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Australian Standard™

Statistical interpretation of data—Tests and confidence intervals relating to proportions

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PREFACE

This Standard was prepared by the Australia members of Joint Standards Australia/New Zealand Committee QR-008, Quality Systems. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australia/New Zealand Standard.

This Standard is identical with, and has been reproduced from ISO 11453:1996, *Statistical interpretation of data—Tests and confidence intervals relating to proportions*.

The objective of this Standard is to describe statistical methods to analysts for determining proportions of a population(s) in specified instances that determine what proportion of a population has a particular characteristic.

The terms ‘normative’ and ‘informative’ are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

As this Standard is reproduced from an international standard, the following applies:

(a) Its number appears on the cover and title page while the international standard number appears only on the cover

(b) In the source text ‘this International Standard’ should read ‘this Australian Standard’.

(c) A full point substitutes for a comma when referring to a decimal marker.

(d) None of the normative references in the source document have been adopted as Australian or Australian/New Zealand Standards.

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NOTES

AUSTRALIAN STANDARD

Statistical interpretation of data — Tests and confidence intervals relating to proportions

1 Scope

This International Standard describes specific statistical methods for addressing the following questions.

a) Given a population of items from which a sample of n items has been drawn, x of the sample items are found to show a specified characteristic. What proportion of the population has that characteristic? (See A forms, subclause 8.1.)

b) Is the proportion estimated in a) different from a nominal (specified) value? (See B forms, subclause 8.2.)

c) Given two distinct populations, are the proportions with the characteristic in the two populations different? (See C forms, subclause 8.3.)

d) In b) and c) how many items must be sampled in the population(s) to be sufficiently sure that the result of the test is correct? (See 7.2.3 and 7.3.3.)

It is essential that the drawing of samples does not have any appreciable effect on the population. If the sample drawn at random is less than 10 % of the population this is usually satisfactory, but if the sample is greater than this, reliable results can be obtained only by replacing each item sampled before drawing the next item at random from the population.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3534-1:1993, *Statistics — Vocabulary and symbols — Part 1: Probability and general statistical terms.*

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 3534-1 and the following definition apply.

3.1 target item: One in which the specified characteristic is found.

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