



SKILL SHORTAGE RESEARCH METHODOLOGY

1. PURPOSE

The Department of Employment undertakes skill shortage research on an ongoing basis. The research is part of a programme which began more than three decades ago. The methodology is applied consistently across occupations and locations to provide information about employers' ability to recruit the skilled workers they need.

- It does not identify skill gaps in an employer's existing workforce.

The research aims to identify [shortages](#) in the Australian labour market in skilled occupations where long lead times for training mean that shortages cannot be quickly addressed. The skill shortage research meets a need for information about skill needs on a national and state/territory basis to underpin policy, planning and resource allocation.

- Results are considered in a range of education, training, employment and migration policies and programmes, and are publicly available at employment.gov.au/skill-shortages.

A key element of the skill shortage research is the [Survey of Employers who have Recently Advertised](#) (SERA). The SERA collects two kinds of information about employers' experiences recruiting skilled workers.

- The first is qualitative information from discussions with employers and recruitment professionals which enables the identification of key labour market issues for each occupation.
- The second is quantifiable data about employers' recruitment experiences, including the proportion of vacancies filled and the number of applicants, qualified applicants and suitable applicants. This provides the basis for historical comparisons and analysis across states/territories and occupations.

The methodology is cost effective and targeted and, although it is not based on a statistically valid sample and does not enable the compilation of quantitative estimates of skill shortages, the Australian Bureau of Statistics (ABS) found it was appropriate for its purpose¹.

The skill shortage research is undertaken for selected occupations defined in the Australian and New Zealand Standard Classification of Occupations (ANZSCO), which is also used by the ABS for reporting of occupational statistics. The research is generally conducted at the six digit level of ANZSCO, although for some labour markets, six digit codes are combined.

The research focuses on relatively large occupations (usually those with national employment of at least 1500 as at the 2011 Census) which are skilled (that is, they generally require at least three years of post-school education and training). Most are professions (ANZSCO Major Group 2) and technicians and trades (ANZSCO Major Group 3), although a small number of other occupations are also included.

While occupational coverage varies from year to year, there is a core of around 80 occupations which have been assessed annually in recent years.

¹ In 2017, the methodology was approved by the Australian Government Statistical Clearing House Approval Number: 01921-- 04

The research provides an indication of employers' experience recruiting skilled workers at a particular time. The labour market can change quickly and employers' needs may be very specific in terms of the breadth and depth of skills and experience. Shortages are typically for specialised and experienced workers, and can co-exist with relatively high unemployment overall or within the occupation. A rating of shortage does not mean that every job seeker in that occupation will readily find employment, even if they have relevant skills and experience.

2. SURVEY OF EMPLOYERS WHO HAVE RECENTLY ADVERTISED (SERA)

The SERA is a telephone-based survey of employers who have recently advertised vacancies in selected skilled occupations to determine their experiences recruiting.

The SERA is conducted by the Department of Employment through its State and Territory Labour Economics Offices (LEOs) and National Office to

- gather information from employers who have recently advertised vacancies for skilled workers and who are therefore in a good position to comment on current recruitment
- provide a consistent methodology for research across states and territories and occupations which can be analysed over time to determine trends in skilled labour markets.

2.1. Main elements of the SERA

Occupations are generally assessed annually. Researchers contact employers who have recently advertised a vacancy (or vacancies) for the occupation being assessed.

Vacancy details are collected from a wide range of sources including metropolitan and regional newspapers and internet sites where job vacancies are advertised.

- Where there are sufficient advertisements, vacancies for follow-up are randomly selected.
- For occupations where the number of advertised vacancies identified in the research period is inadequate to make a sound assessment of the labour market, employers are cold canvassed to discuss their recruitment experiences and expectations.
- Contact with employers is discussion based, rather than a formatted survey, as this allows for the identification of issues which are pertinent to individual occupational labour markets. Key issues relating to the occupation are explored and core information is collected about the skill and qualification requirements of the position, the number of jobs available, whether vacancies were filled, the number of applicants, qualified applicants and suitable applicants and the reasons for applicants being considered to be unsuitable. Other information is collected, where practical, through the [recommended questions](#) (Attachment 1).
- Key statistical and qualitative information from these discussions is recorded and analysed.

To reduce the influence of seasonal factors as far as possible, the Department conducts the SERA contact work for each group of occupations at approximately the same time each year.

3. METHODOLOGY

3.1 Sample size and distribution of sample

The number of employers contacted varies based on the number of people employed in the occupation, the number of employers and the number of vacancies advertised.

Distribution of vacancies by location

Attempts are made to survey an appropriate number of employers from both metropolitan and regional areas. The proportion of vacancies outside metropolitan areas will depend on the state or territory's employment profile generally, together with the profile for the particular occupation.

- In the skill shortage research, the term metropolitan area refers to state and territory capital cities.

3.2 Cold canvassing for occupations with low vacancy numbers

Where vacancy numbers are low, the SERA is supplemented by cold canvassing of a range of large, medium and small employers. Employers are asked whether they have advertised vacancies in the target occupation in the last six months.

- If they have, the standard SERA approach is used following the [recommended questions](#) (Attachment 1).
- If the employer has not advertised, discussions focus on demand for the occupation and issues impacting on the labour market. Questioning may include: the likelihood of them recruiting in the next six months; their expectations of difficulty filling vacancies; whether they have potential employees in the target occupation approaching them for work; their experience with staff turnover in the target occupation; and how they recruit.

3.3 What is a vacancy?

Surveyed vacancies must be for a specific position offered for paid work of 16 hours or more per week and at least three months' duration. Advertisements for self-employment or partnerships are generally excluded. However, in industries where there is significant sub-contracting (e.g. construction), such positions will be included. Vacancies advertised by recruitment agencies are included in the SERA if they are for an actual vacancy with a particular employer rather than a general 'canvassing' advertisement.

Multiple vacancies

Employers sometimes advertise multiple vacancies without having a definite number of positions in mind. In such cases, researchers attempt to seek from employers their best estimate of the number of vacancies available. Employers may be asked how many people they would immediately employ and could afford to employ if a large number of very good candidates applied.

3.4 Definition of applicants and suitable applicants

The number of applicants is the number of people who applied for the position who have work rights in Australia.

A suitable applicant is one who has the skills, experience and qualifications needed to undertake the advertised position. This may take into consideration 'soft' or non-technical skills. In general, the number of applicants considered to be suitable is based on the employers' assessment of suitability.

The number of applicants will usually be higher than the number of suitable and qualified applicants, but for some occupations (those in which employers do not require formal qualifications) there may be more suitable applicants than qualified applicants.

3.5 When is a vacancy filled?

A vacancy is considered to be filled on the basis that there was someone employed in the position six weeks (professional and managerial occupations) or four weeks (trade and other occupations) after the vacancy was advertised/applications closed.

For this reason, contact with employers is generally attempted four weeks (or, in the case of professional and managerial vacancies, six weeks) after the surveyed advertisement appeared. However, where this is not possible, the questions seek information about whether the position was filled within four (or six) weeks.

The period after which a vacancy is assessed is to some extent arbitrary, although it is reasonable to expect that employers would have, in most cases, completed the recruitment process in that time. Setting a defined time for vacancy filling gives the advantage of a simple and consistent benchmark of measuring whether a vacancy is filled so that SERA data are consistent across occupations and between states and territories, and over time.

Incomplete recruitment exercises

In some cases, an employer will not have completed a recruitment exercise within four to six weeks for administrative reasons; for example, they have not finalised formal interviews or have called several promising applicants for a second round of interviews. In this case, the researcher makes arrangements to recontact the employer when the result of the interview process is known. If this is not practicable, the researcher records the vacancy as filled if the employer is highly confident of filling the vacancy from that recruitment round. If the employer is unsure of the result, the vacancy is excluded from the SERA.

3.6 Consultation

Consultation with key associations is undertaken to discuss the findings of the research, the labour market more generally and factors impacting on skill needs.

3.7 Collection and presentation of results

SERA results

SERA results are not intended as a measure of the degree of shortage and are not statistically precise. Reflecting this, figures are quoted in the relevant skill shortage reports in broad terms, but may be compared with previous results where available. The SERA is only one piece of evidence on the state of the labour market for a particular occupation.

While the availability of data varies from occupation to occupation, relevant and available information including that outlined under 'demand and supply analysis' below, is considered with the comments of employers, industry contacts, educational institutions and labour market intermediaries together with SERA results, to provide commentary and ratings.

A low proportion of vacancies filled may not necessarily be indicative of a skill shortage. The reasons for vacancies remaining unfilled are often complex and may not relate to a lack of qualified applicants. Factors include employers' requirements being highly specialised, pay or conditions being below market rates, particular working arrangements and expectations of employers or job seekers being unrealistic, and lack of transport to the job. Additionally, the working arrangements sought by workers may not match those offered by employers; for example, workers seeking full-time work but employers offering part-time hours, employers offering salary and wage employment but workers wanting contract work.

Demand and supply analysis

Researchers take account of a range of data (such as that outlined below), in conjunction with the results of the SERA. Comment on particular data sets is included in the skill shortage research reports only where reliable data are available and where they present relevant information about the labour market for that occupation or add evidence for the rating.

Demand data and analysis includes key determinants of demand (that is, the variables affecting the level of demand for these skills), including

- industry activity statistics and projections
- changes in employment (and registration) levels
- vacancy trends
- graduate employment outcomes
- anecdotal information on demand from employers and industry contacts.

Analysis of new supply to the occupation is important, although available data do not always allow a precise estimate of numbers entering or leaving an occupation. Information about supply is included in occupational reports with comment about anticipated changes (for example the closure of a training course or establishment of new courses). Where there are no well defined supply paths (for example, for some management and associate professional occupations) reports may include information about the diversity of supply sources. Consideration is given to the supply issues such as the following (where data are available and reliable)

- training completions and commencements
- wastage (people leaving the occupation)
- net migration
- informal supply.

3.8 Ratings

The rating for an occupation is based on the labour market for an average experienced worker rather than a new entrant. Taking account of all available information, including the results of the SERA and the reasons for employers being unable to fill vacancies, researchers decide on an appropriate rating.

Ratings are for the whole of the state or territory covered by the report (or for Australia if it is a national report) unless there is evidence suggesting the rating varies between metropolitan and regional locations. Where researchers have identified significant differences in these labour markets this is reflected in the rating.

An occupation may be assessed as being in shortage even though not all specialisations are in shortage. A rating of national shortage suggests shortages are relatively widespread, but it does not mean that employers in every geographical location have difficulty recruiting.

The following definitions are used:

Shortage

Skill shortages exist when employers are unable to fill or have considerable difficulty filling vacancies for an occupation, or significant specialised skill needs within that occupation, at current levels of remuneration and conditions of employment, and in reasonably accessible locations.

Recruitment difficulty

Recruitment difficulties occur when some employers have difficulty filling vacancies for an occupation. There may be an adequate supply of skilled workers but some employers are unable to attract and recruit sufficient, suitable workers for reasons which include: specific experience or specialist skill requirements of the vacancy; differences in hours of work required by the employer and those sought by applicants; or particular location or transport issues.

No shortage

Research has not identified any significant difficulty filling vacancies.

ATTACHMENT 1

RECOMMENDED QUESTIONS

The survey is discussion based so that key issues can be identified and the research can reflect the diversity of the occupational labour markets being assessed. That said, there are some core questions which are included in the discussions to capture consistent information across occupations and locations. The following is a list of those questions, and is not exhaustive. Depending on how the interview flows, there are likely to be a number of other issues explored with contacts. It is up to the judgement of the researcher to determine the most appropriate questions to ask a particular contact based on the employer's circumstances and their willingness to be involved.

Questions marked with an asterisk are considered the minimum core questions to be asked in relation to the *Survey of Employers Who Have Recently Advertised (SERA)*.

- How many vacancies for this occupation were you hoping to fill from this advertisement?*
- How many of these vacancies have you filled?*
- How many applicants did you attract?*
- How many applicants had formal, relevant qualifications?
- How many applicants were suitable?*
- Did you fill the vacancy within four weeks (or six weeks for professionals/managers) from the most recent advertisement?*
- If the vacancy was not filled within four/six weeks of the most recent advertisement, what was the reason for the delay?*
- If the vacancy was unfilled despite attracting suitable applicants, what were the circumstances?
- What are the main activities of the advertised vacancy? What qualifications, skills and experience are needed, including specialist requirements?
- What were the main reasons applicants were considered to be unsuitable?
- How many qualified applicants were unsuitable?
- Were there any particular factors which made the position difficult to fill (for example, location, lack of public transport)?
- Are there any factors currently affecting demand for this occupation?
- Have changes to training arrangements or other supply issues such as licensing affected this occupation?
- How would you rate turnover in this occupation? Why?
- Do you have any other comments in relation to this labour market?