

Title	Carry out a statistical research project in a public sector or other policy context		
Level	5	Credits	20

Purpose	<p>This unit standard is designed for people employed in positions where they are required to interpret statistical data to make and/or report on recommendations.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – plan a statistical research project in a public sector or other policy context; – carry out a statistical research project in a public sector or other policy context; – prepare and communicate a statistical research report in a public sector or other policy context; and – evaluate the research report in a public sector or other policy context.
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Classification	Public Sector Services > Public Sector Core Skills
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Available grade	Achieved
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Guidance Information

- 1 References
 - Human Rights Act 1993;
 - Income Tax Act 2007;
 - Local Government Official Information and Meetings Act 1987;
 - New Zealand Bill of Rights Act 1990;
 - Official Information Act 1982;
 - Protected Disclosures Act 2000;
 - Privacy Act 1993;
 - Public Finance Act 1989;
 - State Sector Act 1988;
 - Statistics Act 1975;
 - Information sharing agreements between government agencies and any other organisations;
 - Treaty of Waitangi/Te Tiriti o Waitangi;
 - United Nations Fundamental Principles of Official Statistics; and
 - any relevant legislation applicable to specific government agencies and any other organisations whose employees are supplying evidence for assessment against this unit standard.

Statistical obligations may also exist under a range of treaties and conventions, e.g. World Health Organisation (WHO), or environmental treaties such as the Paris Climate Agreement.

Any reference superseding any of the above will apply, pending review of this unit standard.

- 2 Where assessment will occur for an international audience, the applicable or equivalent legislation of the country where assessment is taking place may be used. Statistical related obligations may also exist under a treaty of conventions, e.g. WHO conventions or environmental treaties such as the Paris Climate Agreement.
- 3 **Recommended entry knowledge and skills**
It is recommended that candidates have basic data transformation skills, including the ability to use simple formulae in a spreadsheet application, and be able to compute the value of a simple mathematical expression.
- 4 Demonstration of knowledge and skills must be consistent with any applicable code or codes of conduct such as the New Zealand State Services Code of Conduct, Standards of Integrity and Conduct (available from <http://www.ssc.govt.nz>) and/or any other organisation or sector specific code or codes of conduct and/or ethics.
- 5 Although this unit standard is classified in the *Public Sector Core Skills* domain it is written so it can also be applied to non-public sector organisations as well as within the public sector. Examples of such non-public sector organisations are non-governmental organisations (NGOs), charities, and iwi authorities.
- 6 Assessment for this unit standard will be based on data collection case studies, and additional reports and datasets as required.
- 7 **Definitions**
Organisational requirements refer to instructions to staff on policy and procedures which are documented in memo or manual format and are available in the workplace.
Quality of data has six dimensions: relevance, accuracy, timeliness, interpretability, consistency, and accessibility.

Outcomes and performance criteria

Outcome 1

Plan a statistical research project in a public sector or other policy context.

Performance criteria

- 1.1 Specify the purpose of the research, and develop specific research objectives that are consistent with the purpose.
- 1.2 Ensure research design and planning is practicable, consistent with the research objectives, and is in accordance with legal, ethical, and organisational requirements.

- 1.3 Ensure the research plan identifies the organisational context and outlines the research procedures to be used.
- Range research procedures may include but are not limited to – the identification of information sources, data types and quality of data, sampling methods, data linkage methodologies, statistical analysis methods, graphical and tabular presentation.
- 1.4 Select and outline statistical methodologies to meet research objectives, provide information and data relevant to the research project, and achieve reliable and valid findings.
- Range at least one appropriate statistical analysis is included from – confidence intervals for means or proportions, contingency tables and chi squared or other test for two categorical variables, parametric hypothesis test on two paired or independent groups (e.g. t-test), non-parametric hypothesis test on two paired or independent groups (e.g. Signed Rank, Mann Whitney U), linear relationships between pairs of numeric variables (e.g. correlation and regression), interpretation of time series or index numbers, other formal hypothesis tests, other parameter estimation with confidence intervals, and/or absolute or relative standard errors; where the chosen data are from census or administrative data, change over time could be investigated or variation between the subgroups characterised.

Outcome 2

Carry out a statistical research project in a public sector or other policy context.

Performance criteria

- 2.1 Determine Information and data sources in accordance with the research plan.
- 2.2 Source and collate research data in accordance with the research plan.
- 2.3 Analyse and interpret research data to make estimates, to identify facts, issues, patterns, inter-relationships, trends, and to test hypotheses, in accordance with the research plan.
- 2.4 Analyse and interpret research data that is consistent with the information collected and research methodologies employed.
- 2.5 Evaluate and explain research findings in relation to the specified research objectives.

2.6 Identify limitations of the research methodology and data, including the quality of the data used, and the reliability and validity of research results.

Range may include but is not limited to – sampling design, response rate, imputation methods, assumptions made, methods of analysis; may include relevant suggestions for future research.

Outcome 3

Prepare and communicate a statistical research report in a public sector or other policy context.

Range must include but is not limited to – title, background/introduction, research question(s), research plan/methods, legal or ethical issues, data (and associated quality issues), statistical analysis, results, conclusions/recommendations, further questions or research, references, any appendices if required.

Performance criteria

3.1 Produce the research report so it is consistent with research objectives, provides timely and accurate analysis, and meets organisational requirements in terms of research standards.

3.2 Ensure the research report provides clear and accurate analysis of the information and data, and that the recommendations and/or conclusions are supported by the research findings and relate to the research objectives and question.

3.3 Report the results of information analysis so it is logically ordered, concise and clear, incorporates predictions and assumptions, and identifies limitations.

3.4 Use methods of presentation and reporting of research findings that are appropriate for the research results and the needs of the recipients of the information, and that meet organisational reporting and presentation standards.

Outcome 4

Evaluate the research project in a public sector or other policy context.

Performance criteria

4.1 Identify the strengths and weaknesses of the research methodology.

4.2 Identify the strengths and weaknesses of the data.

Range may include but is not limited to – quality of data, statistical integrity, suitability for purpose.

This unit standard is expiring. Assessment against this standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 November 2008	31 December 2020
Review	2	21 May 2010	31 December 2020
Review	3	14 December 2017	31 December 2023
Review	4	15 December 2022	31 December 2023

Consent and Moderation Requirements (CMR) reference

0121

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.