Australian Government

Department of Education, Employment and Workplace Relations

PSPGOV523A Interrogate and analyse statistical data

Release 3

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

PSPGOV523A Interrogate and analyse statistical data

Modification History

Release	TP Version	Comments
3	PSP12V1	Unit descriptor, evidence guide, required skills and knowledge and range statement edited.
2	PSP04V4.2	Layout adjusted. No changes to content.
1	PSP04V4.1	Primary release.

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to apply techniques to analyse statistical data. It includes planning the analysis, applying statistical concepts and processes, determining strengths and weaknesses of the analysis and producing further statistics.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Working in Government

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements are the essential outcomes of the unit of competency.

Together, performance criteria specify the requirements for competent performance. Text in **bold italics** is explained in the Range Statement following.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. **Plan analysis**	1.1 *Analysis* and descriptive tools and techniques are chosen appropriate to the nature of the information and the required outcome/s.
	1.2 Priority of data to be interrogated is determined in consultation with relevant suitably qualified people, and work is organised accordingly.
	1.3 An understanding of the nature of the program or activity from which the data is obtained is reflected in the analysis of material.
	1.4 An understanding of the way in which the data is structured in the system is reflected in the analysis.
	1.5 The likely statistical indicators of the results are reflected in the analysis.
2. **Apply statistical concepts and processes**	2.1 *Software* is used to retrieve data and present it in the required format.
	2.2 Quantitative and/or qualitative analyses are performed to obtain required outcomes.
	2.3 Analysis and descriptive tools and techniques are used appropriately given the nature of the information and the required outcomes.
	2.4 Preliminary results are expressed in accordance with the required detail, format and timeframe of the project.
	2.5 Analysis is performed in accordance with *legislation, policy and guidelines*.
3. **Determine strengths and weaknesses of analysis**	3.1 *Sources of error* are identified and described as required.
	3.2 Limitations in the methodology are identified and described as appropriate.
	3.3 The conduct and results of analysis are verified by a *suitably qualified person.*
4. **Produce further statistics**	4.1 *Summary statistics* are calculated from the given dataset as required in accordance with organisational requirements.

Required Skills and Knowledge

This section describes the essential skills and knowledge and their level, required for this unit.

Skill requirements

Look for evidence that confirms skills in:

- numeracy proficiency in statistical data analysis
- applying legislation, regulations and policies relating to statistical analysis
- using at least one statistical analysis package
- utilising the most relevant data capture (software)
- using GIS and web mapping/web GIS tools to access and/or manipulate a range of data
- using a spreadsheet or database package for data analysis
- using statistical tools to collect, store and analyse data
- calculating growth rates and percentage change over time
- applying analytical problem solving
- communicating statistical concepts
- being able to 'listen' to data needs and use appropriate statistics such as mean, median, mode, standard deviation
- responding to diversity, including gender and disability
- applying procedures relating to occupational health and safety and environment in the context of statistical analysis
- reading and writing skills to produce relevant documentation

Knowledge requirements

Look for evidence that confirms knowledge and understanding of:

- legislation, regulations, policies, procedures and guidelines relating to statistical analysis
- the limitations of the data and statistics used
- the concept of variation
- changes occurring over time
- relevance of the calculated statistics and the meta-data associated with these statistics
- the importance of selecting the appropriate statistical analysis
- the method of selecting the appropriate statistical analysis
- sources of expertise within the organisation
- equal employment opportunity, equity and diversity principles
- public sector legislation such as occupational health and safety and environment in the context of statistical analysis

Evidence Guide

The Evidence Guide specifies the evidence required to demonstrate achievement in the unit of competency as a whole. It must be read in conjunction with the Unit descriptor, Performance Criteria, the Range Statement and the Assessment Guidelines for the Public Sector Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	In addition to integrated demonstration of the elements and their related performance criteria, look for evidence that confirms consistency of performance in interrogating and analysing statistical data. This will include evidence of: • interrogating and analysing at least three actual or simulated statistical data collections, on three separate occasions or for three different situations/contexts • adhering to legal, ethical and organisational requirements relating to statistical data interrogation and analysis
Context of and specific resources for assessment	Assessment must ensure access to a real or simulated workplace environment that closely resembles normal work practice and replicates the range of conditions likely to be encountered while conducting investigations, including coping with difficulties, irregularities and breakdowns in routine. Access is required to resources such as: • applicable legislation, policies and procedures • case studies and workplace scenarios to capture the range of requirements for situations likely to be encountered • technology and statistical tools
Method of assessment	Assessment methods suitable for valid and reliable assessment of this unit of competency may include, but are not limited to, a combination of 2 or more of: • case studies • demonstration • observation • written or oral questions • scenarios • simulation or role plays • authenticated evidence from the workplace and/or training courses
Guidance information for assessment	Assessment methods should reflect workplace demands, such as literacy, and the needs of particular groups, such as:

- people with disabilities
- people from culturally and linguistically diverse backgrounds
- Aboriginal and Torres Strait Islander people
- women
- young people
- older people
- people in rural and remote locations

Range Statement

The Range Statement provides information about the context in which the unit of competency is carried out. The variables cater for differences between States and Territories and the Commonwealth, and between organisations and workplaces. They allow for different work requirements, work practices and knowledge. The Range Statement also provides a focus for assessment. It relates to the unit as a whole. Text in *bold italics* in the Performance Criteria is explained here.	
Analysis techniques may include:	• re-coding data into a form appropriate for analysis • construction of graphs • calculation of summary statistics • implementation of statistical tests
Software may include:	• Geographic Information System (GIS) • spreadsheet tools

Legislation, ***policy and guidelines*** may include:	• State/Territory and Commonwealth legislation and regulations such as:
	  • public sector management acts
	  • financial management acts
	  • privacy legislation
	  • equal employment opportunity and anti-discrimination legislation
	  • occupational health and safety legislation
	  • ethics and accountability standards
	  • public sector standards
	  • risk management standards
	  • fraud control standards
	  • government security standards
	  • knowledge management standards
	  • organisational policy, procedures and protocols

Sources of error may include:	• error due to sampling variation • error due to non-response or poor survey design • measurement error
Summary statistics may include:	• mean • median • mode • standard deviation • standard error • relative standard error • history summaries • trend summaries

Unit Sector(s)

Not applicable.

Competency field

Working in Government.