

Statistical standard for occupation

Rationale

Labour market analysis is currently the primary use of data collected on occupation. However, the Australian and New Zealand Standard Classification of Occupations (ANZSCO), which is supported by this statistical standard, is used by a wide range of people and organisations for a variety of other purposes, which include:

- Employers (government and non-government) use the classification to monitor EEO policy
- The careers service industry, as well as independent job-seekers use occupation titles, job content and skill information to help with education planning and job placement
- Recruitment agencies and consultants use the classification to categorise job vacancies
- Demographers, sociologists, policy analysts and other researchers are increasingly using occupation as a variable in their work to measure or calculate 'skill shortages' or socio-economic status
- Insurance providers use the classification to identify occupations with high risks of accidents and to set insurance premiums
- Market researchers use the classification for targeting products and services

The statistical standard provides a basis for the standardised collection, analysis and dissemination of occupation data. The statistical standard will enable improved comparability of occupation statistics produced by Australia and New Zealand.

In support of the Australia–New Zealand Closer Economic Relations Trade Agreement (ANZCERTA), the Australian Bureau of Statistics and Statistics New Zealand have a policy of working towards developing harmonised statistical classifications. The benefits of developing a joint occupation classification were noted as being the ability to produce a more up-to-date, relevant and conceptually sound classification, and the improved capacity for analysis of trans-Tasman labour market data. This statistical standard supports the use of ANZSCO in the New Zealand context.

Scope

The scope of the statistical standard is all occupations and jobs in the Australian and New Zealand labour markets undertaken for pay or profit, including jobs occupied by people working for themselves. The statistical standard is not designed to cover work not undertaken for pay or profit, for example, voluntary work. Occupations that are wholly illegal in New Zealand are excluded.

In line with the principles of the International Standard Classification of Occupations this statistical standard does not take into consideration whether a worker is a working proprietor or not. This and similar attributes of the labour force, such as being an employer or employee etc, reflect status in employment and not the tasks and duties or skills of the worker.

Application of this standard is compulsory within Statistics NZ and should be encouraged across the Official Statistical System.

Definition

Occupation

An occupation is defined as a set of jobs that require the performance of similar or identical sets of tasks. As it is rare for two actual jobs to have identical sets of tasks, in practical terms, an occupation is a set of jobs whose main tasks are characterised by a high degree of similarity.

The similarity of tasks is defined in this statistical standard as a function of the level and specialisation of skills required to perform those tasks. Skill is defined as the ability to competently perform the tasks associated with an occupation.

It follows that ANZSCO classifies occupations according to two criteria – skill level and skill specialisation.

Job

A job is defined as a set of tasks designed to be performed by one person for an employer (including self-employment) in return for payment or profit. Individual persons are classified by occupation through their relationship to a past, present or future job.

Any particular job will typically involve an individual working for a particular employer and undertaking a particular set of tasks. People working for themselves are considered as having a job and belonging to the labour force.

People undertaking work without pay or profit, for example, voluntary work, are excluded from the concept of job. However, this is not to say that the classification cannot be used to describe the activities of persons not working for pay or profit.

Skill level

Skill level of an occupation is defined as a function of the range and complexity of the set of tasks performed in a particular occupation. The greater the range and complexity of the set of tasks, the greater the skill level of an occupation.

Skill level is measured operationally by:

the level or

- amount of formal education and training
- the amount of previous experience in a related occupation and
- the amount of on-the-job training

required to competently perform the set of tasks required for that occupation.

In general, the greater the range and complexity of the set of tasks involved, the greater the amount of formal education and training, previous experience and on-the-job training that are required to competently perform the set of tasks for that occupation.

Formal education and training refers to the level and amount of education and training required for competent performance of the tasks required in an occupation. It is measured in terms of educational qualifications as set out in the Australian

Qualification Framework (AQF) or the New Zealand Register of Quality Assured Qualifications (NZ Register).

Previous experience refers to the time spent gaining work experience in related occupations or activities required for the competent performance of the tasks in an occupation. It is measured in months or years, and may be undertaken at the same time as formal training.

ANZSCO and this statistical standard do not measure the skill level of an individual, rather it refers to the level of skill that is typically required to competently perform the tasks of a particular occupation. Skill level is an attribute of occupations, not of individual in the labour force or of particular jobs. It is irrelevant whether a particular individual working in a job in a particular occupation has a certain amount of training or a particular level of competence or not.

For example, a person who spreads mortar and lays bricks for a living has the occupation Bricklayer, regardless of whether the person is an exceptionally competent bricklayer with many years of experience and post-trade qualifications, or an inexperienced bricklayer with no formal qualifications and a low level of competence. The skill level of the occupation Bricklayer is determined on the basis of that typically required for competent performance.

Occupations are assigned to one of five skill levels. In determining the skill level of each occupation, advice was sought from employers, industry training bodies, professional organisations and others to ensure that the information is as accurate and meaningful as possible.

Skill specialisation

Skill specialisation is defined as a function of:

- field of knowledge required
- tools and equipment used
- materials worked with
- goods and services produced or provided

Components of skill

Skill level is applied as a guiding principle to differentiate between the major groups of ANZSCO and determine which major group an occupation belongs to.

The skill component of an occupation is generally recognised as having the following attributes:

- formal qualifications
- competencies
- experience
- subject matter knowledge
- ability to use specific tools and equipment
- ability to produce specific goods and services

Classification criteria

Occupations are organised into progressively larger groups on the basis of their similarities in terms of both skill level and skill specialisation.

The conceptual model adopted for this statistical standard uses a combination of skill level and skill specialisation as criteria to design major groups which are meaningful and useful for most purposes. The eight major groups are formed by grouping together sub-major groups using aspects of both skill level and skill specialisation.

The skill level criterion is applied rigorously as possible at the second level of the classification, the sub-major group level, together with a finer application of skill specialisation than that applied at the major group level. Each sub-major group is made up of a number of minor groups.

Minor groups are distinguished from each other mainly on the basis of a finer application of skill specialisation than that applied at the sub-major group level. Within minor groups, unit groups are distinguished from each other on the basis of skill specialisation and, where necessary, skill level.

Virtually all unit groups are at one skill level. There are only eight unit groups which contain occupations at more than one skill level. In all but two of these unit groups, the vast majority of jobs classified to the unit group are at only one skill level. Data stored at unit group level can therefore be aggregated by skill level with a high degree of validity.

Within unit groups, the distinction between occupations amounts to differences between tasks performed in occupations. All occupations are at one skill level.

As a result, data classified at the major group level will provide only a broad indication of skill level. Data at the sub-major group level will provide a satisfactory indication of skill level for many analytical purposes. Data classified at the unit group level will provide an accurate indication of skill level and will be able to be aggregated by skill level only.

Classification

Occupation is an hierarchical classification with five levels. The Major Group level of the classification has 8 categories. The sub-major group level of the classification has 43 categories. The minor group level has 97 categories. The unit group level has 358 categories and the Group level has 998 categories – excluding residual categories. The residual categories are defined in the Glossary.

The major groups of the classification are:

1. managers
2. professionals
3. technicians and trades workers
4. community and personal service workers

5. clerical and administrative workers
6. sales workers
7. machinery operators and drivers
8. labourers

The following example shows how the classification is divided using the different levels of the structure.

1 managers
 13 specialist managers
 135 ICT managers
 1351 ICT managers
 135111 chief information officer

Classification	Australian and New Zealand Standard Classification of Occupations
Abbreviation	ANZSCO
Version	V1.0
Effective date	01/07/2005

Coding Process

Most information is obtained from direct questions asking for the occupation or job title and, depending upon the survey, the main tasks and duties applicable to that occupation or job. Data collection methods are usually interviewer-administered or self-administered.

For statistical survey processing, it is the occupation title given by the individual that is classified and given the appropriate classification code.

A codefile is used to code responses. A codefile is a comprehensive list of probable survey responses and the classification categories to which they are coded. The codefile for occupations contains a wide variety of occupation titles.

Statistical surveys classify occupational information through a coding process whereby a response is converted to a numeric code. Computer assisted coding is generally used, whereby the codefile is kept with all occupation and job titles alongside the relevant classification code.

Given any job or occupation title the codefile should assist in determining whether there is a corresponding entry. If there is, the appropriate code can be applied.

Where there is no corresponding entry, it becomes necessary to obtain other information that may lead to the appropriate code or occupation description. This should be done by considering the tasks and duties undertaken in the occupation.

As ANZSCO is an hierarchical classification, SNZ surveys can assign data to its different levels. Generally this will be at a specific level of the classification as decided upon by the survey collecting and producing the data, for example, the Census of Population and Dwellings would classify responses to the six digit level and the Migration Survey would classify responses to the three digit level.

Residual categories are available for responses that are too vague. For example, engineer is an occupation title that could, with additional information be classified to any major group of the classification. Without the additional information, the title is not detailed enough to allow accurate coding to a specific category or level of the classification.

For further guidance on coding decisions see Appendix 1.

Special Categories

Managers

A person working as a manager must be performing managerial tasks such as planning, organising and coordinating the activities of the workplace to be classified to major group 1. If the tasks given are not considered to be managerial in nature, a more appropriate code elsewhere in the classification should be allocated.

Supervisors/Team Leaders

The concept of supervisor is a person who controls and supervises a group of workers without doing any managerial tasks or duties. Persons stating 'supervisor' should be classified to the occupation category that they supervise regardless of whether they are the senior member of a team or whether they are in fact doing supervising tasks and duties.

Apprentices and Trainees

These are classified to the occupation for which they are being trained.

Questionnaire module

Requirements

The questionnaire module must obtain information on the respondent's occupation or job title, and the associated tasks and duties. If possible, the questionnaire module should also collect information about the skills required to perform the occupation.

This is applicable to all survey collections, regardless of whether the information is collected via personal, proxy or telephone interview or by a self-completion questionnaire.

Example

The questionnaire module below is an example that meets the requirements documented in this statistical standard. Other questionnaire modules may vary in format but should conform to the requirements contained in this statistical standard.

Machine and Stationary Plant Operators
Mobile Plant Operators
Road and Rail Drivers
Storepersons
Cleaners and Laundry Workers
Construction and Mining Labourers
Factory Process Workers
Farm, Forestry and Garden Workers
Food Preparation Assistants
Other Labourers

Related classifications and standards

New Zealand

ANZSCO is linked to the New Zealand Standard Classification of Occupations 1999.

The Australian and New Zealand Standard Classification of Occupations is currently used by other parts of the Official Statistical System in New Zealand, especially through the Careers Services job search database and the Department of Labour Job Vacancy Survey.

The statistical standard for occupation should be read in conjunction with the statistical standard for labour force status 1999:

- labour force status

International

International Standard Classification of Occupations (ISCO)

The International Standard Classification of Occupations (ISCO) provides a base for member countries of the International Labour Office (ILO) to compare statistics on occupational groups in order to ascertain the distribution of the employed population, to determine average wages and to merge data from different countries. ISCO also provides a framework to assist countries to develop occupation classifications.

ANZSCO is concorded to ISCO. Both classifications use the same concepts and definitions, as well as using skill level to differentiate between the major groups. Within each major group, skill specialisation is used to progressively differentiate each level of the classification from one another.

Glossary

Residual categories

Response unidentifiable

This category is used when there is a response given, but:

1. the response is illegible, or
2. it is unclear what the meaning or intent of the response is – this most commonly occurs when the response being classified contains insufficient detail, is ambiguous or is vague, or
3. the response is contradictory eg, both the yes and no tick boxes have been ticked, or
4. The response is clear and seemingly within the scope of the classification but can not be coded because no suitable option (particularly other residual category options such as 'not elsewhere classified' or 'not further defined') exists in the classification or codefile.

Response outside scope

This category is used for responses that are positively identified (ie the meaning and the intent are clear) but which clearly fall outside the scope of the classification/topic as defined in the standard.

Not stated

This category is only used where a respondent has not given any response to the question asked, ie it is solely for non-response.

Occupation

An occupation is a set of jobs that require the performance of similar or identical sets of tasks.

Job

A job is a set of tasks designed to be performed by one person for an employer (including self-employment) in return for payment or profit.

Skill level

Skill level is defined as a function of the range and complexity of the set of tasks performed in a particular occupation.

Skill specialisation

Skill specialisation is defined as a function of the field of knowledge required, tools and equipment used, materials worked with and goods and services produced.

References

Australian Bureau of Statistics, (1997). *Australian Standard Classification of Occupations Second Edition* , Canberra.
Australian Bureau of Statistics, (2005). *Australian and New Zealand Standard Classification of Occupations Information Paper* , Canberra.

International Labour Office, (1992). *International Standard Classification of Occupations (ISCO-88)* , Geneva.

Statistics New Zealand, 2001. *New Zealand Standard Classification of Occupations 1999, Wellington, Catalogue No. 19.004.0099* .

Further information

ANZSCO reference group

The ANZSCO Reference Group of Key Users has been set up to enable consultation with the key users of the classification. Their role is to ensure that the classification meets the needs of the key users and is a true reflection of the occupations currently available in the New Zealand labour market.

The following are members of the ANZSCO Reference Group:

- Careers Service
- Department of Labour
- State Services Commission
- Tertiary Education Commission
- Te Puni Kokiri
- Vice Chancellors Committee on Graduate Employment.

Appendix 1 – coding decisions

The following coding decisions are those predominantly used for coding occupations.

Responses covered in these coding decisions are specific survey responses and do not reflect the non-sexist language used in the standard and classification.

Non labour force

The following respondents are **NOT** considered to be in the labour force:

Housewives (not working for pay);
Students (not working for pay);
Retired persons;
Trainee teachers;
Polytech nurses;
Sheltered Workshop/Rehabilitation Centre trainees who attend these organisations for therapeutic reasons;
Overseas army personnel on exercise in New Zealand;
Prison inmates who work within the confines of the prison;
Farmers' wives who have stated their occupation and tasks as housework;
Elderly Hospital Patients who are obviously retired and have entered their previous occupation.

Labour force

The following respondents **ARE** considered to be in the labour force:

Prison inmates who are employed outside the confines of the prison;
Hospital Patients if they state they are working (Excluding elderly retired patients);
Sheltered Workshop/Rehabilitation Centre instructors and other staff who are receiving wages;
Farmers' wives who state in their tasks that they are contributing to the running and production of the farm;
Overseas diplomats that are members of an Embassy, unless they are obviously guests;
Crew aboard ships and employees on oil rigs;

Tutors

Where tutors are clearly employed in a tertiary institution e.g. polytech, university, code occupation to University Tutor – 242112' or 'Polytechnic Tutor – 242211'.

Other tutors are coded to their activity e.g. a cane work tutor is to be coded to cane worker, a pottery tutor is to be coded to potter.

Tutor with no further details should be coded to 97000 Unidentifiable occupation.

Farmer's wives

Farmer's wives who contribute to the running of the farm are coded as farmers.

Supervisors

Supervisors are coded to the occupation that they supervise.

Self-employed working proprietors

Self-employed working proprietors in their own business e.g. lawyer, doctor, plumber etc. are coded as such.

Farmers

Farmers who are involved in both crop and livestock farming are coded to mixed crop and livestock farmers i.e. 121411.

Farmers who are involved with two or more varieties of livestock are coded to mixed livestock farmers i.e. 121317.

Farmers who do not state the type of farming they are involved in are to be coded to general farmers i.e. 121411.

Apprentices

Apprentices are coded to the occupation they are an apprentice to e.g. apprentice butcher is coded to butcher.

Trainees

Trainees are coded to the occupation they are training for, e.g. trainee chef is coded to chef. Trainee teachers and polytech trainee nurses are excluded.

Driver

Drivers who state they are 'driving', but do not state what they are driving, are coded to truck driver (general) 733111.

Clerk

Clerk nod is coded to general clerk 531111.

Manager

Managers who provide no additional information about their occupation are coded to 111211 Corporate General Manager.

Engineer

Engineers who only state they do engineering and give no further supporting information are coded to unidentifiable occupation 997000.

Personnel in the Armed forces

Persons in the Army, Airforce or Navy depending on rank and occupation title are coded to:

Defence Force Senior Officer - 111212; or
Commissioned Defence Force Officer - 139111; or
Senior Noncommissioned Defence Force Member 139211; or
Defence Force Member - Other Ranks 441111

Those that are in the Armed Forces but state their occupation as cook, doctor, etc are to be coded to the occupation stated.

Embassies and diplomats

Ambassadors, Consul Generals and High Commissioners are to be given occupation code 111399.

Process workers

Process Workers who give no further supporting about their occupation are coded to 997000 Response Unidentifiable.