Job Openings and Replacement Rates by Occupation

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Introduction

The National Skills Commission (NSC) produces employment projections to provide a guide to the likely future direction of the jobs market over the next five years. Each year these projections are updated to reflect emerging trends and developments, with the latest available data for the five years to November 2026. The NSC's employment projections consider the net change in employment over the five-year projection period. Importantly, net change in employment is considerably lower than the number of jobs that will become available over the five-year projection period. To illustrate, consider an example where an employer is recruiting to replace a previous employee who retired. This would result in one position made available and filled but net employment growth would be zero.

Indeed, even if an occupation is projected to decline in employment, or, records a fall in employment over particular time period, many job vacancies will still have existed over the corresponding period. For instance, from February 2020 (pre-COVID measure) to May 2022 (latest available data), employment in Skill Level 5 occupations has fallen by 117,900 (or 5.7%). Since March 2020, according to the National Skill Commission's (NSC) Internet Vacancy Index (IVI), there have been almost 700,000 job advertisements for Skill Level 5 positions.

In order to quantify the number of opportunities available in the labour market for a given occupation, the NSC uses data from the ABS Participation, Job Search and Labour Mobility (PJSM) supplementary survey to create occupational replacement rates[1], which estimate the share of employment in an occupation that will be replaced within a given year.[2] Importantly, because this analysis reflects the gross flows into and out of an occupation, it excludes any movement of workers between employers within the same occupation (such as a chef leaving their job one restaurant to work at another restaurant).

These estimated replacement rates can provide insight into the labour market in a variety of ways, which are highlighted in the analysis below. To interpret the occupational replacement rates presented in this analysis, consider an example of an occupation with 1,000 employees in a given year. A replacement rate of 25% would indicate that over that year, 250 employees had left their jobs in the occupation and were replaced by another employee, meaning that 250 job openings had become available to people seeking employment in that occupation.

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[1] *Replacement rates are calculated by dividing the number of gross flows either into an occupation (when net employment growth is greater than 0) or out of an occupation (when net employment growth is less than 0) over the year by the number of people that remained in the occupation over the period. They are calculated at the ANZSCO 3 digit level and applied down to 4 digit occupations.*
[2] *The data used to calculate the presented replacement rates is derived from the February 2022 PJSM and refers to the year ending February 2022. The nature of PJSM data means that the occupational replacement rates calculated by the NSC reflect historic flows of data between occupations and are therefore backward-looking. 2022 PJSM data may be impacted by restrictions due to COVID-19. Some occupations may have been more adversely impacted by these factors than others. Analyses should be interpreted accordingly.*

Replacement rates by occupation

Table 1 shows the occupations at the Australia and New Zealand Standard Classification of Occupations (ANZSCO) 3-digit level with the 10 highest replacement rates according to the February 2022 ABS PJSM survey. Hospitality Workers recorded the highest replacement rate (27.5%), followed by Call or Contact Centre Information Clerks (27.0%) and Checkout Operators and Office Cashiers (23.9%).

Table 1: Occupations with the highest replacement rates, February 2022

Occupation	Skill levels	Replacement Rate
Hospitality Workers	5,4,2	27.5%
Call or Contact Centre Information Clerks	4,3	27.0%
Checkout Operators and Office Cashiers	5	23.9%
Miscellaneous Clerical and Administrative Workers	4,3,2	22.4%
Miscellaneous Factory Process Workers	5,4	21.4%
Food Preparation Assistants	5	21.2%
Miscellaneous Sales Support Workers	5,4,3	21.1%
Storepersons	4	19.6%
Prison and Security Officers	5,4,3	19.6%
Delivery Drivers	4	19.3%

Source: ABS, *Participation, Job Search and Mobility,* February 2022; NSC calculations

None of the 10 occupations with the highest replacement rates contain a detailed occupation of Skill Level 1 (commensurate with a bachelor's degree or higher), demonstrating that jobs with high turnover tend to be lower skill level jobs. This suggests that recruitment in these occupations is more likely to be due to replacement, rather than expansion, compared with higher skilled occupations. A number of these occupations also reflect sectors of the labour market, such as hospitality, that were significantly affected by extended lockdowns and associated restrictions due to COVID-19.

Indeed, data from the NSCs Recruitment Experiences and Outlook Survey (REOS) show that recruitment for lower skilled positions is more likely to be to replace staff compared with recruitment for higher skilled positions. Some 65% of employers recruiting for lower skilled positions recruited only to replace staff, compared with 59% for higher skilled positions (see Figure 1).

**Figure 1: Reason for recruitment by skill level, 2022**
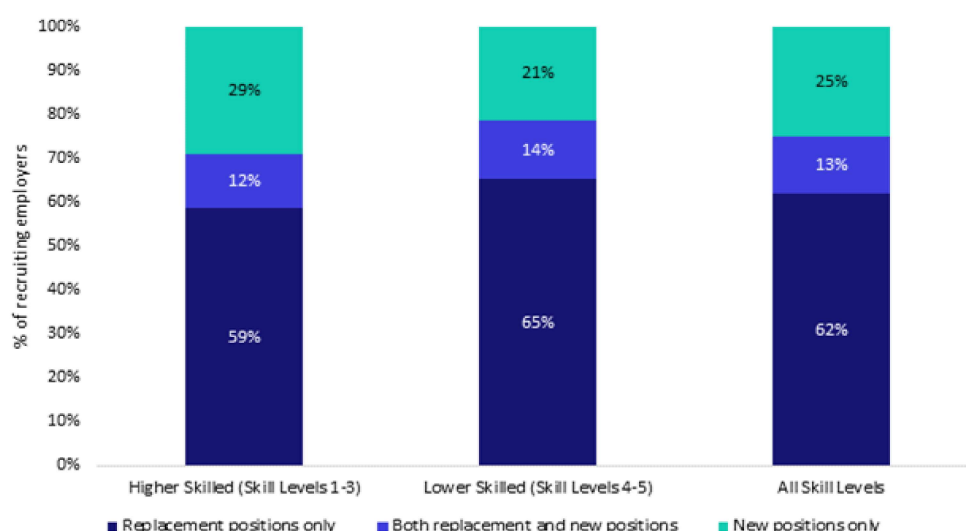
Source: NSC, *Recruitment Experiences and Outlook Survey*, 2022.

Replacement rates and the Internet Vacancy Index

Estimated replacement rates also help to provide additional context to the number of job advertisements recorded in the IVI. For instance, Figure 2 outlines the ten occupations at the ANZSCO 3-digit level that recorded the highest number of online job advertisements in June 2022, and the extent of occupational turnover in each occupation (classified as low, medium or high[3]). As shown in Figure 2, while certain occupations may have a similar number of job advertisements, the degree of turnover within these occupations can vary significantly.

For example, of the ten 3-digit occupations with the highest number of job advertisements in June 2022, eight had high or medium replacement rates, indicating that many job advertisements in these occupations are likely to be due to recruitment to replace staff. On the other hand, the two remaining occupations in the top 10 job advertisements - Business and Systems Analysts, and Programmers; and Engineering Professionals - had low replacement rates. The high number of job advertisements in June 2022 is therefore more likely to be due to an expansion in employment in these occupations.

Figure 2: Occupations with the highest job advertisements in June 2022 by replacement rate
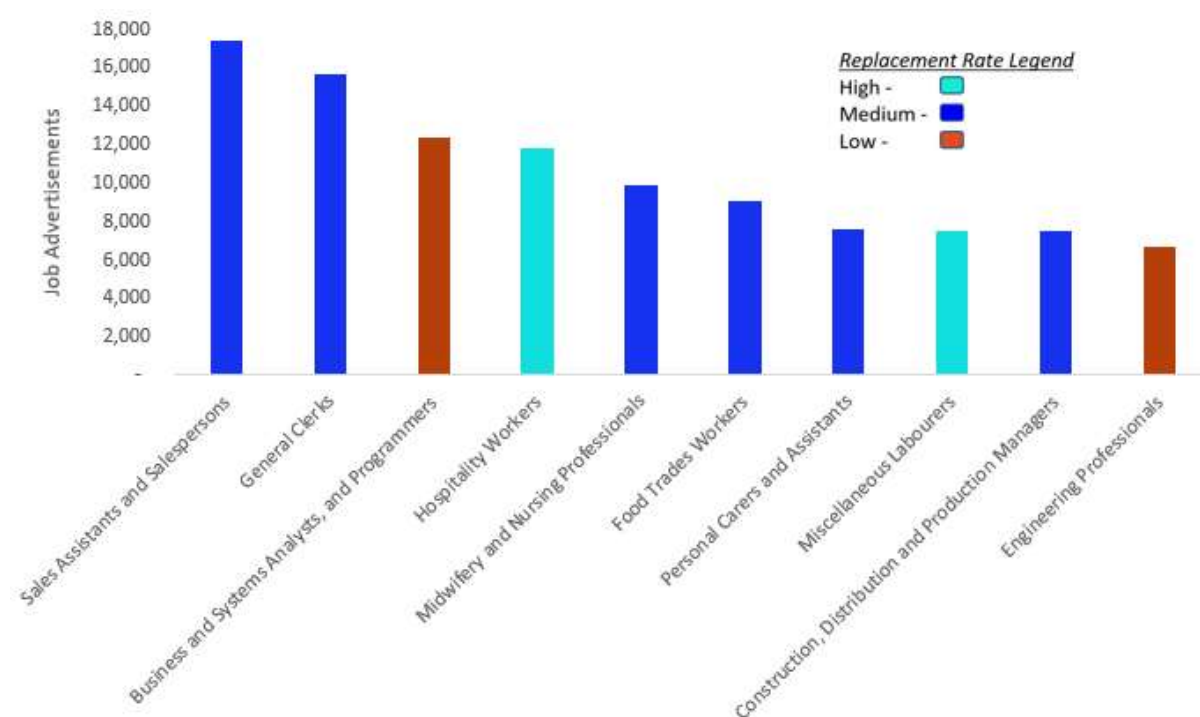
Source: NSC, *Internet Vacancy Index,* June 2022, *seasonally adjusted data;* ABS, *Participation, Job Search and Mobility,* February 2022.

Indeed, comparing recent employment growth for these occupations further outlines the difference in recruitment to replace staff compared with recruitment to expand employment. As shown in Table 2, for the 3-digit occupations in the top 10 for job advertisements, those with high turnover recorded a significant decrease in employment, both over the last year (down by 33,100 or 7.5%) and since the onset of Covid-19 in the February quarter 2020 (down by 53,000 or 11.4%). On the other hand, the two occupations with low turnover (Business and Systems Analysts, and Programmers; and Engineering

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[3] *Replacement rates have been classed as "High", "Medium", or "Low" based on how far above or below the mean occupational replacement rate they are. All replacement rates 0.75 or more standard deviations below the mean are classed as 'Low', all rates 0.75 or more standard deviations higher than the mean 'High' and the remainder classed as 'Medium'.*

Professionals) recorded an increase in employment of 24,100 (or 6.3%) over the year, and by 53,500 (or 15.2%) since February 2020.

Table 2: Recent employment growth for occupations in the top 10 job advertisements in June 2022

Occupation Replacement Rate	Employed May-22 ('000)	Annual change		Change since Feb-20	
		('000)	%	('000)	%
High	410.2	-33.1	-7.5	-53.0	-11.4
Medium	2314.4	59.9	2.7	121.6	5.5
Low	405.7	24.1	6.3	53.5	15.2

Source: ABS, *Labour Force, Australia, Detailed,* May 2022; data are seasonally adjusted by the NSC.

Job Openings by Occupation

Replacement rate data can also be combined with employment growth data to estimate the number of job openings in an occupation. This can be particularly useful when combined with the NSC's employment projections as it provides an estimate of the number of job openings by occupation over the next five years[4].

Table 3 shows the occupations (at the ANZSCO 4-digit level) projected to record the highest number of job openings and the highest projected employment growth over the five years to November 2026. Figure 3 shows projected job openings and projected employment growth, along with the skill level and overall employment size for the occupations in Table 2.

Table 3: Top 20 occupations with the highest projected job openings and Top 20 occupations with the highest projected employment growth, five years to November 2026

Top 20 Occupations for Projected Job Openings to 2026 ('000)		Top 20 Occupations for Projected Employment Growth to 2026 ('000)	
Sales Assistants (General)	433.1	Aged and Disabled Carers	74.9
Aged and Disabled Carers	269.9	Software and Applications Programmers	42.2
General Clerks	249.7	Registered Nurses	40.4
Waiters	195.3	General Clerks	35.7
Checkout Operators and Office Cashiers	188.1	Database and Systems Administrators, and ICT Security Specialists	29.1
Storepersons	175.5	Management and Organisation Analysts	28.2
Registered Nurses	167.5	Solicitors	20.4
Receptionists	151.5	Human Resource Managers	19.3
Kitchenhands	150.0	Welfare Support Workers	19.1
Commercial Cleaners	136.5	Accountants	17.9
Contract, Program and Project Administrators	136.1	Education Aides	17.6
Bar Attendants and Baristas	129.4	Café and Restaurant Managers	17.5
Retail Managers	122.0	Waiters	15.0
Advertising, Public Relations and Sales Managers	116.8	Electricians	14.6
Child Carers	114.9	ICT Managers	14.4
Management and Organisation Analysts	110.9	ICT Support Technicians	14.0
Office Managers	109.2	Graphic and Web Designers, and Illustrators	13.9
Truck Drivers	104.6	Other Information and Organisation Professionals	13.3
Software and Applications Programmers	99.9	Delivery Drivers	12.2
Purchasing and Supply Logistics Clerks	97.5	Commercial Cleaners	11.9

Source: NSC, *Employment Projections, five years to November 2026;* ABS*, Participation, Job Search and Mobility,* February 2022.

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[4] *Job openings are the sum of the projected 5-year employment growth from the NSC's employment projections and the projected job openings over the next five years through accumulated turnover. The projected job openings through accumulated turnover over the next five years are calculated by multiplying overall employment projected for a given year for an occupation by the replacement rate for each year over the five-year period.*

It is notable that just seven (Aged and Disabled Carers, General Clerks, Waiters, Registered Nurses, Commercial Cleaners, Management and Organisation Analysts, and Software and Applications Programmers) of the 20 occupations with the highest projected employment growth over the five years to November 2026 are also in the top 20 projected job openings over the period.

Figure 3 (overleaf) also highlights the differences in skill level between the high projected employment growth and high projected job openings occupations. Of the 20 detailed occupations with the highest projected job openings, fourteen are either Skill Level 4 (commensurate with a Certificate Level II or III) or Skill Level 5 (commensurate with Certificate Level I or secondary education), with just four at Skill Level 1 (commensurate with a Bachelors Degree or higher). On the other hand, of the 20 detailed occupations with the highest projected employment growth, ten are Skill Level 1 occupations.

Indeed, while the majority (52.6%) of employment growth over the five years to November 2026 is projected to be in Skill Level 1 occupations, Skill Level 4 occupations are projected to record more job openings over the period (2.82 million compared with 2.77 million for Skill Level 1). In addition, despite projected employment growth of just 97,700 for Skill Level 5 occupations over the five years to November 2026, there are projected to be over 1.75 million job openings for Skill Level 5 positions over the period.

This outlines the extent to which, for many occupations, job openings are driven by replacement rather than an expansion in employment. As a result, significant job opportunities will be available even in occupations that are projected to record soft or negative employment growth over the next five years, particularly at the lower skill levels.

Figure 3: Projected job openings and employment growth over five years to November 2026 for occupations in the top 20 of either indicator.
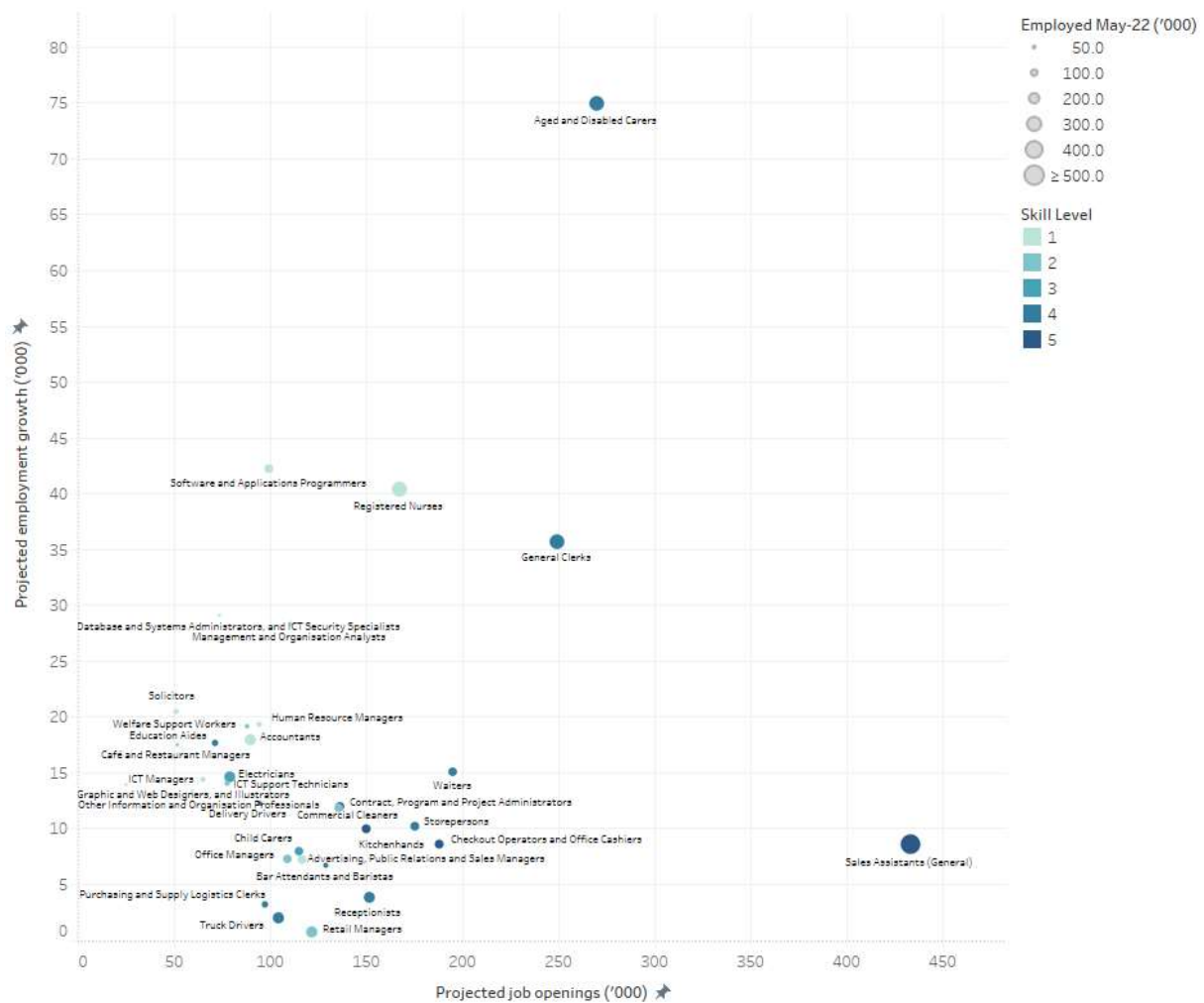
Source: NSC, *Employment Projections, five years to November 2026;* ABS, *Participation, Job Search and Mobility,* February 2022*;* employment size from ABS*, Labour Force, Australia, Detailed,* February 2022, data are seasonally adjusted by the NSC.