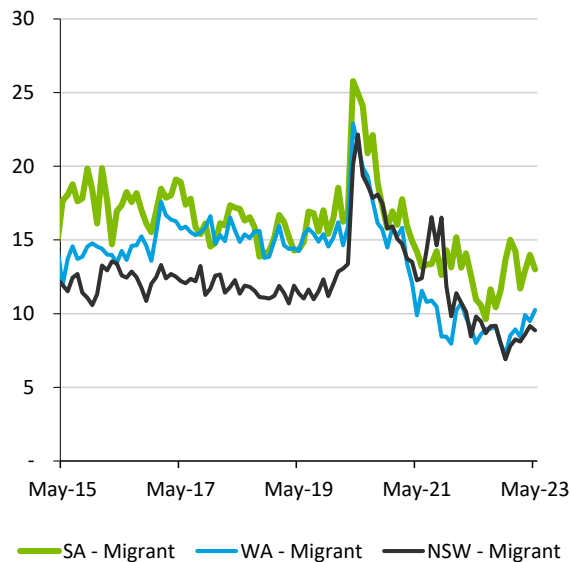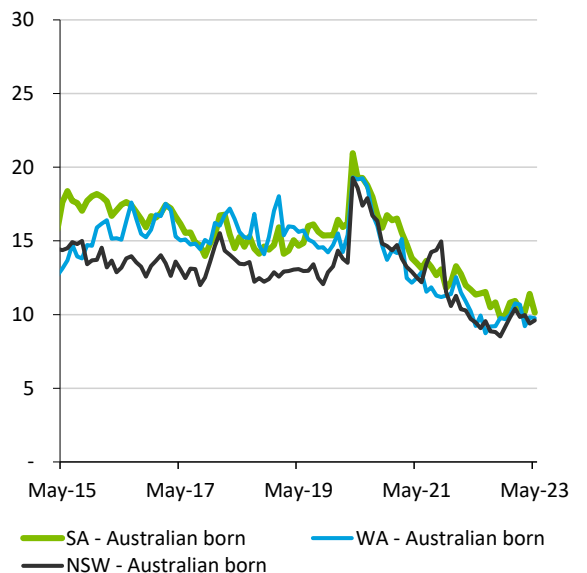Chart 1.5: Migrant underutilisation rates by state (%), monthly

Chart 1.6: Australian born under-utilisation rates by state (%), month

Source: ABS Longitudinal Labour Force Survey, Deloitte Access Economics.

Note: WA and NSW are shown as comparisons. Vic and Qld data is also available, but broadly follow similar trends to NSW.

Data is not available for Tasmania, the Northern Territory or the ACT due to sample sizes.

Migrant labour force participation rates have also changed significantly over time in South Australia. Participation fell steadily between 1985 and the early 2000s, and has since been recovering. The migrant participation rate lifted from about 50 per cent in 2015 to 60 per cent in 2023, compared to a static Australian born participation rate (which has stayed at 67 per cent across the same time period). Again, this divergence of migrant to Australian born participation is more pronounced in South Australia than in other states.

Notably, South Australia has had a stronger recent uptick in the migrant time-based underutilisation rate compared to other states, and this may be in part driven by the uptick in migrant participation. However, given that migrant underutilisation is also rising, this suggests that more migrants could be entering the workforce unemployed or underemployed, rather than going straight into full employment.

Chart 1.7: South Australian participation rates (%), monthly
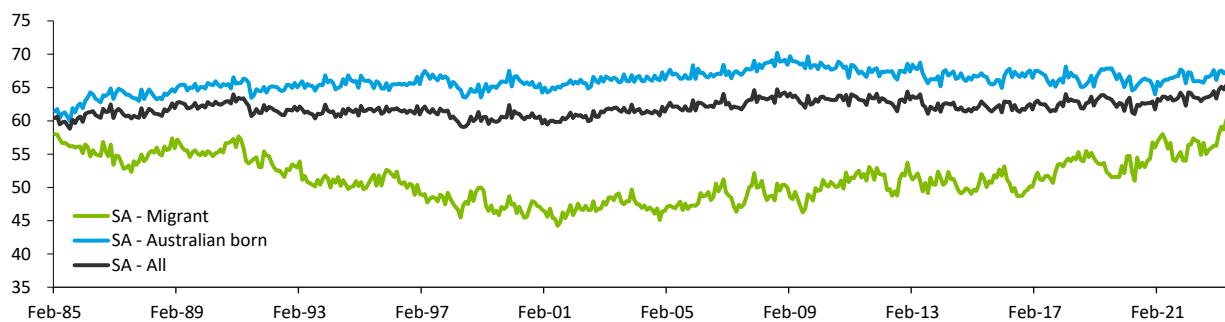
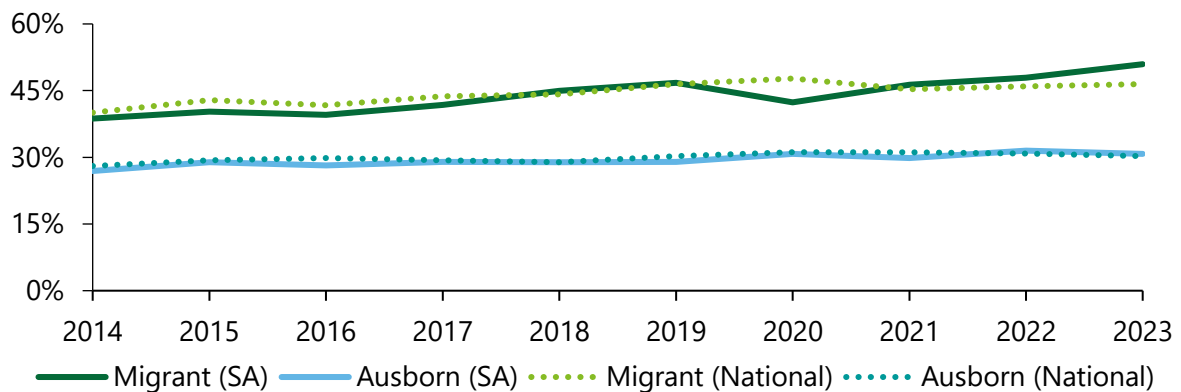Source: ABS Longitudinal Labour Force Survey, Deloitte Access Economics.

1.4   Qualifications-based underutilisation

Qualification underutilisation is harder to measure, but generally refers to when an individual is working at a level *below* what they are qualified or skilled to do. This research defines being 'qualification underutilised' as a person who holds qualifications higher than the 'baseline' entry qualification (the most commonly held qualification for persons in an occupation between 20 and 34 years old).

Notably, migrant qualification underutilisation is substantially higher than Australian born qualification underutilisation. Migrant qualification underutilisation has also been steadily ticking up over time, rising from about 40.1 per cent in 2014 to now 50.9 per cent in South Australia, while Australian-born underutilisation rates have remained steady at about 30 per cent.

Prior literature corroborates this discrepancy. In a 2022 survey conducted by the Committee for Adelaide it was found that 44 per cent of migrants in South Australia do not work in their nominated occupation (compared to 30 per cent nationally) and 54 per cent of migrants work below their skill level (compared to 25 per cent nationally) (Committee for Adelaide, 2022).

Chart 1.8: Qualification underutilisation rate (%), South Australia and national, migrant and Australian born
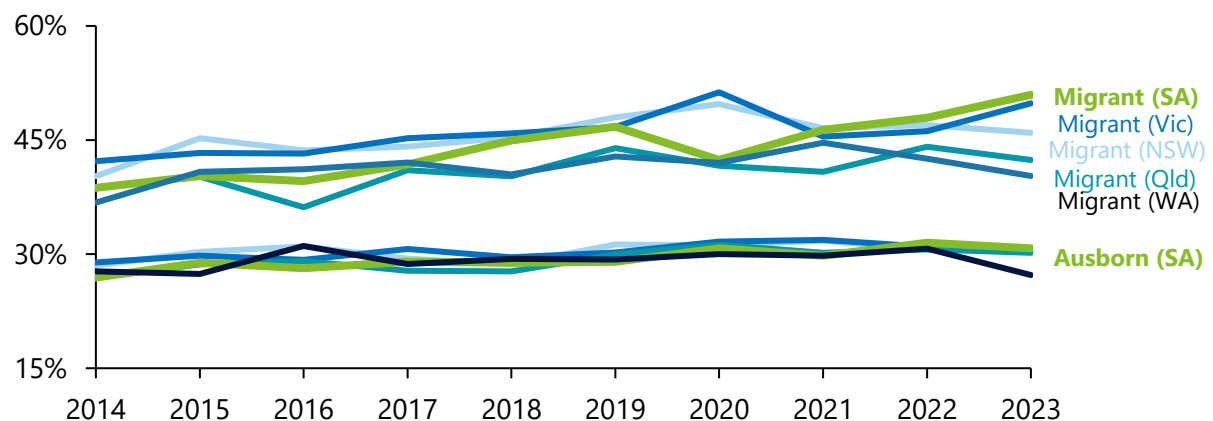

Source: ABS Longitudinal Labour Force Survey, Deloitte Access Economics.

COVID had differing impacts on migrant qualification underutilisation. In heavily impacted states like Victoria and New South Wales, there was a sharp uptick in migrant underutilisation in 2020 (which was not shared by Australian born workers) before underutilisation fell in 2021. In contrast, South Australia, Queensland and Western Australia saw qualification underutilisation fall.

Across larger states,[6] South Australia now has the highest rate of migrant qualification underutilisation. While the gap between migrant and Australian born qualification underutilisation is apparent in both South Australia and nationally, South Australia has uniquely seen an uptick in migrant qualification underutilisation since COVID.

Most other states have also seen the underutilisation rate fall since COVID, except for South Australia and Victoria, even as Australian born underutilisation has held largely constant. This suggests there are different dynamics in play to a degree within South Australia. The causes of underutilisation in South Australia are discussed in Chapter 2.1.

Chart 1.9: Qualification underutilisation rate (%), South Australia and national, migrant and Australian born

Source: ABS Longitudinal Labour Force Survey, Deloitte Access Economics.

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[6] Due to sample sizes in the Australian Bureau of Statistics' Longitudinal Labour Force Survey, data and subsequent comparisons were only available for New South Wales, Victoria, Western Australia and Queensland.

2 Impacts of underutilisation

This chapter examines the social and economic factors that cause underutilisation, which is key to contextualising its impact. As migrant underutilisation is a complex issue, effective solutions are likely to require input from key interest groups including sections of government, industry and community groups.

To build a detailed understanding of the scale, causes and potential solutions to migrant underutilisation in South Australia, Deloitte Access Economics undertook **stakeholder engagements** with representatives from industry, government and community organisations. A list of stakeholders engaged and summary of consultation findings can be found in Appendix B.

Figure 2.1: Key areas of investigation among stakeholder groups

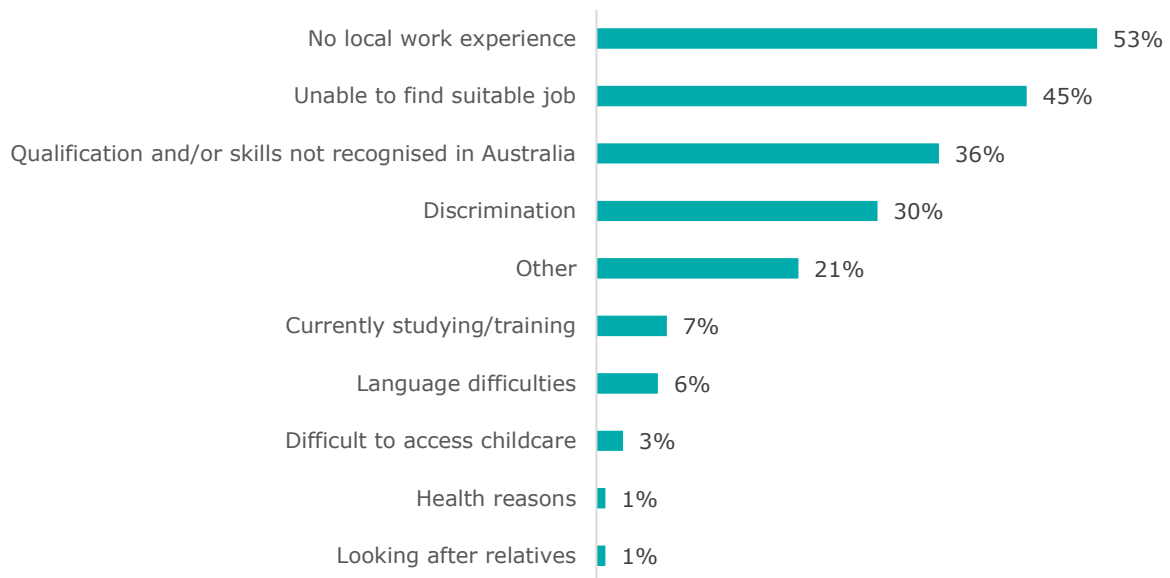| Government	Community groups	Industry
• Understanding of current migration policy and its impact on underutilisation • Understanding of existing barriers • How previous and current policy has impacted underutilisation • Current provision of services • Challenges in implementing policy • Policy recommendations	• Trends impacting demand for services • Differences in migrant settlement in metro SA compared to regional SA • Understanding of existing barriers • Settlement services provided • Engagement with industry and government • How previous and current policy has impacted underutilisation • Policy recommendations	• Perception of migrants within industry • Trends impacting hiring and pay decision for migrants • How South Australia differs from other states • Differences between workers trained in Australia compared to overseas • Barriers to hiring migrant workers • How previous and current policy has impacted underutilisation • Policy recommendations

Key areas of investigation

To understand the current migrant experience seeking employment and utilising qualifications and skills in South Australia, Deloitte Access Economics also designed a **bespoke survey** to overseas-born individuals in South Australia that are of working-age or have prior work experience in South Australia. The survey asked respondents to detail their experiences with the South Australian labour market, skill recognition processes, and awareness of and interactions with support services in South Australia. Further detail on the survey instrument and responses is available in Appendix C.

In total, there were 464 responses to the survey (335 complete, 129 partial). The survey brings to light a more detailed understanding of the barriers and causes of underutilisation, identifies how well known and accessible existing supports are, and tests preferences towards potential future supports.

2.1   Barriers causing underutilisation

Among survey respondents experiencing qualification underutilisation, a lack of work experience, difficulty finding suitable work, and skill recognition were the most commonly cited reasons for their underutilisation. A further 30 per cent cited discrimination as a barrier to using their qualification.

Chart 2.2: Survey respondents' reasons for not using their qualification in their work

Reason	Percentage
No local work experience	53%
Unable to find suitable job	45%
Qualification and/or skills not recognised in Australia	36%
Discrimination	30%
Other	21%
Currently studying/training	7%
Language difficulties	6%
Difficult to access childcare	3%
Health reasons	1%
Looking after relatives	1%

Source: Deloitte Access Economics survey, 2023
Question: *"What is the reason you are not using your qualification in your current role? Tick all that apply"* (n=108)
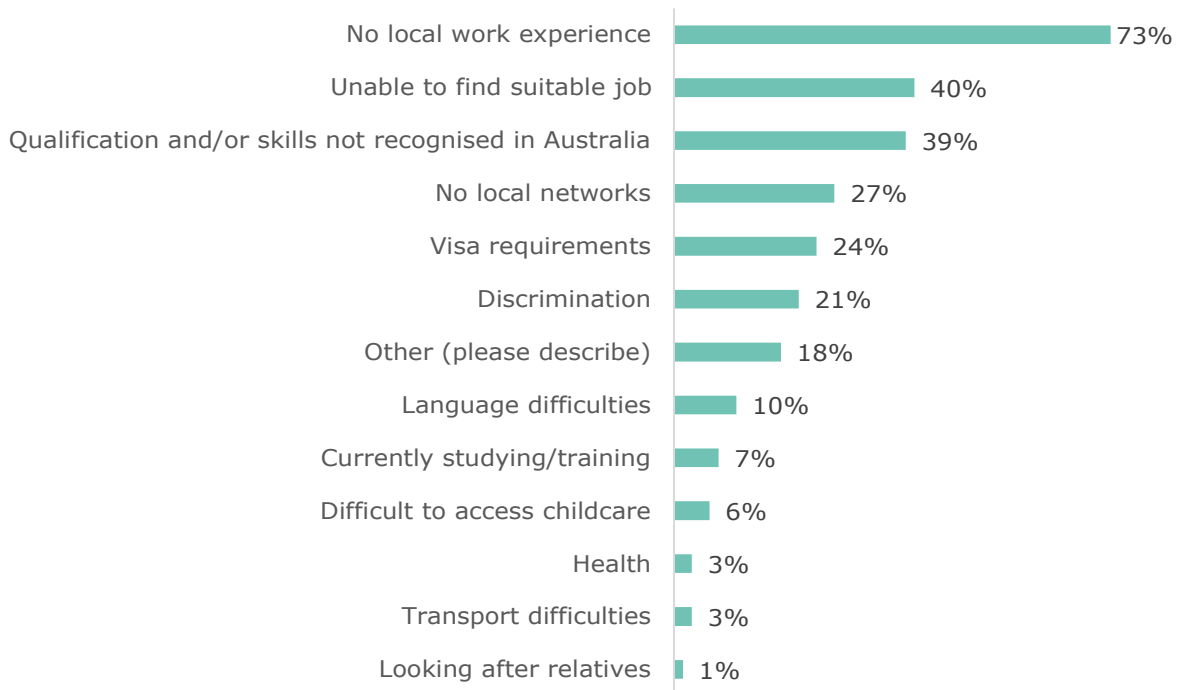
2.1.2 Local work experience

The importance placed on local work experience is consistent with previous research on the topic. In the 2019 ABS Characteristics of Recent Migrants survey of 20,000 migrants throughout Australia, **a lack of Australian work experience and local networks were the top cited difficulties in finding their first job in Australia** (ABS, 2020). The importance placed on local work experience persists in South Australia, with a survey of skilled migrants finding that 43 per cent reported no local work experience as a barrier to employment in the state (Cebulla & Tan, 2019).

Findings from the migrant survey appear to corroborate the notion that local work experience poses a significant barrier to employment for migrants in South Australia. Approximately **3 in 4 unemployed survey respondents cited a lack of local work experience among their primary difficulties finding work**.

Stakeholders noted that the Adelaide labour market is seen as more networked than eastern states, with employers exhibiting a stronger preference for workers with prior local work experience (an 'Adelaide club'). One possible explanation for this is South Australia's high concentration of small to medium enterprises (SMEs) who are more risk averse in hiring decisions and often lack prior experience hiring migrants. Past research investigating hiring practices among organisations of varying sizes has indicated smaller businesses are more likely to rely on referral-based and informal recruitment methods (Greenidge, Alleyne, Parris, & Grant, 2012).

Chart 2.3: Unemployed survey respondents' primary difficulties in finding a job

Difficulty	Percentage
No local work experience	73%
Unable to find suitable job	40%
Qualification and/or skills not recognised in Australia	39%
No local networks	27%
Visa requirements	24%
Discrimination	21%
Other (please describe)	18%
Language difficulties	10%
Currently studying/training	7%
Difficult to access childcare	6%
Health	3%
Transport difficulties	3%
Looking after relatives	1%

2.1.3 Skill recognition

Skill recognition and occupational registration can pose a direct barrier to full utilisation of qualifications and experience gained overseas. **59 per cent of survey respondents applied to have their qualifications and/or professional experience recognised in Australia, and among those applicants 1 in 5 were unsuccessful** (Deloitte Access Economics, 2023a). That is for every 100 migrants, 12 apply and are subsequently unsuccessful in having their qualification recognised. This leaves a sizable proportion of the migrant community with skills and qualifications they are unable to fully benefit from.

This application success rate varies depending on what visa respondents arrived on. Those who arrived on skilled visas had a **higher success rate**, while 1 in every 3 applicants that arrived on family or humanitarian visas **failed to have their qualifications recognised**.

Chart 2.4: Skill recognition success rate among survey respondents, by visa type on arrival

- Successful
- Unsuccessful

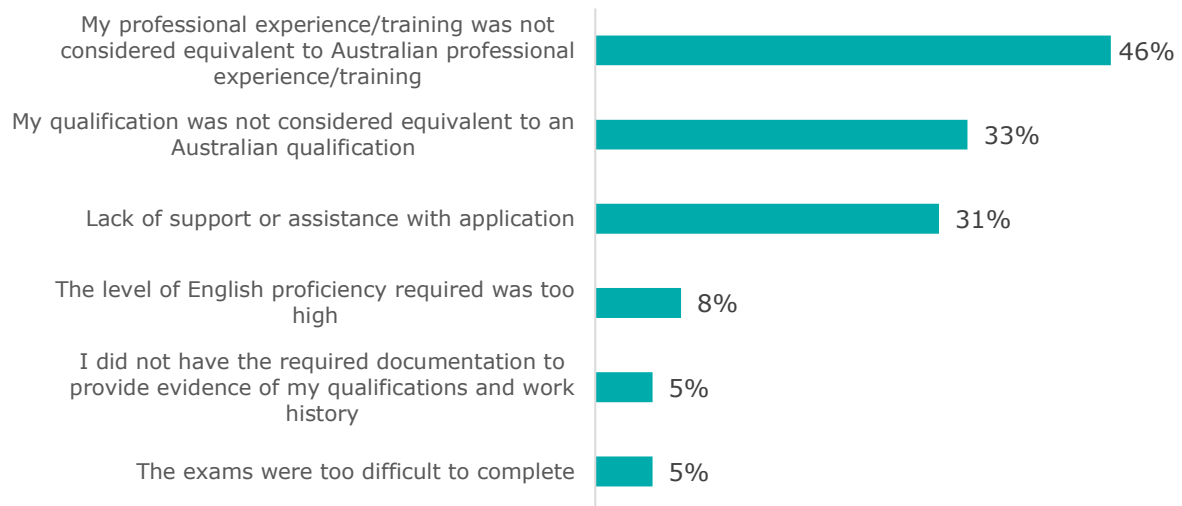Skilled: Successful 85%, Unsuccessful 15%
Family: Successful 65%, Unsuccessful 35%
Humanitarian: Successful 63%, Unsuccessful 38%

This implies skill recognition poses a greater barrier for migrants entering through the family and humanitarian streams.

Unsuccessful applicants were subsequently asked why they thought they were not successful in their application, to which the most common answers related to their qualifications and experience not being considered equivalent to Australian qualifications and experience. Furthermore, a third of applicants felt they were unsuccessful due to a lack of support or assistance with their application, indicating there may be gaps in support for helping migrants through the skill recognition process.

Chart 2.5: Respondents' given reason for being unsuccessful in their skill assessment application
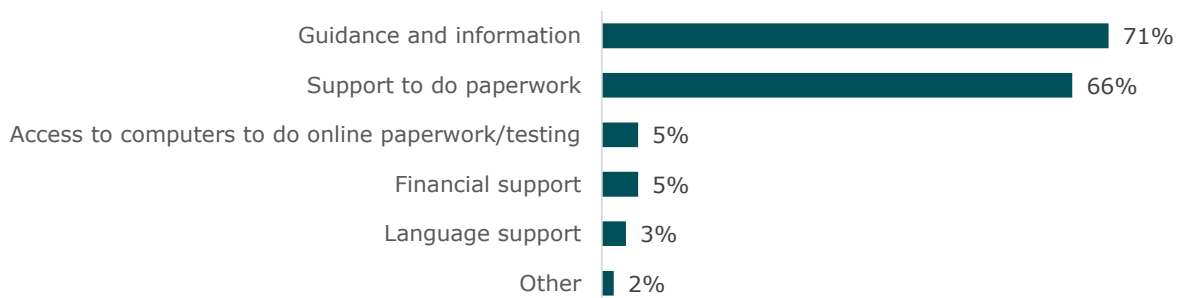
Reason	Percentage
My professional experience/training was not considered equivalent to Australian professional experience/training	46%
My qualification was not considered equivalent to an Australian qualification	33%
Lack of support or assistance with application	31%
The level of English proficiency required was too high	8%
I did not have the required documentation to provide evidence of my qualifications and work history	5%
The exams were too difficult to complete	5%

Source: Deloitte Access Economics survey, 2023
Question: *"Why do you think you were unsuccessful in having your qualifications and/or professional experience/training recognised? Tick all that apply"* (n=39)

Although Skilled and Business Migration provides a free skill recognition service for migrants with qualifications gained overseas, some financial barriers remain.

Some 29 per cent of applicants received assistance during the skill recognition process. Among these respondents, 3 in 4 accessed this support from a migration agent or someone they paid to assist them. This assistance was usually in the form of guidance and information to navigate the skill recognition process or support to do paperwork.

Chart 2.6: Assistance received during the skill assessment process

| Assistance type	Percentage
Guidance and information	71%
Support to do paperwork	66%
Access to computers to do online paperwork/testing	5%
Financial support	5%
Language support	3%
Other	2%

Source: Deloitte Access Economics survey, 2023
Question: *"What kind of assistance did you receive? Tick all that apply"* (n=59)

Additionally, 83 per cent of respondents reported needing to pay for additional tests or certifications to complete their skills assessment. 71 per cent paid for an English language test and 1 in 3 paid to have relevant documents translated during the process.

Chart 2.7 Additional tests and/or certifications required to complete skill assessment

English language test	71%
Document translation	33%
Other	12%
Additional exams	12%
None of the above	17%
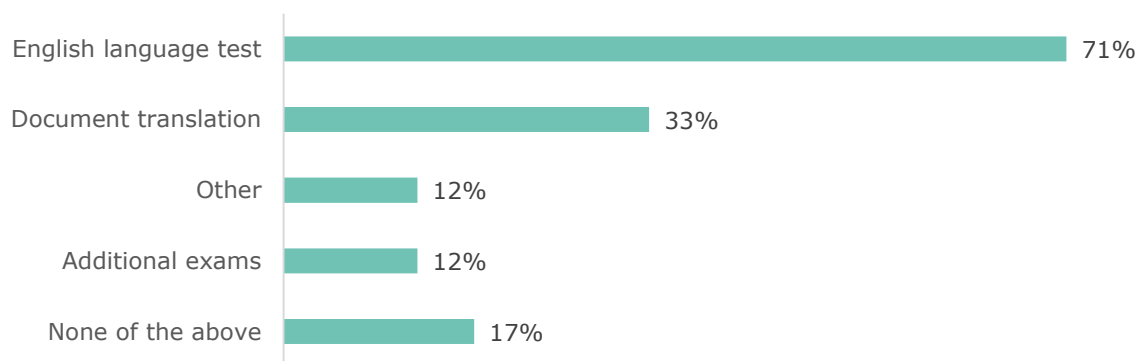
Source: Deloitte Access Economics survey, 2023

Question: *"To complete your skills assessment, did you need to pay for any additional tests or certifications? Tick all that apply."* (n=215)

Therefore, although skill recognition is relatively accessible in South Australia, there remain barriers and complexities to overcome for many individuals.

2.1.4   Discrimination and unconscious bias

Many survey respondents reported experiences of discrimination inhibiting their career progression. 30 per cent of survey respondents cited discrimination as a reason why they were unable to use their qualification at work (Chart 2.2) and 21 per cent of unemployed respondents felt discrimination was a primary difficulty in finding a job (Chart 2.3). This aligns with previous research into bias against migrants in recruitment processes in Australia, where discrimination against migrants on the basis of name and language have been associated with skill underutilisation (Fernando, Almeida, & Dharmage, 2015).

In a recent report by the University of Sydney and Crescent Foundation, researchers noted a gap between intent and action among Australian employers consulted with. Although many displayed appetite for hiring refugee workers, many employers lacked a purposeful strategy to hire individuals from disadvantaged groups and were less willing to consider applicants with low conversational English proficiency (The University of Sydney & Crescent Foundation, 2023).

In consultation with stakeholders from industry organisations, many felt there is a sense that it is more difficult for migrants to feel accepted in SA. Employers appear to be more wary of "outsiders", which may be reflective of more risk-averse hiring practices of SMEs. Wariness of outsiders can be exaggerated in the regions, where it can be difficult to enter a community. Additionally, a lower proportion of migrants in high professional positions compared to eastern states can create the perception of a "glass ceiling" for migrants in South Australia, making career progression more challenging (Deloitte Access Economics, 2023c).

2.1.5   Settlement challenges

The impact of settlement on underutilisation is more challenging to quantify, but reflects the experiences of many migrants moving to South Australia.

Many stakeholders identified a lack of employment and settlement support for family and secondary migrants due to the expectation that their relatives will care for them. Particularly, a lack of child care support can make it unfeasible for spouses to seek employment. Similarly, gaps exist in settlement support for skilled migrants due to the expectation that they will be able to support themselves during the job search or will have found work early in the migration process.

Adelaide's public transportation options can pose an additional barrier to settlement and employment. The CBD is readily accessible through current public transportation networks, but regional South Australia and intra-suburb travel see less coverage. Stakeholders noted that car ownership is typically an expectation among regional employers, which can be a barrier to settling outside the CBD. For migrants without a licence, acquiring a driver's licence in South Australia is a

multi-year process requiring at least 75 hours of supervised driving experience. This process can be time consuming and costly, particularly if an individual lacks a close contact to assist them.

Stakeholders with experiences of the migration process noted the overwhelming nature of moving to a new country. South Australia lacks the scale of multicultural communities compared to eastern states, making it challenging to break into local communities and support networks. Without settlement support, individuals may be more likely to apply for "survival jobs" outside their field or below their skill level to ensure their needs are met (Deloitte Access Economics, 2023c).

Case study – Pankaj

Pankaj arrived in South Australia on a temporary skilled visa from Kenya eight years ago with his wife and two children. Despite his academic achievement, including an undergraduate degree in aeronautical science and a postgraduate degree in business administration and finance from universities in the US, he faced difficulty finding job opportunities appropriate to his skill level in South Australia.

One of the main difficulties Pankaj faced was employer bias against temporary visas. Where he was able to secure work at lower pay, he experienced harassment and racial discrimination in the workplace. The lack of employment opportunities and career progression at his skill level made it challenging to support his family, particularly in the early years of the COVID-19 pandemic.

To improve his career prospects, Pankaj undertook upskilling to gain local networks and business experience. Although this has helped him secure work, opportunities for work in his area of expertise and meaningful career progression remain limited. Despite enjoying the peace and security of South Australia, he feels he is unable to meaningfully contribute due to limited opportunities and bias.

"*I think there needs to be a change in heart with the way Australians look at migrants. Look for long term benefits to themselves and the communities, I think that would really make a positive change*." - Pankaj

2.2   Detailed profile of migrant underutilisation

Many of the barriers above uniquely impact migrants. The relationship between migrant status and underutilisation in Australia is explored below using econometric analysis.

The same data that informed the estimates of time and qualification underutilisation were used – though the econometrics are conducted at the **national level** as there was insufficient sample size at the South Australia state level.

The analysis reveals that for **time underutilisation,** being a migrant in most cases *does* increase the probability of being time underutilised than Australian born – but the extent of this depends on different characteristics like **age, gender, and time since arrival.**

Importantly, some factors increase the probability of being time underutilised for both migrants and Australian born workers. Being female increases the probability of time underutilisation, as does being within the younger age cohort (25 to 34 years old). Note that the 25-34 age cohort has a higher probability of being underutilised than the 55+ cohort, which reflects broader labour market trends.

For migrants in particular, **time since arrival to Australia** also impacts the probability of being time underutilised. Migrants who have arrived most recently, within the last five years, have higher probabilities of being time underutilised, and this probability falls progressively for migrants who have been Australia for longer.

This likely reflects a few different factors: firstly that migrants take time to settle and find employment (particularly for family and humanitarian visa holders), and may also reflect policy

change over the past 20 years which has changed how much migrants can work and what occupations they can work in.

To understand the impacts of the above factors on migrant time underutilisation, a few select cohorts are displayed in Figure 2.2. This outlines both the probability of time underutilisation for that particular cohort and also the percentage point difference with the baseline comparison group: 25-34 year old males who were born in Australia.

From this, we can see that particular factors which are more likely to lead to time underutilisation can compound. This means **25-34 year old female recent migrants who arrived in the last five years** have the highest probability of time underutilisation (18.5 per cent) which is 8.7 percentage points higher than the baseline group and higher than other migrant cohorts too.

Figure 2.2: National time underutilisation probabilities

Compared to a 25-34 year-old male Australian born who has a 9.8 per cent probability of being time underutilised:

	Probability of time underutilisation	Changes the probability by	
Being a 25–34 year-old, male recent migrant who arrived in the last five years	14.5%	4.7 pp	
Being a 25-34 year-old, female recent migrant who arrived in the last five years	18.5%	8.7 pp	
Being a 35–54 year-old male migrant who arrived between 6 and 10 years ago	10.1%	0.3 pp	
Being a 35–54 year-old female migrant who arrived between 6 and 10 years ago	13.1%	3.2 pp	
Being a 55+ year-old male migrant who arrived 20+ years ago	9.3%	-0.5 pp	
Being a 55+ year-old female migrant who arrived 20+ years ago	12.0%	2.2 pp	

Source: Deloitte analysis of ABS Longitudinal Labour Force data.

Note: full logit regression coefficients and probabilities are discussed in the Appendix.

For **qualification underutilisation,** there is a similar finding – migrants overall largely have a higher probability of being qualification underutilised, but the extent depends on a number of characteristics.

Firstly for both migrants and Australian born workers, having below Bachelor degree qualifications substantially *reduces* the likelihood of being qualification underutilised. This makes sense as the definition of qualification underutilisation looks at where workers hold qualifications *higher* than the most commonly held qualification level within an occupation, so lower qualification levels would be less likely to experience qualification underutilisation.

Secondly, being female increases the probability of being qualification underutilised for both migrants and Australian born workers. Thirdly, the middle age cohort (35-54) is more likely to be qualification underutilised than the younger (25-34) and oldest (55+) cohorts.

For migrants in particular, being a recent migrant who arrived within the last ten years significantly increases the probability of being qualification underutilised compared to migrants who arrived 10+ years ago. This may reflect the fact that migrants also are more likely to enrol in

study the longer they have lived in Australia, which may lead to better matching of skills and qualifications.

Similar to time underutilisation, these factors can also compound. As below, **35-54 year old female recent migrants with a Bachelor degree or above** have the highest probability of being qualification underutilised – 19.4 percentage points higher than the base comparison group of 25-34 year old male Australian born workers with a Bachelor degree or above.

Figure 2.3: National qualification underutilisation probabilities

Compared to a 25-34 year-old male Australian born with a Bachelor degree or above who has a 51.1 per cent probability of being qualification underutilised:

	Probability of qualification underutilisation	Changes the probability by	
Being a 25–34 year-old, male recent migrant with a Bachelor or above	65.7%	14.6 pp	
Being a 25–34 year-old, female recent migrant with a below Bachelor qualification	32.9%	-18.2 pp	
Being a 35–54 year-old, male recent migrant with a Bachelor or above	68.5%	17.5 pp	
Being a 35–54 year-old, female recent migrant with a Bachelor or above	70.5%	19.4 pp	
Being a 55+ year-old male migrant who arrived 10+ years ago with a Bachelor degree or above	59.2%	8.2 pp	
Being a 55+ year-old female migrant who arrived 10+ years ago with a Bachelor degree or above	61.4%	10.4 pp	

Source: Deloitte analysis of ABS Longitudinal Labour Force data.

Note: full logit regression coefficients and probabilities are discussed in the Appendix. For qualification underutilisation, the analysis splits migrants only into recent migrants (who arrived in Australia within the last 10 years) and other migrants (arrived 10+ years ago).
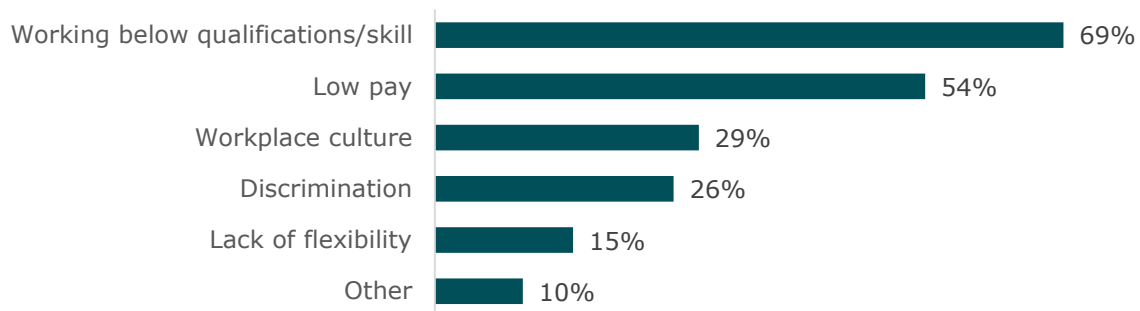
2.3   The economic and social costs of underutilisation

The economic cost of underutilisation is a consequence of lost productivity resulting from migrant workers being unable to fully apply their time, skill and qualifications in their employment.

Underutilisation can have detrimental effects across a range of social indicators. Past research using data from the Longitudinal Survey of Immigrants to Australia between 1993-2005 identified a persistent association between underutilisation and mental health outcomes, with **underutilised migrants experiencing poorer mental health on average** (Reid, 2012). In research undertaken by Deloitte Access Economics for Multicultural Affairs Queensland in 2018, underutilisation was demonstrated to have **negative impacts on migrants health, family and belonging in Australia** (Deloitte Access Economics, 2018).

From current survey results, underutilisation appears to have **negative consequences on job satisfaction**. Among survey respondents that reported being unhappy with their current employment, the top reason cited was working below their qualifications/skills.

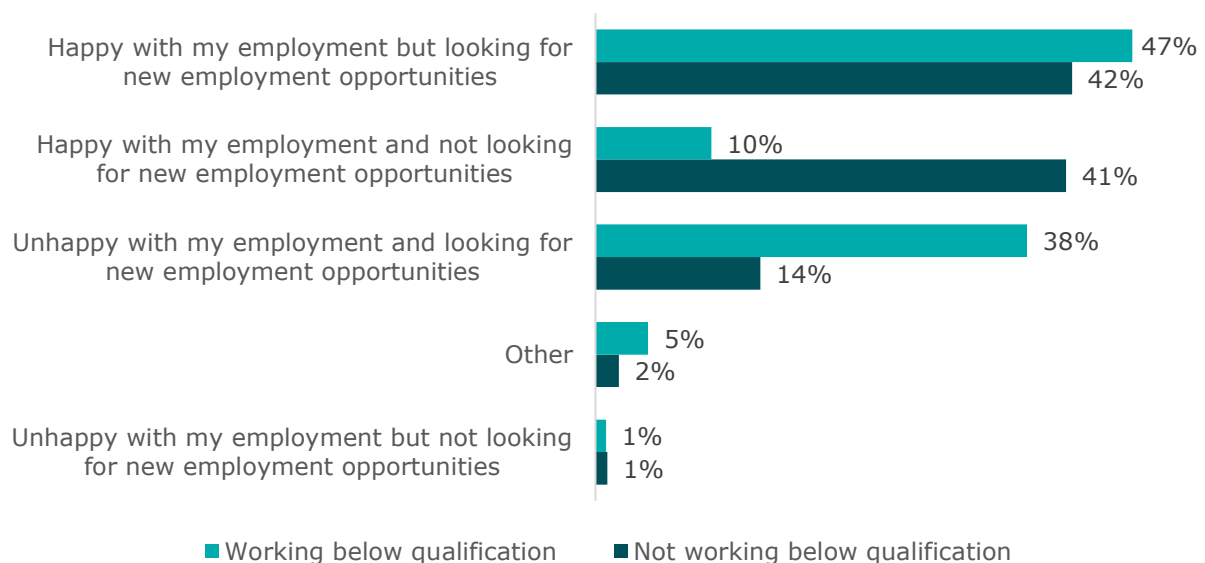Chart 2.8: Respondents' reason for being unhappy with current employment

Working below qualifications/skill	69%
Low pay	54%
Workplace culture	29%
Discrimination	26%
Lack of flexibility	15%
Other	10%

Source: Deloitte Access Economics survey, 2023
Question: *"Why are you unhappy with your current employment?"* (n=72)

This impact on job satisfaction is further illustrated when comparing responses between individuals that work below their qualifications (i.e. qualifications-based underutilised individuals) and individuals working in a job that matches their qualification. Only 10 per cent of underutilised respondents reported being happy with their employment and not looking for new opportunities, compared to 41 per cent among utilised respondents. Additionally, 39 per cent of underutilised respondents in total reported being unhappy with their employment, compared to 15 per cent of utilised respondents.

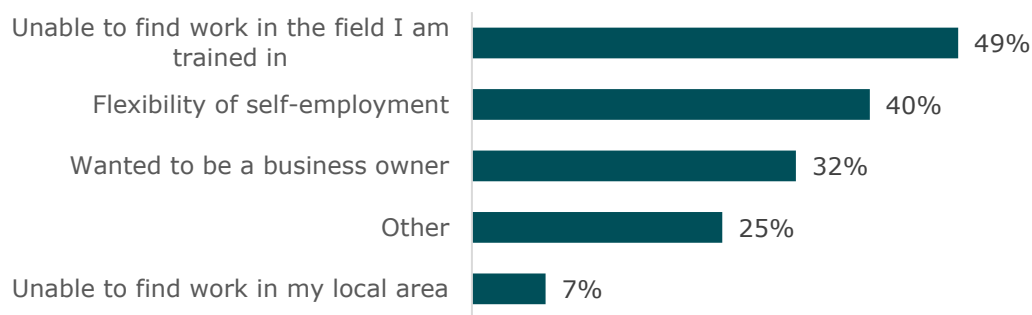Chart 2.9: Job satisfaction among survey respondents

	Working below qualification	Not working below qualification
Happy with my employment but looking for new employment opportunities	47%	42%
Happy with my employment and not looking for new employment opportunities	10%	41%
Unhappy with my employment and looking for new employment opportunities	38%	14%
Other	5%	2%
Unhappy with my employment but not looking for new employment opportunities	1%	1%

■ Working below qualification ■ Not working below qualification

Source: Deloitte Access Economics survey, 2023
Question: *"Please select the statement that best describes you. Currently, I am:"* (n=304)
(n$_{\text{working below qualification}}$=109) (n$_{\text{not working below qualification}}$=195)

Furthermore, the above chart illustrates that underutilised workers are more likely to search for other opportunities. This appears to extend to self-employment, where underutilisation drives individuals to start their own business. Among survey respondents that started a business in South Australia, **half started their business because they were unable to find work in the field they were trained in.**

Chart 2.10: Respondents' reasons for starting a business in South Australia

Reason	Percentage
Unable to find work in the field I am trained in	49%
Flexibility of self-employment	40%
Wanted to be a business owner	32%
Other	25%
Unable to find work in my local area	7%

Source: Deloitte Access Economics survey, 2023
Question: *"Why did you decide to start your own business in South Australia? Tick all that apply."* (n=68)

Case study – Caroline

Caroline arrived in Australia in 2002 from the United Kingdom, backpacking across the country. When she came to Adelaide, she felt it was a good place to settle down and start a family. She loved the Adelaide Hills with its beautiful landscapes and short drive to the city, and the regional skilled migration program offered a pathway to permanent residency.

Early in her move she had success finding work in her field due to employers recognising her work experience in the United Kingdom. However, because there are few head offices based in the state, finding more senior roles in South Australia has been challenging.

Due to a lack of appropriate jobs, she started a small consultancy business in South Australia to maintain an income while supporting her daughter through schooling. Ultimately, she did not want to be a business owner, but felt she had limited options in South Australia.

Despite becoming part of the local community and raising a family in Adelaide over the last 20 years, the lack of job positions in her field have made her to consider moving interstate. Caroline loves the lifestyle in South Australia and would love to stay if the opportunities were available.

"*It was a toss up between going to Melbourne or somewhere else for the big corporate career, or live in Adelaide and raise children in this gorgeous environment*" – Caroline
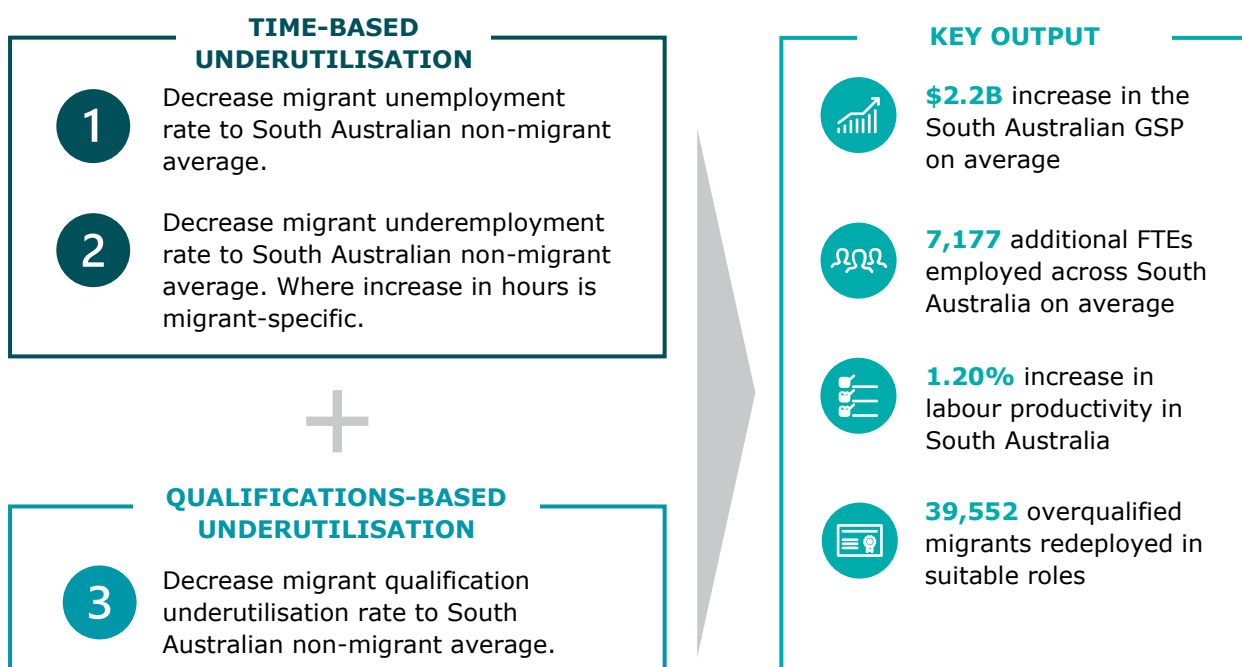
3 The opportunity for South Australia

The chapter quantifies the economic opportunity of improving utilisation rates in South Australia. This reflects much of what is already discussed in the report: that migrant underutilisation is an enduring issue which is preventing migrants in South Australia from reaching their full potential.

3.1   Headline results

If overseas born workers were utilised at the same rate as Australian born workers, the South Australian economy would be around $2.2 billion larger on average.

This figure is estimated by modelling the impact of decreasing the migrant underutilisation rate from its current 46 per cent to 29 per cent, in line with the average Australian born worker. The subsequent economic growth is a consequence of enhanced labour productivity and employment in the migrant community as workers' skills and time is better utilised.

Figure 3.1: Modelled average impact of lowering the migrant underutilisation rate, 2024-2028

TIME-BASED UNDERUTILISATION

1 Decrease migrant unemployment rate to South Australian non-migrant average.

2 Decrease migrant underemployment rate to South Australian non-migrant average. Where increase in hours is migrant-specific.

+

QUALIFICATIONS-BASED UNDERUTILISATION

3 Decrease migrant qualification underutilisation rate to South Australian non-migrant average.

KEY OUTPUT

$2.2B increase in the South Australian GSP on average

7,177 additional FTEs employed across South Australia on average

1.20% increase in labour productivity in South Australia

39,552 overqualified migrants redeployed in suitable roles

3.2   Economic impact of reducing underutilisation

This section discusses the potential wider economic impacts of increasing the utilisation of skilled migrants in the South Australian economy using DAE-RGEM – Deloitte's regional general equilibrium model.

3.2.1   CGE methodology

A change (or shock) in any part of the economy has impacts that reverberate throughout the rest of the economy. For example, increasing the utilisation of skilled migrants could increase economic activity throughout a region, by increasing firms' access to a key factor of production – labour – and therefore increasing the productive capacity of the economy.

This study seeks to model these impacts using the Deloitte Access Economics Regional General Equilibrium Model (DAE-RGEM). DAE-RGEM is a large scale, dynamic, multi-region, multi-

commodity computable general equilibrium (CGE) model of the world economy with bottom-up modelling of Australian regions. DAE-RGEM encompasses all economic activity in an economy – including production, consumption, employment, taxes, and trade – and the inter-linkages between them. For this project, the model has been customised for the South Australian economy adopting its unique economic characteristics. Further detail as to the modelling framework used is provided in Appendix D.

3.2.2   Scenarios

Base case scenario

Modelling the impact of any scenario requires establishing a suitable baseline, against which the impacts of a scenario can be measured. A reference case, or 'business as usual' scenario was developed which reflects a trajectory of the South Australian economy between 2024 and 2028. This scenario imposes baseline projections for growth in population and GSP.

Policy scenario

The policy case offers a stylised scenario designed to capture the size of the potential economic impact of increased migrant utilisation in South Australia. The scenario is designed to capture the average impact of increased utilisation over a five-year period between 2024 and 2028. This is captured via imposing two key modelling assumptions associated with migrant worker underutilisation:

- **Time-based underutilisation**
  - When an individual works less hours than they are willing and able to work, such as underemployment and unemployment. The scenario increases employment and effective supply of labour, as underutilised (unemployed and underemployed) migrants are redeployed to achieve the same rate of employment as Australian born workers. The additional labour is assumed to fully pass through to employment, absorbed by corresponding demand across specific sectors.

- **Qualifications-based underutilisation**
  - When an individual is working in a position below their qualifications and/or skills or outside their field of study. The scenario applies an economy-wide uplift in the productivity of labour. This would be expected to occur if migrant workers were employed in jobs which are more aligned with their skills and training.

This modelling exercise implements these changes to the economy immediately; they do not slowly build up over time. Consequently, the results indicate the potential uplift if the increases to the labour force and productivity were to happen immediately in 2024 and remain in place for the next five years. Any realised gains to the economy could extend beyond this timeframe and may be influenced by external factors such as policy changes.

A five-year timeframe was selected for the modelling to allow for the scenario to incorporate any economic adjustments which develop over time. The results presented should be interpreted as the average annual difference between the Base case and the Policy scenario over this five-year time frame.
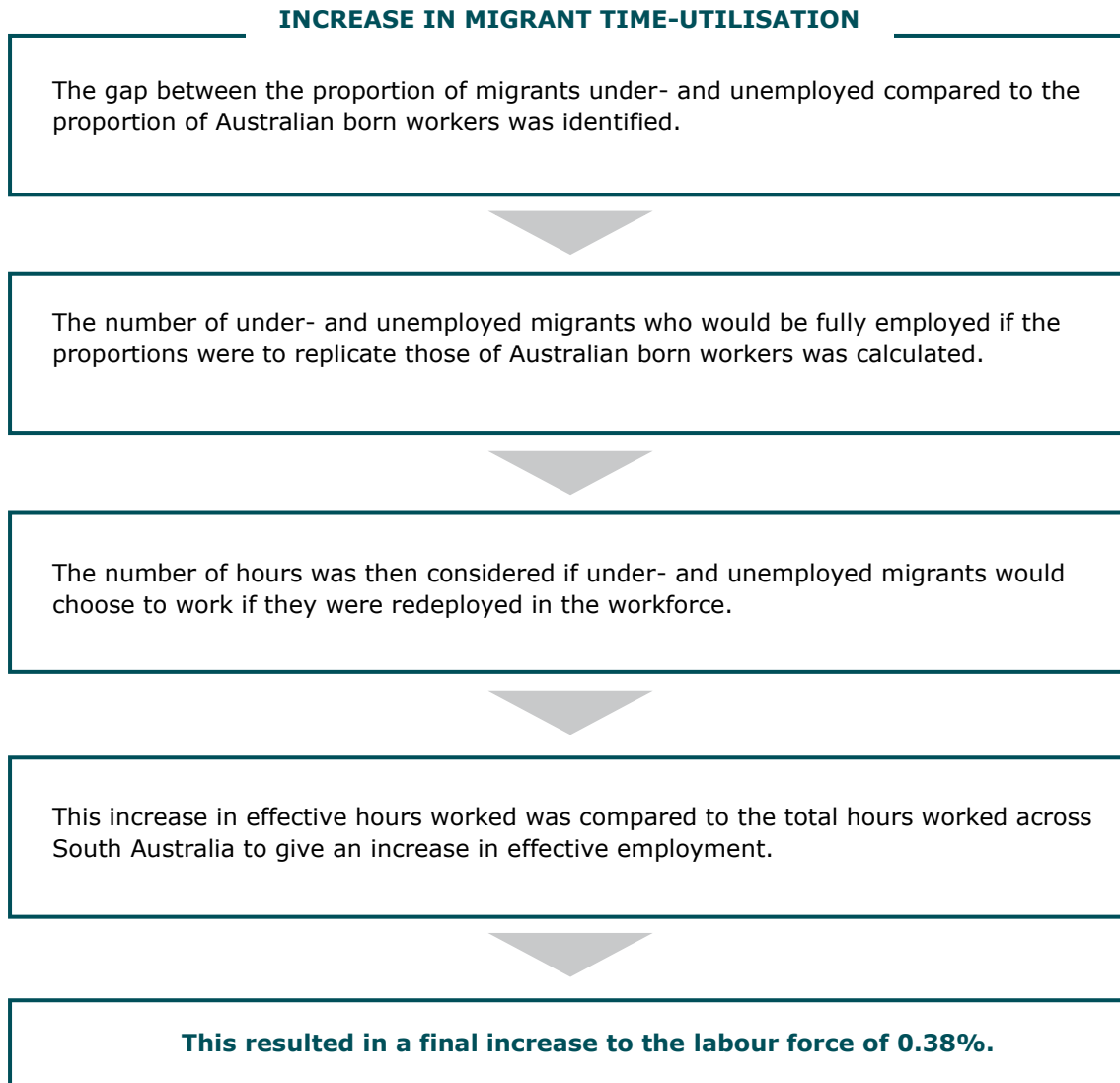
3.2.3 Inputs and assumptions

This section summarises the key data and assumptions used in calculating the shocks applied in the policy scenario.

Time-based underutilisation

Longitudinal labour force data and 2021 Census data from the Australian Bureau of Statistics (ABS) were used to inform the inputs for time-based underutilisation using the following process:

Figure 3.2: Time-based underutilisation

INCREASE IN MIGRANT TIME-UTILISATION

The gap between the proportion of migrants under- and unemployed compared to the proportion of Australian born workers was identified.

The number of under- and unemployed migrants who would be fully employed if the proportions were to replicate those of Australian born workers was calculated.

The number of hours was then considered if under- and unemployed migrants would choose to work if they were redeployed in the workforce.

This increase in effective hours worked was compared to the total hours worked across South Australia to give an increase in effective employment.

This resulted in a final increase to the labour force of 0.38%.

Qualifications-based underutilisation

Data from the 2021 Census collected by the ABS as well as HILDA 2018 findings were used to inform the qualifications-based underutilisation shock. Data on the level of education, country of birth and occupation was collected for South Australian workers. The process for calculating the productivity input is as follows:

Figure 3.3: Qualifications-based underutilisation

INCREASE IN MIGRANT QUALIFICATION-UTILISATION

The average level of qualification holding for all workers across South Australia in each detailed (4-digit ANZSCO) occupation was identified.

The gap between the proportion of migrants not utilising their qualification in their position was compared to the proportion of Australian born workers.

The number of overqualified migrants who could be redeployed if proportions were to replicate those of Australian born workers was calculated.

The expected boost to productivity for each occupation if those who hold a qualification over the aggregate level were to be redeployed was calculated.

This number was then adjusted for the number of employees per occupation and found the aggregate expected productivity boost. This boost was non-occupation specific as it is assumed the reallocation of migrants will not be within their same role.

This resulted in a final increase in productivity of 1.2%

3.2.4   Results

Results of the modelling indicate that increasing migrant-worker utilisation would have a positive impact on the South Australian economy, increasing Gross State Product (GSP) and employment (in Full-Time Equivalent, FTE, terms). Results show that the South Australian economy would be approximately $2.2 billion, or 1.3 per cent larger on average between 2024 and 2028 if skilled migrants were to achieve the same rates of utilisation as Australian born workers. In terms of employment, there could be an additional 7,177 FTEs employed on average between 2024 and 2028. Approximately 77 per cent of the impacts to GSP are attributable to productivity effects of increased qualifications-based utilisation, with the remaining 23 per cent driven by additional labour supply from increased time-based utilisation.

Table 3.1: Summary of average economic impacts, 2024 -2028

	Time underutilisation	Qualification underutilisation	Total impact
Gross State Product ($m)	502	1,687	**2,195**
Gross State Product (% change)	0.3	1.0	**1.3**
Employment (FTEs)	3,844	3,323	**7,177**

Source: Deloitte Access Economics

Gross state product

Increasing the utilisation of migrant workers is expected to impact South Australia's economic activity in several ways. Labour is a key factor of production across the economy. Reducing time-based underutilisation of migrant workers increases the availability or a key input production, enabling additional output. Increasing qualifications-based utilisation enables migrants to work in roles better aligned to their skills and qualifications, improving the productivity of labour across the state, strengthening the economy.

Chart 3.1: Average deviation in value added, 2024-2028
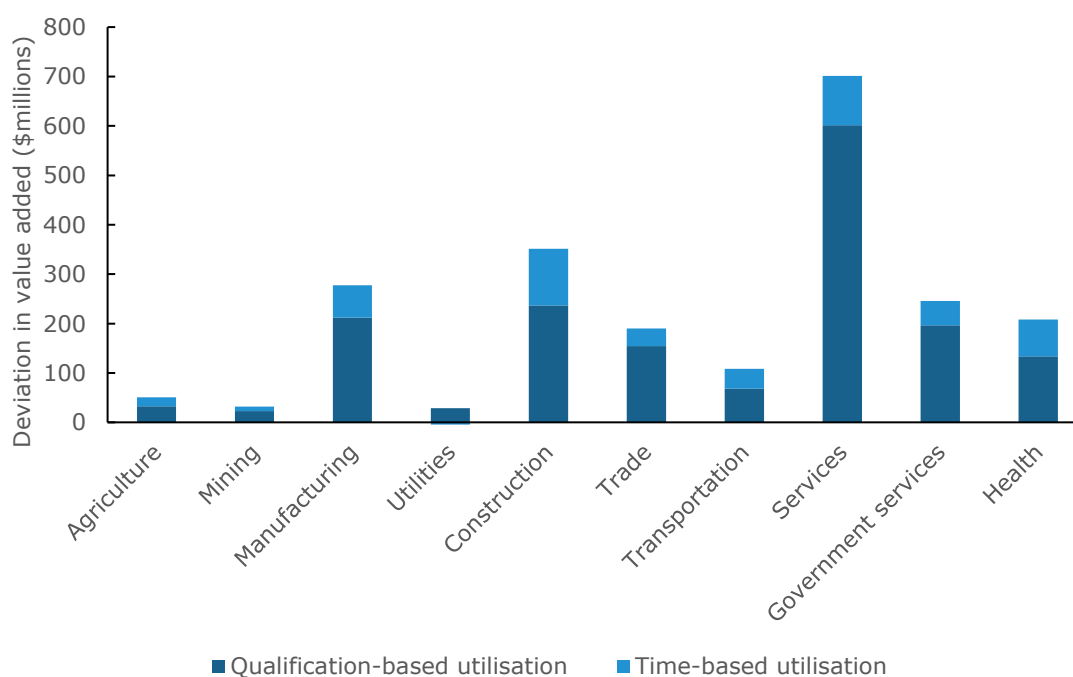
Employment impacts

The most positively impacted sectors from improving **time-based utilisation** are those where migrants are expected to go based on their qualification composition, and where a concurrent unmet demand for skilled labour is assumed to exist. These include high-skilled jobs such as services, health and manufacturing. Higher-skilled jobs will typically pay higher wages, which flows on to higher consumption spending. Expansion in sectors like services and manufacturing also creates flow-on employment impacts in other industries such as trade and construction. It is assumed there is a corresponding demand for labour in these sectors. Reducing time-based underutilisation sees an additional 3,384 FTE jobs on average per annum in South Australia during the modelling period. This shock does not reflect targeting specific industries based on the migrant qualifications.

Improving **qualifications-based utilisation** manifests through a broader labour productivity effect, as migrants able to work in roles better aligned to their skills and qualifications move into higher wage roles, enabling more output per worker. A more productive economy catalyses additional investment activity, which generates flow-on employment impacts in sectors beyond those directly benefiting. Improving qualifications-based underutilisation leads to an additional 3,323 FTE jobs in South Australia on average per annum during the modelling timeframe.

The **total employment opportunity** for South Australia reflects an improvement in both migrant time- and qualifications-based utilisation. Targeting both streams would result in 7,177 additional FTE jobs on average per annum in South Australia throughout the modelling timeframe.

Chart 3.2: Average deviation in Employment (FTEs), 2024-2028
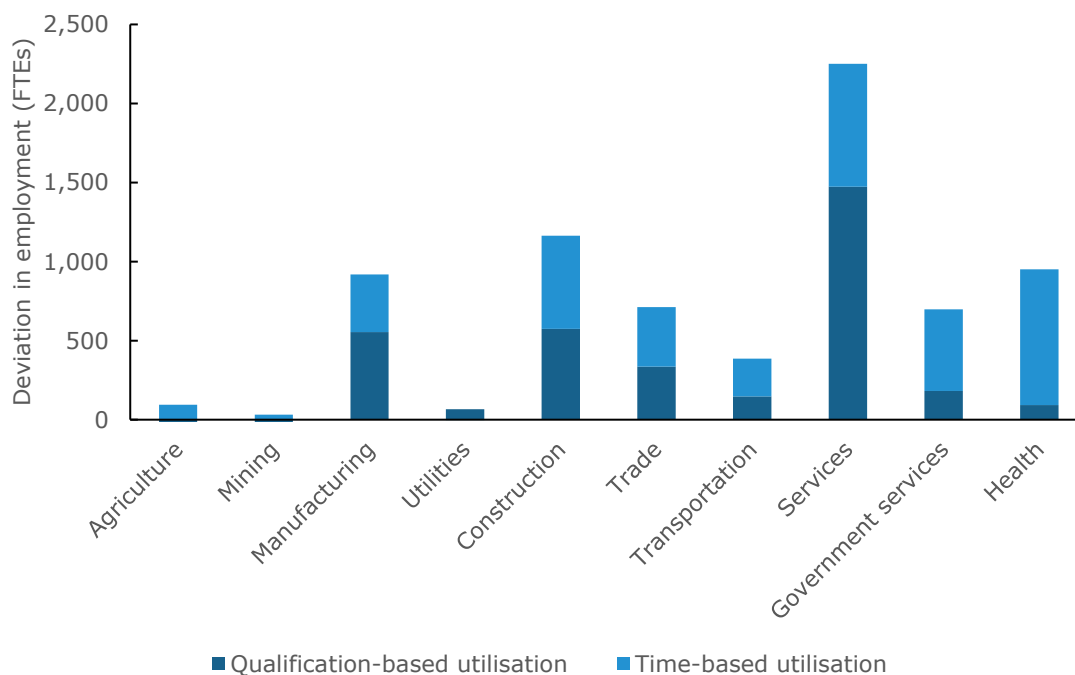
4 The current migrant experience

This chapter further investigates different migrant experiences, particularly in relation to why they chose South Australia and their access to support services. This draws on survey results, consultation findings and individual case studies.
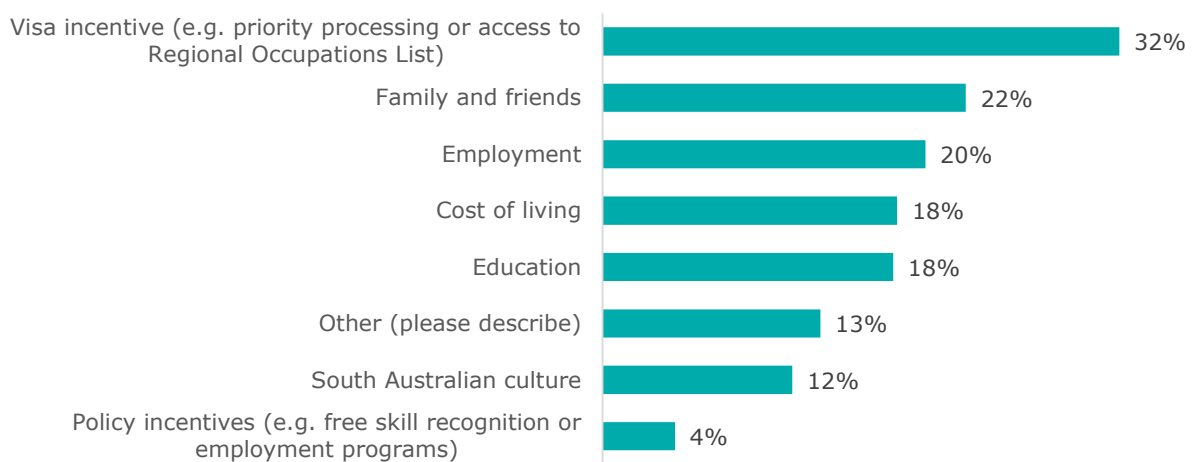
To further highlight the experiences of individual migrants in South Australia, select case study examples are also showcased in this chapter.

4.1 Why South Australia

When asking migrants why they chose to settle in South Australia, the most popular response was 'visa incentives'. This includes Adelaide's classification as a Category 2 designated regional area, which allows skilled migrants access for a variety of incentives such as priority processing of visas and a greater list of eligible occupations.

This designation is an important draw to Adelaide, but is not the only reason that migrants choose South Australia. Existing communities and relationships are an important pull factor for migrants everywhere, so it is unsurprising that 'family and friends' is the second highest cited reason for choosing South Australia. Over time as South Australia's migrant population continues to grow and more migrant communities are formed, the importance of this factor may rise.

Chart 4.1: Reasons for coming to South Australia

Reason	Percentage
Visa incentive (e.g. priority processing or access to Regional Occupations List)	32%
Family and friends	22%
Employment	20%
Cost of living	18%
Education	18%
Other (please describe)	13%
South Australian culture	12%
Policy incentives (e.g. free skill recognition or employment programs)	4%

Source: Deloitte Access Economics survey, 2023
Question: "*Why did you choose to come to South Australia? Tick all that apply*" (n=402)

Case study – Shahin

Shahin is an engineer from Iran that migrated to South Australia with his wife and daughter. After spending time in Spain and the US, he decided to settle in South Australia and never regretted his decision. Shahin loved the culture, friendly community and safety in South Australia and felt it was the right location to raise his family.

Despite being State sponsored as a biomedical engineer, Shahin faced challenges finding appropriate full-time work in his first year in South Australia. He found it challenging to find information and assistance as a skilled migrant, such as how to write a resume or what employers look for in an interview. He had to access support from multiple providers which became cumbersome to manage.

Building community connection and networks through local childcare playgroups and cultural communities helped support Shahin and his family to settle in South Australia. Shahin has devoted himself to giving back to the community, having worked in multiple community and professional organisations to support migrants in South Australia. There are many things he wishes he knew when he first arrived and hopes to pass on that wisdom to others.

Shahin would recommend South Australia to friends looking for a place to raise their family. His advice to them is to prepare for a period of time to settle and find work, engage with the community, and attend many networking events to make the most of South Australia.

"*I believe that if I can do something for the community, I'm making the community a better area for my daughter and then she can do the same for the next generation, and this is the simple way to create a healthy and successful environment.*" - Shahin

4.2   Support services

A variety of support services are available in South Australia with eligibility dependent on factors such as visa type and recency of arrival. These services are provided by a complex web of organisations, including government, industry and community groups.
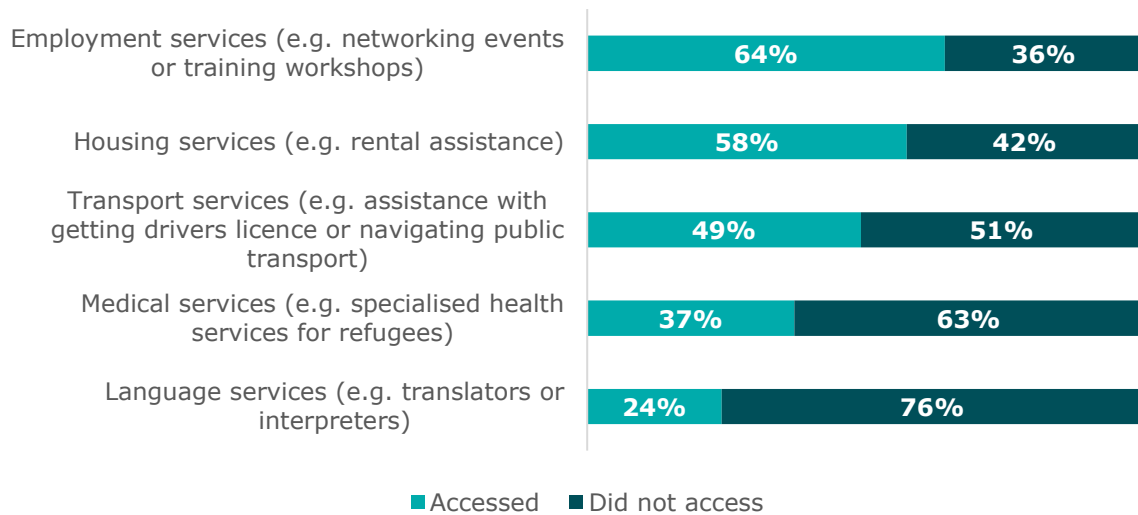
There is valuable support available in South Australia to support migrants through many common challenges during their settlement, although gaps persist. Skilled & Business Migration provides free qualification recognition services to migrants in South Australia with qualifications gained overseas, but this does not extend to trade qualifications, individual subjects or work experience. A network of community organisations provide information and guidance for new arrivals in South Australia, but often lack the information necessary to make first contact.

Due to the range of services, providers and eligibility requirements, there appears to be a lack of clarity surrounding what support is available. The migrant survey further investigates access to and impact of support services in South Australia.

4.2.1   Access and impact of support services

Employment and housing services were accessed most among survey respondents, with over half accessing some form of support under these categories. Language services were accessed least among respondents. This appears to reflect a lack of need rather than significant barriers to access, with 4 in 5 respondents reported not needing the service.

Chart 4.2: Proportion of respondents accessing types of support services
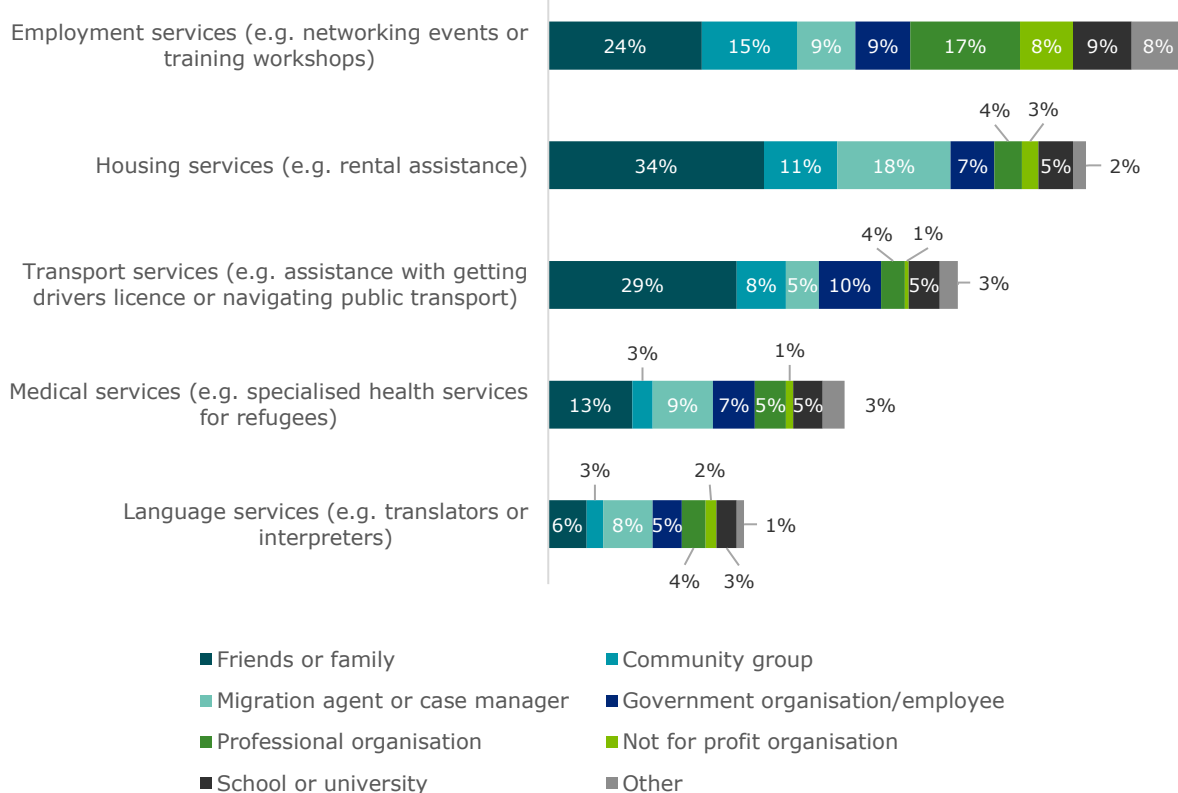

Employment services (e.g. networking events or training workshops): Accessed 64%, Did not access 36%

Housing services (e.g. rental assistance): Accessed 58%, Did not access 42%

Transport services (e.g. assistance with getting drivers licence or navigating public transport): Accessed 49%, Did not access 51%

Medical services (e.g. specialised health services for refugees): Accessed 37%, Did not access 63%

Language services (e.g. translators or interpreters): Accessed 24%, Did not access 76%

■ Accessed ■ Did not access

Respondents accessed support from a diverse range of providers, with the leading provider varying depending on the type of support. The percentages below are not mutually exclusive, as some respondents accessed one category of support from multiple providers.

Chart 4.3: Service providers respondents accessed support from

Employment services (e.g. networking events or training workshops): 24%, 15%, 9%, 9%, 17%, 8%, 9%, 8%

Housing services (e.g. rental assistance): 34%, 11%, 18%, 7%, 4%, 3%, 5%, 2%

Transport services (e.g. assistance with getting drivers licence or navigating public transport): 29%, 8%, 5%, 10%, 4%, 1%, 5%, 3%

Medical services (e.g. specialised health services for refugees): 13%, 9%, 3%, 7%, 5%, 1%, 5%, 3%

Language services (e.g. translators or interpreters): 6%, 8%, 3%, 5%, 4%, 2%, 3%, 1%

■ Friends or family   ■ Community group
■ Migration agent or case manager   ■ Government organisation/employee
■ Professional organisation   ■ Not for profit organisation
■ School or university   ■ Other

Respondents accessed informal support at high rates from friends and family across categories. Housing services stand out in this respect, which may indicate a gap in formal housing support leading to migrants relying on friends and family for help. Given the high level of demand, this may present an opportunity to yield substantial benefits through formal targeted support in this area.

In terms of formal support, the most prominent service providers vary across categories. Respondents were most likely to access housing, medical and language services from their migration agent or case manager, while employment services were more likely to be accessed from a professional organisation. Government organisations show more prominence in the provision of transport and medical services.

Multiple stakeholders identified gaps in employment and settlement support for spouses and family migrants. Representatives from organisations that offer support to migrants noted a lack of clarity around who has the responsibility to settle student and state sponsored migrants. This indicates a need for a coordinated approach across service providers to ensure needs are being met.

Where employment services are available, such as career expos and networking events, there appears to be limited awareness among the migrant community. Among survey respondents that did not access employment support services, half were unaware they were available.

Chart 4.4: Reason for not accessing employment support services

Reason	Percentage
Was not aware of service	40%
Did not need service	40%
Not eligible for service	22%
Other reason	2%
Too complex or burdensome to access	6%
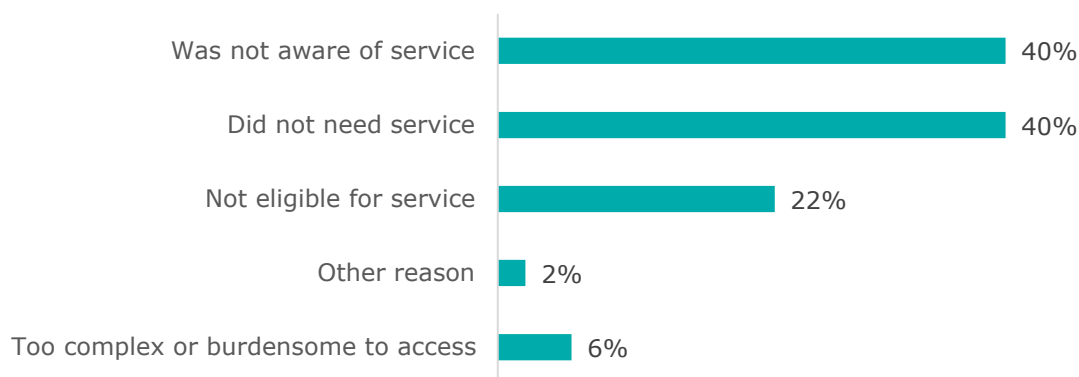
Source: Deloitte Access Economics survey, 2023
Question: *"Why did you not access the following services? Tick all that apply."* (n=117)

The high proportion of respondents not being aware of employment services may indicate an opportunity in promoting existing services.

Housing and employment services appear to present the greatest discrepancy between need and access. Among respondents who did not access housing and employment support, 40 per cent and 29 per cent respectively did so because they did not need those services. This implies over half of these respondents were unable to access a service they could benefit from due to a lack of awareness, eligibility constraints, complexity, or other barriers. This indicates an area of need to be considered in policy development.

A key consideration in evaluating existing support services is how effective they are in benefiting migrants. When asking survey respondents to rank services against each other, housing and employment services were commonly ranked as highly beneficial. Housing services lead, with 78 per cent of respondents that accessed housing services ranking them first or second in terms of impact. Employment services follow closely, with 70 per cent ranking them first or second.

Chart 4.5: Impact ranking of support service

Service	1st	2nd	3rd	4th	5th
Housing services	50%	28%	11%	6%	5%
Employment services	36%	34%	15%	10%	5%
Language services	16%	16%	37%	19%	12%
Transport services	12%	27%	24%	27%	11%
Medical services	12%	22%	37%	22%	7%

■1st ■2nd ■3rd ■4th ■5th
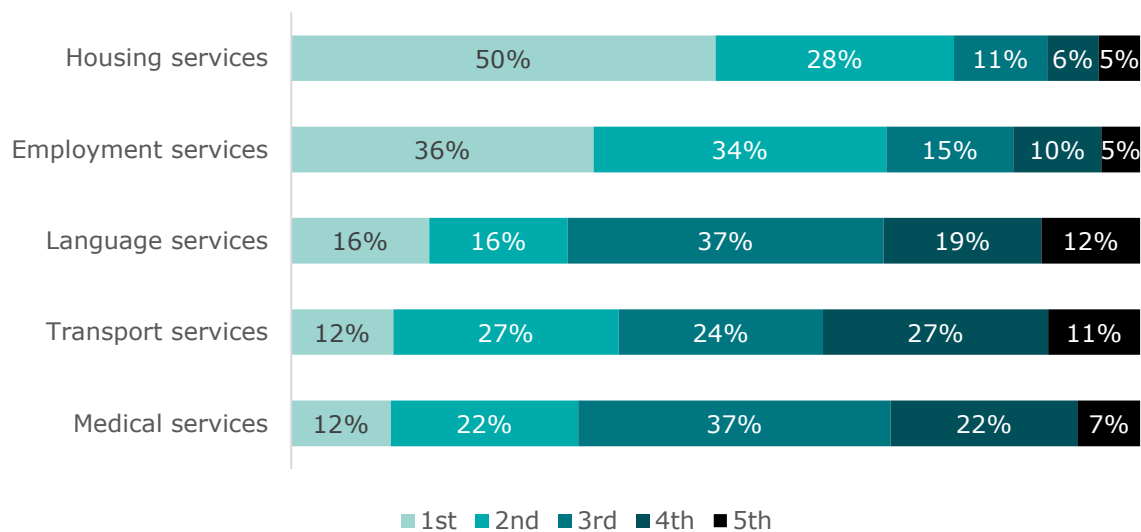
Source: Deloitte Access Economics survey, 2023

Question: *"Of the services you accessed, which were the most beneficial? Please drag and drop the services to rank them by impact, with 1 being most beneficial."* (n=87)

This further highlights a focus on housing and employment services, which are consistently ranked highly in terms of access and impact.

Case study – Mansoor

Mansoor moved to Australia from Pakistan in 2011. Initially arriving in Sydney close to his family, he moved to Adelaide after securing a job as an engineer.

His employer supported him move and find local accommodation, which greatly helped him to settle in South Australia. He found it challenging to find rental accommodation in Australia as a migrant and believes that the support from his employer made a great difference. They also provided general information on local schools and suburbs.

Before securing this position, Mansoor had applied for hundreds of jobs in Australia and encountered bias in the interviewing process, feeling his skill and experience was not respected, and although this has improved overtime, the bias still exists. As a result, Mansoor feels he is years behind his peers and wishes he should have entered the Australian workforce earlier in life. He felt pressured to outperform his peers to gain the same level of respect and represent his community.

Mansoor has switched a few employers overtime and is grateful to the assistance he received from some unbiased people in the industry. Mansoor now volunteers for professional organisations to support new skilled migrants coming to South Australia. He gives advice to individuals in his field on how to present themselves in the local labour market and shift perceptions.

"It's like a country town, people like to live in their own circles. But if you can make friends within the circle, then you can have good friendships." - Mansoor

4.2.2   Preference towards potential support services

To further examine preferences towards support services, respondents were asked to select only three services they would most like to see implemented among a selection of nine options.

Chart 4.6: Support services ranked in respondents' top 3
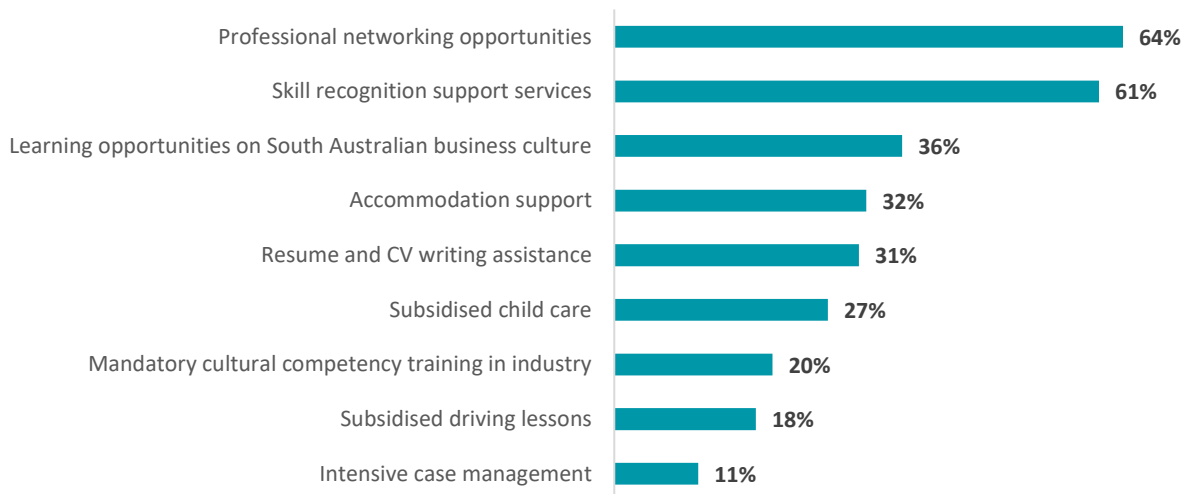
Support service	%
Professional networking opportunities	64%
Skill recognition support services	61%
Learning opportunities on South Australian business culture	36%
Accommodation support	32%
Resume and CV writing assistance	31%
Subsidised child care	27%
Mandatory cultural competency training in industry	20%
Subsidised driving lessons	18%
Intensive case management	11%

Source: Deloitte Access Economics survey, 2023
Question: *"If only 3 policies could be implemented, which 3 would you choose? Select 3 options."* (n=330)

2 in 3 respondents placed professional networking opportunities in the top 3, followed closely by skill recognition support opportunities. This aligns with industry and community consultations on the barriers posed by a lack of local work experience and the skill recognition process. Professional and career support services were most commonly selected, showing a strong preference for employment assistance.

Preference towards types of support varies by demographic. When comparing responses among respondents on different visa types:

- Secondary visa holders were more likely to value skill recognition, accommodation and child care support than primary visa holders.
- Humanitarian visa holders were more likely to value intensive case management and less likely to value skill recognition support compared to skilled and family visa holders.
- Family visa holders were more likely to value skill recognition and child care support than skilled and humanitarian visa holders.

Chart 4.7: Select services chosen in respondent's top 3 by visa type
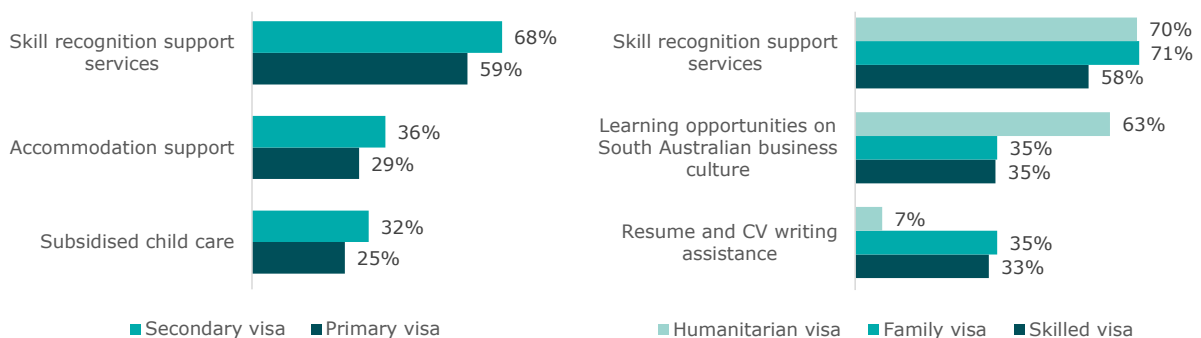
Source: Deloitte Access Economics survey, 2023
Question: *"If only 3 policies could be implemented, which 3 would you choose? Please select exactly 3 options."* (n=330) (nPrimary=30) (nSecondary =300)

This may demonstrate a greater need for wrap-around settlement support among secondary visa holders. Additionally, the professional needs among migrants appears to vary by visa type, with humanitarian visa holders having a greater preference towards business culture learning

opportunities and family visa holders showing preference for resume writing assistance on average.

Chart 4.8: Select services chosen in respondent's top 3 by birth country
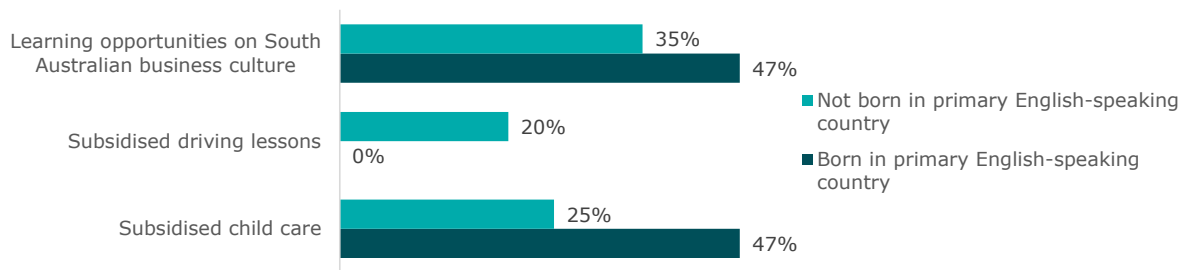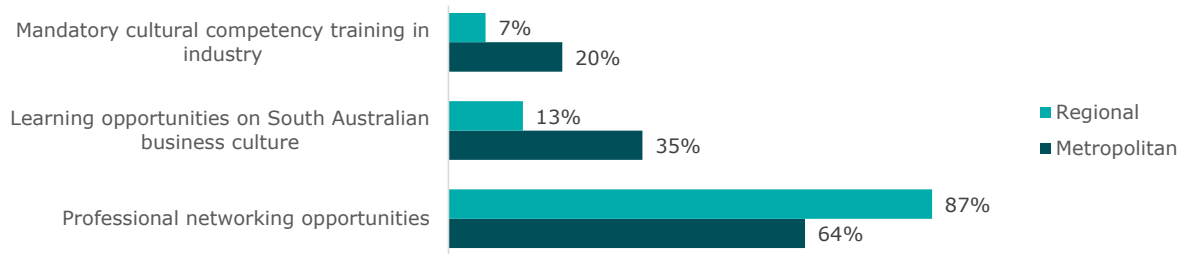

Source: Deloitte Access Economics survey, 2023
Question: *"If only 3 policies could be implemented, which 3 would you choose? Please select exactly 3 options."* (n=330) (n_English-speaking=30) (n_Non-English-speaking=300)
Note: Primary English-speaking countries include: New Zealand, United States, Canada, United Kingdom, Ireland, South Africa.

Among the 30 respondents born in English-speaking countries, none placed subsidised driving lessons in their top 3 chosen policies. This contrasts with responses from migrants not born in primary English-speaking countries, 20 per cent of which placed high value on subsidised driving lessons. This indicates a particular cohort of need for support gaining a driver's licence in South Australia.

Respondents born in primary English-speaking countries placed higher importance on subsidised child care and learning opportunities on South Australian business culture.

Chart 4.9: Select services chosen in respondent's top 3 by location in SA

Source: Deloitte Access Economics survey, 2023
Question: *"If only 3 policies could be implemented, which 3 would you choose? Please select exactly 3 options."* (n=314) (n_Metropolitan=299) (n_Regional=15)

Some 87 per cent of respondents based in regional South Australia selected professional networking opportunities in their top 3 chosen policies. This shows a greater need for networks and community building in regional locations, where multicultural communities may be smaller and professional networks may be more difficult to break into.

Respondents from Adelaide and surrounding suburbs were more likely to value cultural competency training and learning opportunities on South Australian business culture.

4.3 Long term outcomes

Migrant experiences soon after they arrive in Australia, and their use of settlement services, can impact long-term migrant outcomes. Consultations revealed that the first 24 months of arrival is a critical period for policy interventions, as employers are more reluctant to hire individuals that have not worked in their field for over two years (Deloitte Access Economics, 2023c).

According to ABS data, a number of economic and social outcomes for permanent migrants in Australia improve over time (ABS, 2023a). For example, migrants who arrived since 2000 were more likely to be enrolled in further study the longer they had lived in Australia. The proportion of migrants enrolled in further education were:

- 2 per cent for migrants who had lived in Australia for less than 5 years
- 7 per cent for migrants who had lived in Australia for more than 10 years
- highest for Humanitarian migrants (10 per cent) who had lived in Australia for more than 10 years.

Similarly for home ownership, the proportion of migrants who owned their own homes increased the longer the migrant lived in Australia:

- 38 per cent for migrants who lived in Australia for less than 5 years
- 71 per cent for migrants who lived in Australia for more than 10 years.

Case study – Kim

Kim moved to South Australia from Malaysia in 2012 to study at a local university.

Her family travelled with her temporarily to help her settle in Adelaide. When her family moved back to Malaysia, she struggled with feeling isolated, homesick and overwhelmed. She felt unsure of who to go to for support and where to ask questions. As time went on, she was able to form friendship groups through a local church group. Through this church group, she met her husband and later started a family in Adelaide.

During her studies, she took up volunteering and mentoring opportunities to get local work experience. These experiences helped her prepare for entering the workforce, experience different fields of work and build professional networks. Kim also accessed a job skill support program for migrants, which helped her develop skills in resume building and job searching in the local job market. Through a recommendation from a volunteering opportunity, Kim was able to secure her first job in South Australia.

Kim established a local community organisation to support other migrant women in South Australia. She is passionate about helping others, and feels migrant women face unique challenges and benefit greatly from a safe space and support network. She now hosts events to give advice she would have found useful earlier in life, such as job search strategies and building mental resilience.

"*I think the job piece is difficult, but if you have a community that's always supporting you then it should be ok.*" – Kim

5 Seizing the opportunity

5.1   Policy goals

This report has discussed a variety of complex and interconnected challenges causing migrant underutilisation.

Barriers to employment and career progression have the most direct impact on underutilisation in the migrant community. As discussed in Chapter 2.1, some of the most commonly experienced challenges related to employment include a lack of local work experience, having skills and/or qualifications not recognised in Australia, and discrimination and unconscious bias.

As outlined in Chapter 2.1.5, stakeholder consultations revealed how a challenging settlement process and lack of wrap-around support services can cause underutilisation. There are gaps in wrap-around services for skilled and family migrants due to the expectation that they will be able to support themselves or be supported by relatives, which may not always be accurate. Without settlement support, individuals may take on "survival jobs" below their level of qualification to meet day-to-day expenses.

Survey results indicate that many migrants are unaware of support services available to them in South Australia, as discussed in Chapter 4.2.1. South Australian employers are more likely to place importance on local work experience and referrals in recruitment processes as a risk mitigation strategy, which can make it challenging for migrants to enter professional networks. Additionally, the smaller scale of multicultural communities in South Australia compared to eastern states could make it more difficult to form connections.

Discussions with industry and community stakeholders revealed a lack of collaboration and data sharing across sectors that can lead to inefficient service provision as migrants must interact with multiple agencies to receive holistic support. This demonstrates a need for a coordinated approach to migrant support programs, recognising that career, settlement, and wellbeing outcomes are interlinked.

With these challenges in mind, the recommendations of this report aim to achieve the following goals.

Figure 5.1 Key goals of the recommendations in this report

Improve employment outcomes

Address barriers preventing migrants from fully utilising their time and skills

- Reduce barriers to gainful employment and career progression.
- Counter unconscious bias and discrimination in the workplace and recruitment processes.
- Recognise the valuable skills and experiences of migrants that can be applied in a professional setting.

Improve settlement outcomes

Help migrants and their families settle into South Australia

- Help migrants have their basic needs met so they can search for appropriate employment opportunities that match their skills and qualifications.
- Support migrant families to access schooling and childcare so their parents have the choice to seek employment.

Build networks and community

Connect individuals and organisations to provide a support network for migrants

- Improve collaboration between service providers and coordinate shared strategies to provide support services for migrants.
- Connect migrants to employers to integrate new arrivals into professional networks.
- Connect migrants with community groups to build their network in South Australia.

5.2   Recommendations to address migrant underutilisation

Below are a set of seven broad recommendations that could be taken forward by various organisations in South Australia, including governments, businesses and community groups, to address migrant underutilisation.

5.2.1   Recommendations to improve employment outcomes

Survey findings indicate that professional networking opportunities and skill recognition support are highly desired among migrants in South Australia to reduce underutilisation. With these considerations in mind, this report makes the following recommendations to improve employment outcomes:

1. **Encourage greater access to work and training**: This recommendation is aimed to helping migrants access local work experience to improve their employability in South Australia and build professional networks through vocational or volunteer programs. This should also help develop skills and understanding of local business culture and encourage smaller and medium sized enterprises (SMEs) to give more consideration to hiring migrant workers. This program could take inspiration from existing programs in other states, such as the Queensland Work and Welcome program that matches refugees with organisations suited to their skills for a fixed-term paid internship.

Figure 5.2: Recommendations to address migrant underutilisation

Improve employment outcomes

Address barriers preventing migrants from fully utilising their time and skills

| Encourage greater access to work and training | Increase cultural competency training |

Expand micro-credentialing

Improve settlement outcomes

Help migrants and their families settle into South Australia

| Improve wrap around supports for skilled and family migrants | Expand eligibility for support services to temporary migrants |

Build networks and community

Connect individuals and organisations to provide a support network for migrants

| Develop and promote networking and connection | Expand data sharing and coordination between sectors |

2. **Increase cultural competency training**: Make South Australian workplaces more welcoming and inclusive of migrant workers and target unconscious biases in recruitment processes. Empower businesses to adopt purposeful strategies to welcome migrants into their team and promote greater understanding of diverse life experiences.
3. **Expand micro-credentialling:** Support skill recognition bodies to improve accessibility to recognition of prior learning by recognising individual subjects and skills to reduce repeated coursework. Encourage increased provision of bridging courses, such that when additional study is necessary it is more appropriate to the applicant's skill level.

5.2.2   Recommendations to improve settlement outcomes

Stakeholder consultations reveal how challenges related to employment and settlement are interlinked, with a lack of settlement support having negative consequences on underutilisation. To improve settlement outcomes, this report recommends the following:

4. **Improve wrap-around supports for skilled and family migrants:** Support skilled and family migrants settle into South Australia using similar support structures to those provided to humanitarian migrants, . An example of successful settlement program is the Karen resettlement in Nhill, where local industry organisations and Karen community leaders organised a staged recruitment and resettlement process to welcome Karen refugees into the small agricultural town in regional Victoria (AMES & Deloitte Access Economics, 2015). This initiative helped many refugees settle into the local community and gain work experience, as well as supporting Nhill economically, showing the benefits that can be gained from holistic settlement support.

5. **Expand eligibility for support services to temporary migrants:** Allow temporary migrants access to some of the support available to Australian citizens, . This can help close the gap between migrants and Australian-born workers by allowing them access to the same level of support.

5.2.3 Recommendations to build networks and community

Survey results indicate that many migrants are unaware of support services available to them in South Australia, as discussed in Chapter 4.2.1. South Australian employers are more likely to place importance on local work experience and referrals in recruitment processes as a risk mitigation strategy, which can make it challenging for migrants to enter professional networks. Additionally, the smaller scale of multicultural communities in South Australia compared to eastern states could make it more difficult to form connections.

Discussions with industry and community stakeholders revealed a lack of collaboration and data sharing across sectors that can lead to inefficient service provision as providers lack the information necessary to reach out to new arrivals. To build networks and community, this report recommends the following:

6. **Develop and promote networking**: Ensure migrants are aware of the services available to them. Encourage industry organisations to engage new arrivals and offer targeted support, such as through networking events (particularly in regional South Australia), recruitment services, and professional learning opportunities. Support community and cultural organisations to welcome migrants into their network and provide wrap-around support services.

7. **Expand data sharing**: Reduce burden on new arrivals to repeat their history to every service provider they interact with through a data sharing system. The system should be entered into on an opt-in basis for migrants and should only include relevant data to inform support service provision. Coordinate with service providers to make first contact with new arrivals and outline clearer responsibilities for each sector. Work with job search platforms to develop an online portal for migrants advertise themselves and schedule interviews prior to arrival. Encourage SMEs to use the portal as a source of vetted applicants. Examples of a job matching services targeting migrants is the refugee employment program offered by With You, With Me that offers screening processes and online matching services to connect refugees and employers, or the recruitment programs offered by Community Corporate that train and assess migrants and connect them with employers for job placements. Expanding the scale and scope of similar support services can help migrants gain professional experience and mitigate the onboarding risk for employers.

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Appendix A: Detailed labour market analysis

To better understand the extent of migrant underutilisation in South Australia, this report created estimates of time and qualification based underutilisation, for both migrants (defined as anyone not born in Australia) and Australian born workers. Econometric analysis was also conducted using these estimates, to better understand the relationship between migrant status and underutilisation.

These estimates were created using the Longitudinal Labour Force microdata from the ABS, which draws from the monthly Labour Force Survey. On average since 2009, each monthly survey has approximately 50,000 observations.

This dataset was accessed specifically for this project, and analysis was conducted in the ABS' secure virtual environment, DataLab, which provides individual level data on labour force status, employment characteristics, demographics, geography, and more.

A.1.   Time-based underutilisation

Time-based underutilisation refers to when individuals are working less hours than they are willing and able to work. In this analysis, individuals who are unemployed (defined as persons who are not currently employed but are seeking employment) and individuals who are underemployed (defined as employed persons who worked less hours than usual or people who want to work more hours) are considered "time underutilised".

Key variables that were extracted included:

- Unemployment rates
- Underemployment rates
- Underutilisation rates (calculated as (unemployment + underemployment) / labour force)
- Participation rates

Estimates of time-based underutilisation were available at the national level and for larger states (New South Wales, Victoria, Queensland, South Australia and Western Australia). Estimates for smaller states and territories were not available due to sample size constraints by the ABS.

Note that estimates in this report use ABS weightings (which are used to scale individual responses to the Labour Force Survey up to state and national levels) which were adjusted to reflect the actual number of persons within the sample.

Estimates of key variables were extracted since the late 1980s to **May 2023.** Note that most estimates are presented quarterly, to reflect the availability of underlying data.

Volume-based measures (which estimate underutilisation and other variable in terms of hours worked, rather than persons) were also extracted for the CGE shock development. The total 'potential hours' that could be worked by the labour force was calculated as:

- Potential hours = volume employment + volume unemployment + volume underemployment
- Volume employment = total hours worked in all jobs by employed persons
- Volume unemployment = preferred hours less any hours worked by unemployed persons
- Volume underemployment = preferred hours less any hours worked by underemployed persons.

A.2.   Qualifications-based underutilisation

Qualifications-based underutilisation is more difficult to estimate. This report defines qualifications-based underutilisation for when an individual is working in a position below their qualifications and/or skills or outside their field of study.

These estimates are calculated in two steps:

1. Estimating the 'qualification baseline' for each 4-digit ANZSCO occupation from Census 2021 and Census 2016, and
2. Determining state and territory levels of underutilisation

The qualifications baseline is determined as the qualification level that is most commonly held by Australian born workers aged between 20-34 within any 4-digit ANZSCO occupation per state or territory. This is a proxy for an 'entry level' qualification, which removes effects of tenure from baseline qualification estimates.

Note that qualification levels use the HEAP classification from Census ('level of highest educational attainment'), which splits into the following levels:

- Postgraduate Degree Level
- Graduate Diploma and Graduate Certificate Level
- Bachelor Degree Level
- Advanced Diploma and Diploma Level
- Certificate III & IV Level
- Secondary Education - Years 10 and above
- Certificate I & II Level
- Secondary Education - Years 9 and below
- Not available or not applicable

The most commonly held qualification level per occupation was identified from both Census 2021 and Census 2016 – earlier estimates were unavailable as the HEAP variable was only available for the two most recent Censuses. Note that ABS has different levels of data availability for the two Censuses: for Census 2016, only a 5 per cent detailed microdata sample is available, while the full sample is available for Census 2021.

Determining state and territory levels of underutilisation was completed by comparing individual qualification levels from ABS Longitudinal Labour Force data to the qualification baseline in their occupation.

A person was considered *not* underutilised if they had qualifications which were equivalent to or lower than the baseline. A person was considered underutilised if they had qualifications which were above the baseline level. For example, if the qualifications baseline for occupation X was a Bachelor Degree, then person A with a Postgraduate Degree would be considered underutilised, while person B with Certificate III & IV Level qualifications would not be underutilised.

Note that qualifications data was largely only available in every May release of the labour force data. Therefore, estimates of qualification underutilisation were extracted for May 2014 to May 2023. For the baseline comparisons, individual labour force data from May 2014 to May 2018 inclusive were compared to Census 2016 baseline qualifications, while individual data from May 2019 to May 2023 inclusive were compared to Census 2021 baseline qualifications. Note that where there was a change in the baseline qualification between the two Censuses, a step change was applied between 2016 and 2021 so that the change would be applied gradually.

These estimates of underutilisation are available for migrants and Australian born workers separately, and at the state and territory level (which is then aggregated to get a national estimate). The qualification-underutilised 'share' of each state and territory is calculated as the number of persons who are underutilised divided by the total sample.

A.3. Econometric analysis

Econometric analysis, using the time-based and qualifications-based underutilisation estimates above, was also conducted in DataLab. This analysis aimed to explore the relationship between migrant status and the two estimates of underutilisation.

For both, a standard logit regression model was used. Results are controlled for a few key characteristics which are outlined below. **Note that both econometric analyses were conducted at the national level, not at the South Australian state level.** This was due to small sample sizes at the state level.

Some limitations apply, including:

- Due to sample size constraints, only a limited number of controls were included, and
- Broader labour market trends are not controlled for.

A.3.1. Time-based underutilisation

The below logit regression model was used to calculate the probability of being time underutilised for different cohorts in Australia:

$$Time\ based\ underutilisation = \beta_0 + \beta_1 recent\_migrant + \beta_2 Sex + \beta_3 Age$$

This controls for sex and age of the worker, and explores the impact of being a recent migrant of varying times since arrival compared to an Australian born worker.

Figure A.1: Summary results

Coefficients	Estimate	Standard Error	z value	Pr(>|z|)	
Intercept	-2.18	0.012	-186.278	<2e-16	***
Recent_migrant (arrived in last five years)	0.409	0.014	28.902	<2e-16	***
Recent_migrant (arrived in last 6-10 years)	0.134	0.015	9.051	<2e-16	***
Recent_migrant (arrived in last 11-20 years)	0.034	0.014	2.465	0.0137	*
Australian_born	-0.039	0.01	-3.893	9.92E-05	***
Female	0.286	0.006	51.854	<2e-16	***
Age (35-54)	-0.136	0.008	-17.671	<2e-16	***
Age (55+)	-0.094	0.01	-9.365	<2e-16	***
Age (15-24)	1.16	0.008	143.986	<2e-16	***

Source: Deloitte Access Economics

Note: Base categories were "recent_migrant (arrived 20+ years ago)", "male", "age (25-34)".

Note: Significant codes are 0 '***', 0.001 '**', 0.01 '*' ,0.05 '.' ,0.1 ' '.

A.3.2. Qualifications-based underutilisation

The below logit regression model was used to calculate the probability of being qualifications underutilised for different cohorts in Australia:

$$Qualifications\ underutilisation = \beta_0 + \beta_1 recent\_migrant + \beta_2 Sex + \beta_3 Qualification + \beta_4 Age$$

This controls for sex and age of the worker, qualification level, and explores the impact of being a recent migrant of varying times since arrival compared to an Australian born worker. Note that the categories for recent_migrant are broader for this regression than above (split only into arrived 10+ years ago and arrived within the last 10 years) due to sample sizes.

Figure A.2: Summary results

Coefficients	Estimate	Standard Error	z value	Pr(>|z|)	
(Intercept)	0.286	0.014	19.912	<2e-16	***
Recent_migrant (arrived in last 10 years)	0.362	0.016	22.664	<2e-16	***
Australian born	-0.243	0.011	-22.207	<2e-16	***
Female	0.092	0.009	10.566	<2e-16	***
Below Bachelor degree level	-1.361	0.009	-151.098	<2e-16	***
Age (35-54)	0.13	0.011	11.797	<2e-16	***
Age (55+)	0.087	0.014	6.133	8.64E-10	***
Age (15-24)	-0.676	0.017	-40.77	<2e-16	***

Source: Deloitte Access Economics

Note: Base categories were "recent_migrant (arrived 10+ years ago)", "male", "Bachelor degree or above", "age (25-34)".

Note: Significant codes are 0 '***', 0.001 '**', 0.01 '*' ,0.05 '.' ,0.1 ' '.

Appendix B: Consultations

To build a detailed understanding of the scale, causes and potential solutions to migrant underutilisation in South Australia, Deloitte Access Economics undertook stakeholder engagements with government and community organisation representatives between the 10th-23rd of August 2023. The engagement took the form of a semi-structured interview between Deloitte Access Economics and representatives of the contacted government and community organisations.

Respondents were asked a series of question tailored for each sector, covering topics such as interactions with the migrant community, industry environment, example practices, policy, support services, settlement and recommendations.

B.1.   Key feedback from consultations

A variety of insights and feedback was collected from stakeholders through the consultation process. Figure B.1 presents a summary of key stakeholder findings, covering contextual information, causes of underutilisation, examples of effective strategies, and recommendations.

Figure B.1: Key themes from stakeholder consultations

BUSINESS STUCTURE
- SA businesses that do not have international connections are less willing to take on migrants, reasoning that it is an unknown situation, it is costly, it results in time delays, etc.
- From the employer's perspective, there are **concerns surrounding a lack of local knowledge and experience, perceived cultural differences in soft skills, a lack of people who can 'vouch' for them locally and 'flight-risk' concerns.**

CAREER PROGRESSION
- An **unclear pathway to permanent residency could impact job progression**, as temporary migrants are unable to secure certain ongoing career opportunities.
- Restrictions on the length of contracts that can be offered to temporary migrants in corporate roles can be a disadvantage for long term career growth and impact ability to get a mortgage.

RECRUITMENT
- Local experience and finding work through networking are more prominent in the SA labour market.
- Recruiters have difficulty finding work for overseas migrants in SA if they did not have local work experience and could not provide a local reference.

VISA COMPLEXITY
- If an employer does not recognise a visa, they may not take on the time and effort required to research visa categories and instead decline the applicant.
- There is apprehension among employers in hiring workers on the 485 visa, despite having full work rights.

SETTLEMENT

- There is less information on the challenges of settling in SA relative to the rest of Australia. This **can lead to disillusionment when reality is more challenging than expectations set up by skill attraction advertising**.

- The **lack of public transport options in regional SA can make settling there unviable**. Having a car is often assumed by employers. For migrants without a licence, navigating that process is challenging, time consuming and costly.

- Many stakeholders identified **gaps in support for spouses and family migrants**. There is very little employment and settlement support for migrants entering through the family stream as there is an expectation that their relatives will care for them. The lack of support for childcare costs can also make it unfeasible for partners to find work.

- **SA doesn't have sizeable existing multicultural communities**, meaning migrants often don't have the right network or community to tap into, to then access the right employers.

- Identified **accommodation as a major challenge in SA**, with the expense often forcing people to take the first job they can get. Anecdotally knew of overseas workers who rejected SA employment because of housing expenses.

- SA is an attractive location but is **not well advertised**

- Many migrants experience a "**numbness effect**" from the stress and change in the migration process, and there is a lack of understanding of and support for this transitionary period.

MARKET MISMATCH

- Stakeholders criticised the current national migration program as mostly bringing in **workers with generalised skills that aren't well suited to industry needs**. In the first years of the pandemic businesses were concerned with not having enough applicants in general, whereas now that is shifting to people with the right skills not applying.

- There appears to be **barriers in connecting labour demand and supply in engineering**. There are local migrant engineers and demand for them, but migrant applicants struggle to get past the screening process.

- Felt the **SA government has done well in consulting with industry** in this regard, but they don't have all levers available as much is dictated at the federal level.

EMPLOYMENT

- There appears to be a "**glass ceiling**" for migrants in SA. Noted that in eastern states it is not uncommon to see migrants in higher position whereas it's rare in SA, which can make career progression more challenging.

- Lack of local experience, security clearance and language difficulties continue to pose a barrier to employment. Employers note some skilled migrants can lack soft skills due to a **heightened emphasis on technical skills** in the migration process.

UNCONCIOUS BIAS

- There is a sense that it is **more difficult for migrants to feel accepted in SA**. Employers appear to be more wary of outsiders. Wariness of outsiders can be **exaggerated in the region**s, where it can be difficult to enter a community.

- Despite appetite to tap into this skill base**, AI and HR processes in online applications can perpetuate unconscious bias** by filtering out people without local experience.

- **Willingness to hire migrants varied greatly between industry**, with industries such as construction lagging.

- A **lack of understanding of Australian culture** can pose a barrier for migrants, particularly among workers from high power distance cultures who may not be used to interacting with a boss casually.
- Some stakeholders noted that **despite some upfront challenges**, the migrant workers they interact with have **higher retention** and **low absentee rates** in the long term.

- Ethnic community groups provide a lot of **free support services in good faith** despite receiving little or no formal funding.
- There is **little awareness** of expos and networking events, among other support services. The information is available but **complex and difficult to navigate.**
- There is a lack of clarity around who has the **responsibility to settle student and state sponsored migrants**.
- The **first 24 months of arrival is a critical period for policy interventions**, as employers are more reluctant to hire individuals that have not worked in their field for over 2 years.

B.2.   List of stakeholders engaged

Deloitte Access Economics engaged with 16 organisations total to gain feedback from community, government and industry sectors. Table B.1 presents a list of individuals interviewed during the consultation process.

Table B.1: List of stakeholders consulted for this research

Sector	Stakeholder organisation	Representatives interviewed
Community	AMES Australia	• Michael Schultz (Senior Manager, Settlement Services) • Blur Abdulla (Operations and Practice Manager)
Community	Australian Refugee Association Inc.	• Bryan Hughes (Employment and Skills Development Coordinator • Goeff Revill (Employment case worker)
Community	Community Corporate	• Carmen Garcia (Chief Executive Officer)
Community	Community Language Schools SA	• Brett Shuttleworth (Chief Executive Officer)
Community	HOST International	• Julie Fyfe (Director) • Jogen Gazmere (Capacity Building Coach)
Community	Multicultural Aged Care	• Maria Lian Li Johns (Chief Executive Officer) • Agnieszka Chudecka (PICAC Alliance Secretariat Lead) • Thuc Duyen Le (Project Officer) • Gamal Charmy (Operations Officer) • Vandana Rathore (Program Coordinator) • Aash Sharma (Project Officer)
Community	Multicultural Communities Council of South Australia	• Helena Kyriazopoulos (Chief Executive Officer) • Rajendra Pandey (Committee Member)

		• Vicky Arachi (Manager, Multicultural Community Connection Program)
Community	Sonder	• Michael Nicholls (Career Coach) • Tania Manser (Executive Manager, Community Services)
Community	StudyAdelaide	• Jane Johnston (Chief Executive Officer)
Community	Welcoming Australia	• Aleem Ali (Chief Executive Officer)
Government	Department for Education	• Matthew McPeake (Senior Return to Work Consultant)
Government	Department of Health and Wellbeing	• Judith Formston (Deputy Chief Executive Officer) • Scott Boehm (Chief Executive Officer) • Kyra Maher (Director, Workforce Strategy) • Kelly White (Manager, Workforce Projects)
Government	Department of Industry, Innovation and Science	• Louisa Newstead (Director, Strategic Policy and Migration) • Stuart Fisher (Manager, Migration Policy)
Government	Department of the Premier and Cabinet	• Alison Lloyd-Wright (Deputy Chief Executive • Kayla Johnson (Director, Population Strategy)
Industry	Engineers Australia	• Shahin Dashti (Deputy Chair, Biomedical College) • Mansoor Janjua (Deputy Chair, Diversity and Inclusion) • Leah Tatterstall (Engagement Manager) • Susan Pearce (Volunteer)
Industry	Business SA	• Yarik Turianskyi (Senior Policy Advisor)

Appendix C: Survey

The survey received 464 responses in total, of which 335 were complete and 129 were partially complete.

C.1.   Survey structure

The survey consisted of 49 questions in total, split into the following sections:

Figure C.1: Survey sections

Section 1: Personal details

Collects **demographic information** to gain more insight into how **underutilisation and service access varies by cohort**. Features of interest include age, gender, visa type, country of birth, year of arrival in South Australia and qualifications gained overseas and in Australia, among others.

Section 2: Employment details

This section also gains insight into **difficulties in finding work** and why respondents may not be using their qualifications in their job. This section closes by asking whether respondents applied to have their qualifications/experience recognised, and what barriers prevented them from applying and whether they required additional assessments.

Section 3: Skill recognition

Asks detailed questions on migrants' **experiences in the skill recognition process**, including how long the process took, if they accessed assistance, why they thought they were successful/unsuccessful in having their qualifications recognised. This section is **only asked to respondents who applied to have their skills assessed.**

Section 4: Support and policy

Gains insight into **what support services migrants access** in South Australia and whether they were aware of services they did not access. Asks respondents what **barriers prevented them from accessing support** they were aware of but did not access. This section also aims to uncover respondents' **preference towards different support services**, by asking them to rank services by impact.

The survey is structured such that many questions are displayed dependent on the respondent's previous answers to allow for follow up questions and skipping questions that are not relevant. Additionally, many questions are optional to avoid respondents getting stuck on questions they do not know how to answer. These factors combined result in the response rate varying for each question.

A series of screening questions were placed at the beginning of the survey to ensure the sample only contains adult migrants in South Australia that are working age or retired with prior work experience in South Australia.

C.2. Demographics

C.2.1. Gender and age

The survey sample contained close to even gender representation, with slightly more female respondents at 54 per cent. There is representation across a variety of age ranges, with most respondents being between 25 and 44 years old.

Chart C.1: Gender and age of respondents
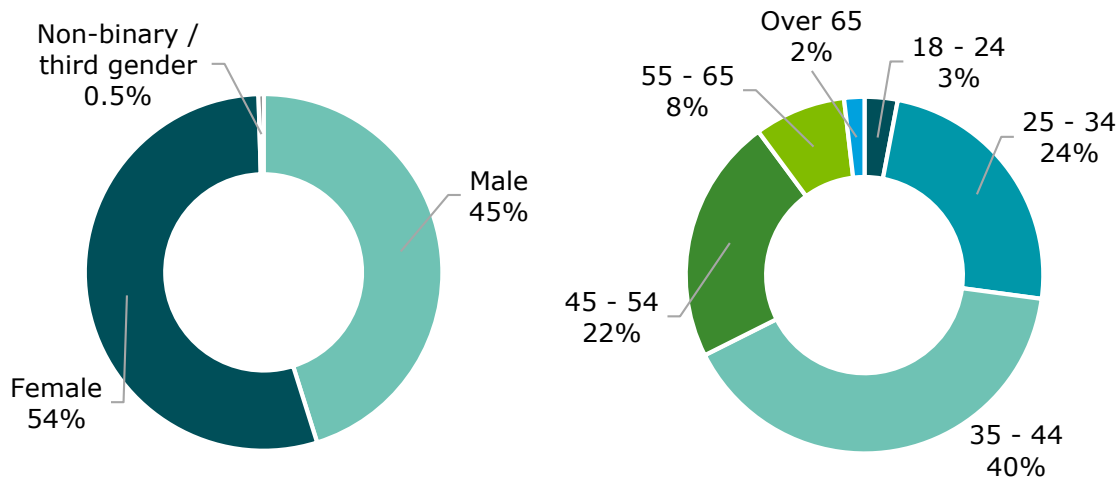
Source: Deloitte Access Economics survey, 2023
Question: *"What gender do you identify as?"* (n=435)
Question: *"How old are you?"* (n=4357)
Note: Excludes "prefer not to say" responses.

C.2.2. Visas

The survey sample represented migrants across visa categories, including:

- 64 per cent skilled visa holders (includes student (temporary), skilled (temporary) and skilled (permanent) visa types)
- 12 per cent family visa holders (includes family (temporary) and family (permanent) visa types)
- 8 per cent humanitarian visa holders (includes humanitarian (temporary) and humanitarian (permanent) visa types).

76 per cent of respondents were primary visa holders and 21 per cent were secondary visa holders.

Chart C.2: Visa held by respondents, at arrival and current
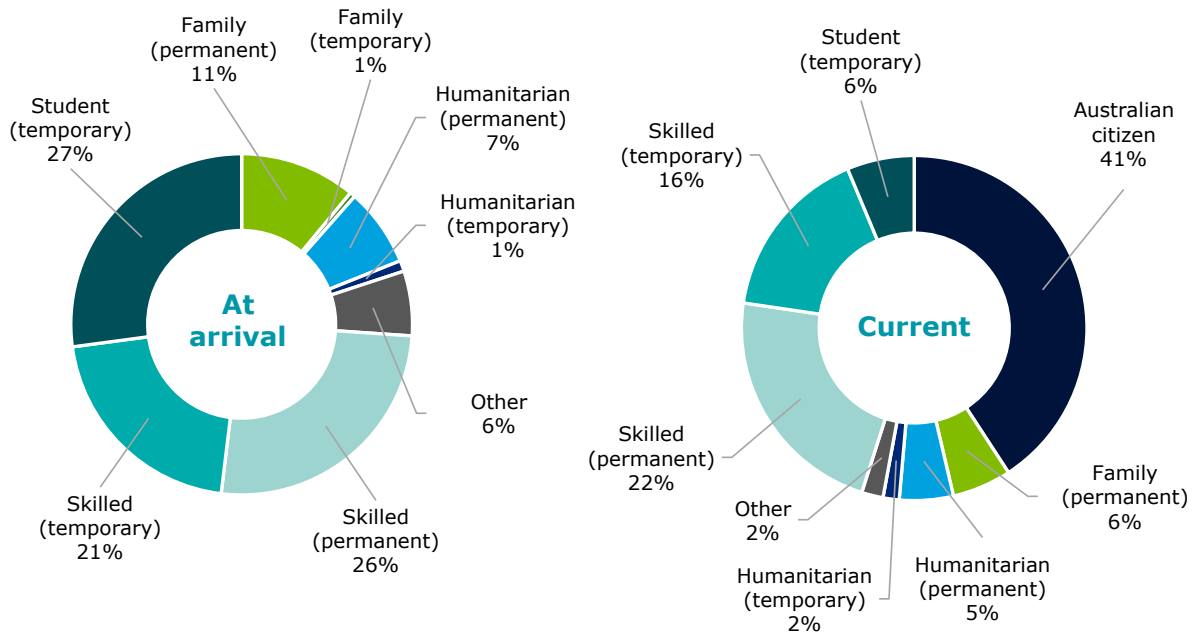
C.2.3. Country of birth

The survey received responses from individuals born in 67 different countries. India was the most commonly cited country of birth among respondents, comprising 29 per cent of the sample.

Chart C.3: Respondents' country of birth, top 10 most commonly cited
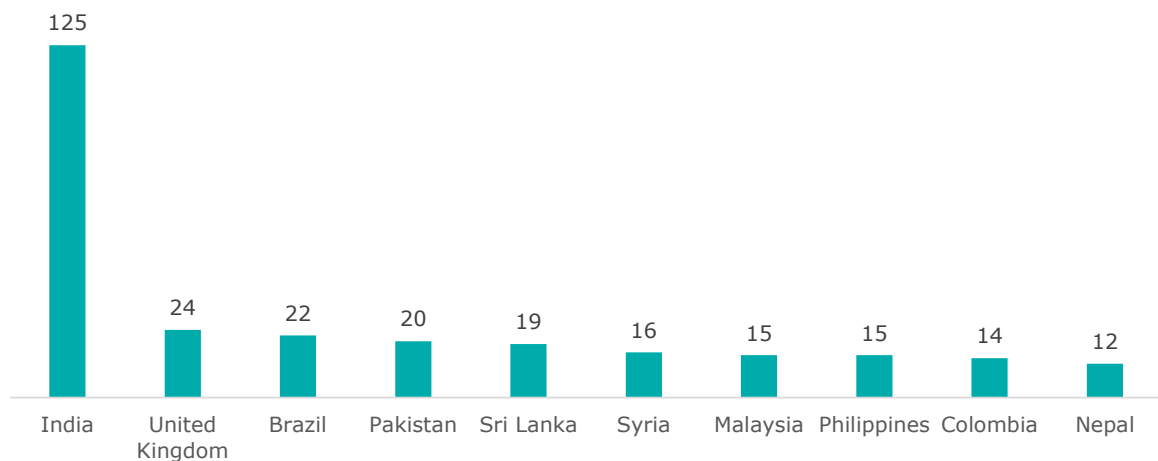
10 per cent of respondents were born in primary English-speaking countries, including New Zealand, United States, Canada, United Kingdom, Ireland, South Africa.

C.2.4. Education

Half of respondents held a postgraduate degree and a further third held an undergraduate degree before arriving in Australia, representing an overall highly educated sample.

Chart C.4: Highest qualification held among respondents before arrival
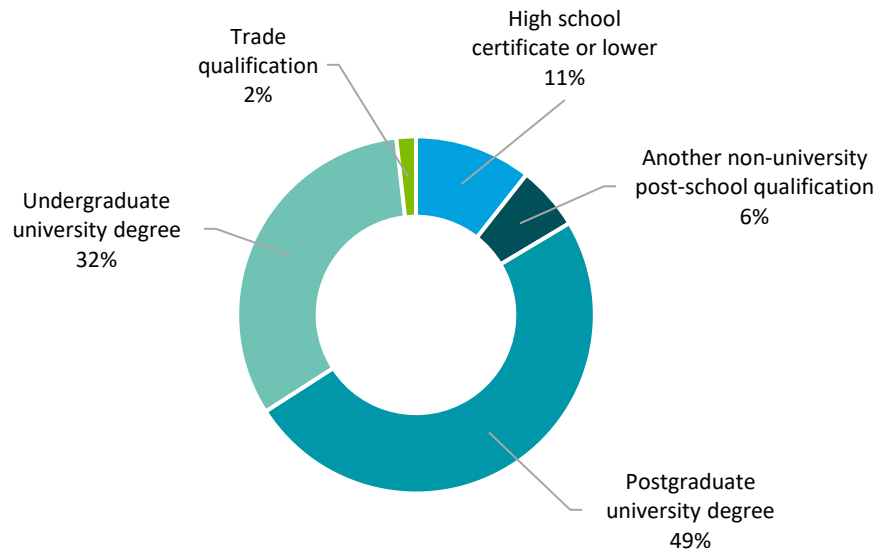
Source: Deloitte Access Economics survey, 2023
Question: *"Before you came to Australia, what was your highest qualification?"* (n=396)

Appendix D: CGE Modelling

D.1.   Introduction

- A change in any one part of the economy will have impacts that reverberate throughout the entire economy. For example, the building of a new mine will involve increased economic activity in the mining industry but it will also have a range of impacts in other parts of the economy:

- There will be effects up and down the supply chain. As a sector expands it will draw in an increased volume of intermediate inputs from related sectors resulting in an increased demand for their output and an expansion in production. If the expansion in the sector is demand driven (especially foreign demand) then the price of its output will increase putting pressure on those who use it as an intermediate input meaning their production may contract.

- The expansion in both the sector directly affected and those which supply it will result in an increased competition in factor markets (like those for labour and capital). Factors will move between industries in response to changes in demand and the price (wage) they can earn. This will result in the 'crowding out' of some activity in competing sectors as they lose workers and capital.

- At an aggregate level (across the whole economy) there may be an increase in demand for labour such that it induces increased labour supply (the encouraged worker effect) or an inflow of capital as relative rates of return shift. This induced factor supply enables an expansion of the economy, meaning more income and consumption which can stimulate sectors oriented toward this.

- If the expanding sector is export-oriented, then the expansion of its production which resulted in increased export income and could be associated with a positive shift in the terms of trade. However, this positive effect – in conjunction with an inflow of investment – would increase demand for local currency, causing real exchange rate appreciation with consequences for other exporting industries.

- Computable General Equilibrium (CGE) models, are the best-practice method available for examining the impacts of a change in one part of the economy on the broader economy as they can capture the multitude of impacts highlighted above. Not only can CGE models account for these effects, the results from the models can be used to build a narrative which stakeholders respect – because it is based on accepted economic theory and the latest data – and one which is easily understood.

D.2.   DAE-RGEM

- The Deloitte Access Economics regional general equilibrium model (DAE-RGEM) belongs to the class of models known as recursive dynamic regional CGE models.1 Other examples of models in this class are the Global Trade and Analysis Project Dynamic (GDyn) model, the Victoria University Regional Model (VURM) and The Enormous Regional Model (TERM).

- Like GDyn, DAE-RGEM is a global model, able to simulate the impact of changes in any of the 140 countries in the GTAP database (including Australia) onto each of the 140 countries. The ability to incorporate the flow-on impacts of changes that may occur in rest of the world is a key feature of global models that is not available in single-country models, such as the VURM Model or TERM.

- However, like those models, DAE-RGEM is a bottom-up model of regional Australia. So DAE-RGEM is able to project the impacts on different States and sub-State regions of Australia of changes occurring in any region of Australia or in rest of the world within a single, robust, integrated economic framework.

- This model projects changes in macroeconomic aggregates such as GDP, employment, export volumes, investment and private consumption. At the sectoral level, detailed results such as output, exports, imports by commodity and employment by industry are also produced.

- The following diagram gives a stylised representation of DAE-RGEM, specifically a system of interconnected markets with appropriate specifications of demand, supply and the market clearing conditions determine the equilibrium prices and quantity produced, consumed and traded.

Figure D.1: A stylised representation of DAE-RGEM
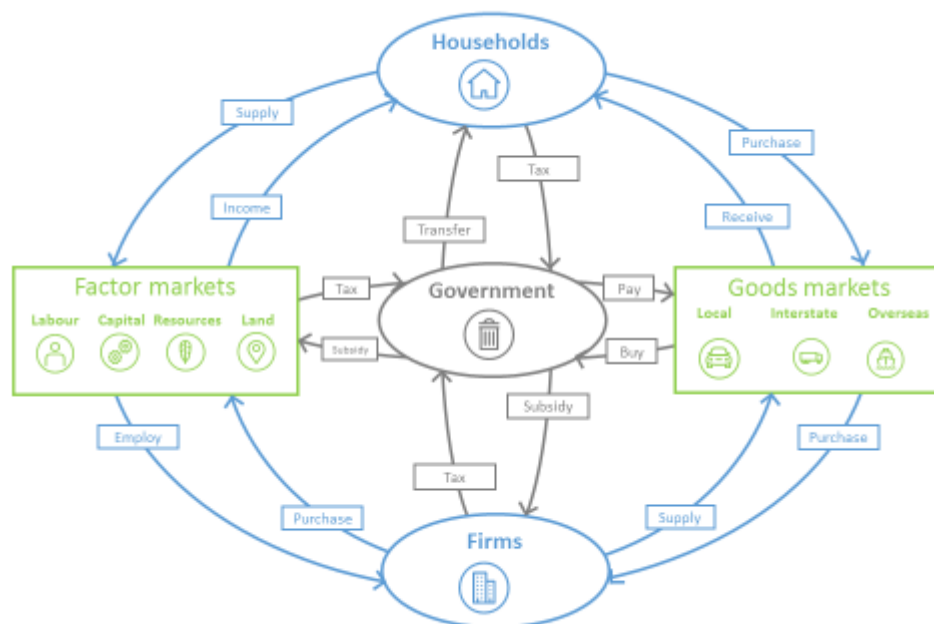
The model rests on the following key assumptions:

- All markets are competitive and all agents are price takers
- All markets clear, regardless of the size of the shock, within the year.
- It takes one year to build the capital stock from investment and investors take future prices to be the same as present ones as they cannot see the future perfectly
- Supply of land and skills are exogenous. In the business as usual case, supply of natural resource adjusts to keep its price unchanged; productivity of land adjusts to keep the land rental constant at the base year level.
- All factors sluggishly move across sectors. Land moves within agricultural sectors; natural resource is specific to the resource using sector. Labour and capital move imperfectly across sectors in response to the differences in factor returns. Inter-sectoral factor movement is controlled by overall return maximizing behaviour subject to a CET function. By raising the size of the elasticity of transformation to a large number we can mimic the perfect mobility of a factor across sectors and by setting the number close to zero we can make the factor sector specific. This formulation allows the model to acknowledge the sector specificity of part of the capital stock used by each sector and also the sector specific skills acquired by labour while remaining in the industry for a long time. Any movement of such labour to another sector will mean a reduction in the efficiency of labour as a part of the skills embodied will not be used in the new industry of employment.

DAE-RGEM is based on a substantial body of accepted microeconomic theory. Key features of the model are:

- The model contains a 'regional household' that receives all income from factor ownerships (labour, capital, land and natural resources), tax revenues and net income from foreign asset holdings. In other words, the regional household receives the gross national income (GNI) as its income.
- The regional household allocates its income across private consumption, government consumption and savings so as to maximise a Cobb-Douglas utility function. This optimisation process determines national savings, private and government consumption expenditure levels.
- Given the budget levels, household demand for a source-generic composite goods are determined by minimising a CDE (Constant Differences of Elasticities) expenditure function. For

most regions, households can source consumption goods only from domestic and foreign sources. In the Australian regions, however, households can also source goods from interstate. In all cases, the choice of sources of each commodity is determined by minimising the cost using a CRESH (Constant Ratios of Elasticities Substitution, Homothetic) utility function defined over the sources of the commodity (using the Armington assumption).

- Government demand for source-generic composite goods, and goods from different sources (domestic, imported and interstate), is determined by maximising utility via Cobb-Douglas utility functions in two stages.

- All savings generated in each region are used to purchase bonds from the global market whose price movements reflect movements in the price of creating capital across all regions.

- Financial investments across the world follow higher rates of return with some allowance for country specific risk differences, captured by the differences in rates of return in the base year data. A conceptual global financial market (or a global bank) facilitates the sale of the bond and finance investments in all countries/regions. The global saving-investment market is cleared by a flexible interest rate.

- Once aggregate investment level is determined in each region, the demand for the capital good is met by a dedicated regional capital goods sector that constructs capital goods by combining intermediate inputs in fixed proportions, and minimises costs by choosing between domestic, imported and interstate sources for these intermediate inputs subject to a CRESH aggregation function.

- Producers supply goods by combining aggregate intermediate inputs and primary factors in fixed proportions (the Leontief assumption). Source-generic composite intermediate inputs are also combined in fixed proportions (or with a very small elasticity of substitution under a CES function), whereas individual primary factors are chosen to minimise the total primary factor input costs subject to a CES (production) aggregating function.

Limitation of our work

Deloitte.