



## SKILL SHORTAGE METHODOLOGY 2008-09

### PURPOSE

The Department of Education, Employment and Workplace Relations (DEEWR) undertakes skill shortage research on an ongoing basis. The DEEWR skill shortage research forms the basis of the National Skill Needs List, which is used to determine eligibility of Australian Apprentices and their employers for a range of incentives, and feeds into the Priority Occupations for the Productivity Places Program.

Skill shortage research also addresses a need for information about skill needs in each State and Territory to underpin policy, planning and resource allocation. State and Territory Skill Shortage Lists which incorporate the results of the research are publicly available and are posted at [www.workplace.gov.au/skillshortages](http://www.workplace.gov.au/skillshortages).

The DEEWR methodology provides qualitative, indicative information on skill shortages. It delivers useful, relevant information about employers' experiences recruiting skilled workers and allows DEEWR to explore labour market issues impacting on the supply and demand for particular skills through discussions with individual employers. While the DEEWR methodology is cost effective and targeted, it is not based on a statistically valid sample and does not enable the compilation of quantitative estimates. That said, the Australian Bureau of Statistics reviewed the methodology in 2006 and found it was appropriate for its purpose.

The DEEWR Skill Shortage research is undertaken on an occupational basis. Until the end of the 2007-08 program, the Australian Standard Classification of Occupations (ASCO) was used to define occupations. In 2008-09 the Skill Shortage research is being undertaken on the basis of the Australian and New Zealand Standard Classification of Occupations (ANZSCO) in line with the introduction of this classification exclusively in ABS statistics from February 2008 and to better reflect the occupational structure of the current Australian labour market.

### 1. SURVEY OF EMPLOYERS WHO HAVE RECENTLY ADVERTISED (SERA)

The SERA is a survey of employers who have recently advertised vacancies in selected skilled occupations ([List of occupations assessed](#)). A number of skilled occupations were added to the program in response to recommendations of the 2006 Council of Australian Governments meeting and agreement with State and Territory governments.

SERA is an important element of the research into skill shortages conducted by DEEWR through its State and Territory Labour Economics Offices (LEOs) and National Office. The aims of the SERA are to

- Better target telephone contact work by focusing on employers who have recently advertised and therefore are in a good position to comment on current recruitment issues for target occupations
- Provide information on employer recruitment experience

- Provide a consistent methodology for information across States/Territories and occupations which could be analysed over time to determine broad trends in skilled labour markets.

## 2. MAIN ELEMENTS OF THE SERA

DEEWR staff contact employers who have recently attempted to recruit in the occupations included in the skill shortage research program. To identify employers who have recruited, vacancy details are collected from available sources, including major metropolitan and regional newspapers, general employment and specialist industry/occupational Internet sites as well as professional associations or from notices outside business premises.

- Where there are sufficient vacancy numbers, vacancies for follow-up are randomly selected
- For some occupations, adequate numbers of vacancies are not identified, and in these cases all vacancies found with appropriate contact information in the survey period are followed up and other employers are cold canvassed to ensure assessments are based on a sufficient number and range of contacts.

Contact with employers is discussion based, rather than a formatted survey, but the minimum information sought from employers is the number of positions available, whether vacancies were filled, the total number of applicants and the number of suitable applicants. However, supplementary information is collected where practical, through the [recommended questions](#) and engagement with employers about labour market issues. The research aims to collect information about why vacancies are unfilled as this is important for making a decision about the rating for each occupation.

- Survey results are recorded and summary information included in a one-page report.

## 3. METHODOLOGY

### 3.1 Sample size and selection of sample

The number of employers contacted varies based on the number of people employed in the occupation and the number of vacancies advertised. In a small number of cases, the limited number of employers makes it impractical to contact the target number of employers who have recently advertised. In these cases judgment is used regarding the number of employers surveyed to produce a reliable result. There is a minimum number of contacts made for each occupation. In the first instance, this comprises employers who have advertised vacancies over the past six months. However, where vacancy numbers are low and sufficient vacancies cannot be identified 'cold canvassing' of major employers and peak bodies is undertaken.

When employers are cold canvassed, they are asked whether they have advertised vacancies in the target occupation in the last six months. (Vacancies older than six months are not considered as they may not be a reliable guide to current labour market conditions and they will reflect a previously assessed labour market.) Employers are then asked whether they filled the vacancy and, if so, approximately how long it took them to do so. See comments under 'cold canvassing'.

If cold canvassed employers have not advertised recently, discussions focus on the employer's perceptions about the labour market for the occupation and issues impacting on the labour market.

#### *Regional vacancies*

DEEWR attempts to survey an appropriate number of employers from regional areas for each occupation taking into account the significance of regional employment in the particular occupation. Regional areas are those outside the major capital cities in each State and Territory.

### *Smaller States/Occupations*

In the smaller States particularly (South Australia, Tasmania, the Northern Territory and Australian Capital Territory) and for occupations which have small employer/vacancy numbers, the minimum number of employer contacts is not always achievable. In these cases, DEEWR aims to collect as many vacancies for follow-up as possible, with “cold canvassing” of employers when vacancy numbers are low.

### *Cold Canvassing for occupations with low vacancy numbers*

Where possible, contact is made with a range of large employers as well as some smaller employers to ensure that any differences in recruitment experiences are captured. Discussion with “cold canvassed” employers is as close as possible to the SERA methodology:

- 1) Have you recently tried to recruit for occupation X?
- 2) How long ago was this? [don't consider those more than 6 months old]
- 3) Did you fill the vacancy?
- 4) [If yes] How long did it take to fill?

Discussion then continues as per the SERA questionnaire.

- If the employer has not recruited, 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 door knocking them; their experience with staff turnover in the target occupation; and how they generally recruit.

## **3.2 Collection and presentation of results**

### *Demand analysis*

Researchers take account of a range of data (such as that outlined below) in conjunction with the results of the SERA which underpins their assessments of occupational labour markets. However, comment on these data sets is included in the Skill Shortage Research Program reports only where it presents relevant information about the labour market for that occupation or where it adds evidence for the rating for the occupation. Comment is included about how changes in industry activity levels impact on demand for the occupation (for example, falling housing starts may impact more quickly on commencing trades such as bricklaying and demand for tilers and painters may hold up longer as work in progress is completed). Additionally, the labour market for trades which has stronger demand from maintenance work such as plumbers may be less affected by a decline in housing commencements.

Demand data could include

- Examination of key determinants of demand (that is, the variables affecting the level of demand for these skills)
- Relevant industry activity statistics and projections
- Employment levels where reliable and current
- Vacancy levels (only where reliable data are available)
- Anecdotal information on demand from employers and industry contacts
- A conclusion on whether demand is increasing/decreasing
- The likely outlook for demand over the following six months.

### *Supply analysis*

Analysis of supply to the occupation is important, although available data do not always allow a precise estimate of numbers entering an occupation. Supply trends are included in occupational reports with comment about anticipated changes to supply, (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 following supply issues

- Training completions and commencements where available
- Wastage (people leaving the occupation)
- Net migration figures if relevant and available
- Comment on informal supply if significant.
- Conclusion on whether overall supply to the occupation is increasing or decreasing.

#### *SERA results*

SERA results are not intended as a measure of the degree of shortage and are not statistically accurate. Reflecting this, figures are quoted in the relevant skill shortage report in broad terms, but may be compared with previous results when available. The SERA is only one piece of evidence for the state of the labour market for a particular occupation. While it may vary from occupation to occupation, other relevant information including that outlined under 'demand analysis' and 'supply analysis', and SERA results are interpreted in light of other available information such as employment growth, vacancy trends (where reliable) and the comments of employers, industry contacts, educational institutions and labour market intermediaries.

A low vacancies filled rate may not necessarily be indicative of a skill shortage in the occupation. DEEWR examines the reasons for vacancies remaining unfilled and there are often a number of causes which are not related to overall shortage. These include employers having specialist requirements, the position involving the operation of machinery or equipment which are not generally used and with which most qualified and skilled workers may not have experience, pay or conditions offered being below market rates, particular working arrangements and expectations of employers or employees which are unrealistic. Additionally, the working arrangements sought by workers may not match those offered by employers, for instance workers seeking full-time work but employers offering part-time hours, employers seeking salary and wage employment but workers wanting contract work.

#### *Release of reports*

Skill shortage reports are posted on the Australian Workplace site at [www.workplace.gov.au/skillshortages](http://www.workplace.gov.au/skillshortages). The publication of these reports coincides with the updating of the State and Territory Skill Shortage Lists. Trades occupations are generally researched in detail in the first half of the financial year (July to December) and professions and other occupations from January to June.

### **3.3 Ratings**

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. Options for ratings are:

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 a qualifier suggesting the rating varies between metropolitan and regional locations. Where researchers have identified differences in the labour market between metropolitan and regional locations this is noted in the ratings box.

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.”

## **3.4 Standard employer questions**

Although the minimum information required for the SERA is whether a vacancy was filled within the four to six week period, other information is important in determining whether skills shortages exist and the reasons for these shortages. [Recommended questions](#) for employer contact work are provided to researchers. It must be emphasised, however, that researchers use their discretion regarding the questions which are appropriate in relation to the occupation and the attitude of the contact.

## **3.5 Timing of contact work**

To reduce the influence of seasonal factors, as far as possible, DEEWR conducts SERA contact work for a group of occupations (for example Construction) at approximately the same time of the year in each State and Territory.

Identifying whether a vacancy is filled or not is measured four weeks after advertising for trades occupations and six weeks after advertising for professional vacancies. Therefore, contact with employers is generally attempted four weeks (or in the case of professional 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. If a vacancy is filled but the employer states they had advertised for several weeks before the vacancy which was surveyed, the concern is whether the *surveyed* vacancy was filled within the four weeks. The focus is on the employer's most recent recruitment experience.

## **3.6 Specialisations**

To achieve a reasonable sample size the SERA is conducted on occupations at the six digit ANZSCO level (although some six digit occupations have been combined). Assessments of shortages in specialisations are usually based on qualitative information drawn from a smaller number of employer and industry contacts.

## **3.7 What is a vacancy?**

The definition of a vacancy is generally as follows. That is, a vacancy is for a definite position offered by the direct employer for a paid employee. Part-time positions are surveyed if the hours

of work are 16 or more per week and temporary/casual positions are surveyed if they are for three months or longer. Advertisements for self-employment or partnerships are generally excluded. However, in industries where there is significant sub-contracting (e.g. construction) and the advertisement offers specific paid employment which meets the criteria, the position is surveyed. 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. However, recruitment agencies are often contacted for qualitative information.

#### *Multiple vacancies*

Employers sometimes advertise multiple vacancies without having a definite number in mind. In such cases, researchers attempt to seek from employers their best estimate of the number of vacancies involved. 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.

### **3.8 When is a vacancy filled?**

A vacancy is considered to be filled if the employer recruited a suitable applicant within four weeks of advertising the surveyed vacancy (six weeks in the case of professions), the successful applicant stayed more than two weeks in the position and left voluntarily, and there were no performance issues.

#### *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 likely result, the vacancy is excluded from the SERA.

### **3.9 Time period**

The period after which a vacancy is assessed (six weeks for professionals, four weeks for other occupations) 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 simple and consistent benchmark of measuring whether a vacancy is filled so that SERA data are consistent across States and National Office, and over time.

Advertisements often state a cut-off date for applications. In this case the vacancy is surveyed four to six weeks after the cut-off date if practical.

### **3.10 Consultation**

Consultation with key industry, employee and professional associations is undertaken to confirm the findings of the research and discuss the labour market and factors impacting on skill needs prior to finalisation of reports and Skill Shortage lists.

**List of occupations to be assessed in 2008-09 Skill Shortage Research****ANZSCO code      Department of Education, Employment and Workplace Relations (DEEWR)****1      Managers****13      Specialist Managers**

- 132211      Finance Manager
- 132311      Human Resource Manager
- 133211      Engineering Manager
- 133512      Production Manager (Manufacturing)
- 133513      Production Manager (Mining)
- 134111      Child Care Centre Manager
- 134212      Nursing Clinical Director

**14      Hospitality, Retail and Service Managers**

- 141311      Hotel and Motel Manager

**2      Professionals****22      Business, Human Resource and Marketing Professionals**

- 221111      Accountant (General)
- 221112      Management Accountant
- 221113      Taxation Accountant
- 221213      External Auditor
- 223311      Training and Development Professional
- 224113      Statistician
- 224311      Economist
- 224512      Valuer
- 224611      Librarian
- 225111      Advertising Specialist
- 225112      Market Research Analyst
- 225113      Marketing Specialist
- 225311      Public Relations Professional

**23      Design, Engineering, Science and Transport Professionals**

- 231111      Aeroplane Pilot
- 231212      Ships' Engineer
- 231213      Ships' Master
- 232111      Architect
- 232112      Landscape Architect
- 232212      Surveyor
- 232611      Urban and Regional Planner
- 233111      Chemical Engineer
- 233213      Quantity Surveyor
- 233211,14,15      Civil Engineer, Structural Engineer, Transport Engineer
- 233311      Electrical Engineer
- 233411      Electronics Engineer
- 233512      Mechanical Engineer
- 233513      Production or Plant Engineer
- 233611      Mining Engineer (excluding Petroleum)
- 233612      Petroleum Engineer
- 234111,12      Agricultural Consultant, Agricultural Scientist
- 234113      Forester (Aus)
- 234211      Chemist
- 234311      Conservation Officer

234312	Environmental Consultant
234313	Environmental Research Scientist
234314	Park Ranger
234411	Geologist
234611	Medical Laboratory Scientist
234711	Veterinarian
<b>24</b>	<b>Education Professionals</b>
241111	Early Childhood (Pre-primary School) Teacher
241213	Primary School Teacher
241411	Secondary School Teacher
241511	Special Needs Teacher
242211	Vocational Education Teacher (Aus)
<b>25</b>	<b>Health Professionals</b>
251211	Medical Diagnostic Radiographer
251212	Medical Radiation Therapist
251214	Sonographer
251311	Environmental Health Officer
251411	Optometrist
251511,13	Hospital Pharmacist, Retail Pharmacist
252111	Chiropractor
252311,13	Dental Specialist, Dentist
252411	Occupational Therapist
252511	Physiotherapist
252611	Podiatrist
252712	Speech Pathologist (Aus)
254111	Midwife
254211	Nurse Educator
254311	Nurse Manager
254412	Registered Nurse (Aged Care)
254413	Registered Nurse (Child and Family Health)
254414	Registered Nurse (Community Health)
254415	Registered Nurse (Critical Care and Emergency)
254416	Registered Nurse (Developmental Disability)
254417	Registered Nurse (Disability and Rehabilitation)
254418	Registered Nurse (Medical)
254421	Registered Nurse (Medical Practice)
254422	Registered Nurse (Mental Health)
254423	Registered Nurse (Perioperative)
254424	Registered Nurse (Surgical)

<b>26</b>	<b>Telecommunications Engineering Professionals</b>
263311,12	Telecommunications Engineer, Telecommunications Network Engineer
<b>27</b>	<b>Legal, Social and Welfare Professionals</b>
271311	Solicitor
272114	Rehabilitation Counsellor
272115	Student Counsellor
272311	Clinical Psychologist
272511	Social Worker
272612	Recreation Officer (Aus)
272613	Welfare Worker
<b>3</b>	<b>Technicians and Trades Workers</b>
<b>31</b>	<b>Engineering, ICT and Science Technicians</b>
311111	Agricultural Technician
312111	Architectural Draftsperson
312112	Building Associate
312113	Building Inspector
312114	Construction Estimator
312211,12	Civil Engineering Draftsperson and Technician
312311,12	Electrical Engineering Draftsperson and Technician
312411,12	Electronic Engineering Draftsperson and Technician
312511,12	Mechanical Engineering Draftsperson and Technician
312912	Metallurgical or Materials Technician
312913	Mine Deputy
<b>32</b>	<b>Automotive and Engineering Trades Workers</b>
321111	Automotive Electrician
321211	Motor Mechanic (General)
321212	Diesel Motor Mechanic
321213	Motorcycle Mechanic
321214	Small Engine Mechanic
322211	Sheetmetal Trades Worker
322311	Metal Fabricator
322313	Welder (First Class)
323111,12,13	Aircraft Maintenance Engineer (Avionics)(Mechanical)(Structures)
323211,12,13	Fitter (General), Fitter and Turner, Fitter-Welder
323214	Metal Machinist (First Class)
323313	Locksmith
323412	Toolmaker
324111	Panelbeater
324211	Vehicle Body Builder
324212	Vehicle Trimmer
324311	Vehicle Painter
<b>33</b>	<b>Construction Trades Workers</b>
331111	Bricklayer
331112	Stonemason
331211	Carpenter and Joiner
332111	Floor Finisher
332211	Painting Trades Worker
333111	Glazier
333211	Fibrous Plasterer
333212	Solid Plasterer
333311	Roof Tiler

333411	Wall and Floor Tiler
334111	Plumber (General)
334112	Airconditioning and Mechanical Services Plumber
334113	Drainer
334114	Gasfitter
334115	Roof Plumber
<b>34</b>	<b>Electrotechnology and Telecommunications Trades Workers</b>
341111	Electrician (General)
341113	Lift Mechanic
342111	Airconditioning and Refrigeration Mechanic
342211	Electrical Linesworker
342311	Business Machine Mechanic
342313	Electronic Equipment Trades Worker
342314	Electronic Instrument Trades Worker (General)
342411	Cabler (Data and Telecommunications)
342413	Telecommunications Linesworker
342414	Telecommunications Technician
<b>35</b>	<b>Food Trades</b>
351111	Baker
351112	Pastrycook
351211	Butcher or Smallgoods Maker
351311,351411	Chef, Cook
<b>36</b>	<b>Skilled Animal and Horticultural Workers</b>
361211	Shearer
362211	Gardener (General)
362212	Arborist
362213	Landscape Gardener
362311	Greenkeeper
362411	Nurseryperson
<b>39</b>	<b>Other Technicians and Trades Workers</b>
391111	Hairdresser
392111	Binder and Finisher
392112	Screen Printer
392211	Graphic Pre-press Trades Worker
392311	Printing Machinist
393311	Upholsterer
394111	Cabinetmaker
394211	Furniture Finisher
394212	Picture Framer
394213	Wood Machinist
399111,12	Boat Builder and Repairer, Shipwright
399211	Chemical Plant Operator
399212	Gas or Petroleum Operator
399213	Power Generation Plant Operator
399411	Jeweller
399611	Signwriter
399913	Optical Dispenser (Aus)
399914	Optical Mechanic
<b>4</b>	<b>Community and Personal Service Workers</b>
<b>41</b>	<b>Health and Welfare Support Workers</b>
411213	Dental Technician
411411	Enrolled Nurse
411311	Diversional Therapist

411711 Community Worker  
411716 Youth Worker  
**42 Carers and Aides**  
421111 Child Care Worker  
421114 Out of School Hours Care Worker  
**43 Hospitality Workers**  
431411 Hotel Service Manager  
431511 Waiter

## RECOMMENDED QUESTIONS

The following is a list of recommended questions when contacting employers and industry contacts. The list is not exhaustive. Depending on how the interview flows, there may well be other relevant questions. It is also not recommended that all these questions should be asked of all contacts or necessarily in this particular order. Rather, 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. If an employer was selected for interview because he/she had advertised for recent graduates, the questions should reflect this.

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)*.

1. Hello, my name is **X** from the Department of Education, Employment and Workplace Relations. We are conducting research into the labour market for occupation **X**. I understand you have recently advertised for **occupation x** (give detail of advertisement). Is this correct? (Ask to speak to the appropriate person.)\*
2. *How many* vacancies did you have for this occupation?\*
3. For how long has the position(s) been vacant?\*
4. Have you *filled the vacancy*, or expect to shortly, from the current recruitment exercise?\*
5. How many applicants did you get?\*
6. Approximately how many (or what proportion) of applicants were suitable?\*
7. What were the main reasons applicants were considered to be unsuitable?\*

Issues such as the following should be canvassed, although **this is not to be used as a prompt as we do not want to lead employers.**

- i Not suited to type of work
  - ii Too young
  - iii Too old
  - iv Poor attitude or presentation
  - v Lack of relevant skills
  - vi Lack of experience
  - vii Inadequate qualifications
  - viii Other (specify)
8. Were you seeking specialised skills or experience? (Please specify)
  9. Were there any other factors which made the position difficult to fill (eg, location, lack of public transport)
  10. How would you rate turnover in this occupation? Why?
  11. Have changes to training arrangements or other supply issues such as licensing affected this occupation? OR (for occupations like managers or associate professionals) what background/training are you seeking in the ideal candidate?
  12. Are there any factors currently affecting demand for this occupation?
  13. Have you attempted to recruit a New Apprentice in the past 12 months? If so, did you have difficulty filling the position?
  - 13a) Do you have any general comments on your experience in recruiting new apprentices.
  14. Do you have any other comments in relation to skill shortages?

### *Other organisations*

Contacts with other organisations such as employee associations, industry bodies, training institutions may also be necessary or desirable. No attempt will be made to develop standard questions for these contacts as this will vary on a case by case basis depending on the purpose of

the interview. Key issues of course will be evidence of shortages, factors influencing the labour market.

The contact with key employer/industry or professional groups is not just for verification of SERA results but should be seen as a key data source to be taken into account in determining the occupational labour market. For example, information about whether the industry is instigating actions such as negotiation of labour agreements, or considering other initiatives to improve labour supply to the occupation can be useful. This information source can also provide insight into future demand.