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STANDARD

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

Interprétation statistique des données — Tests et intervalles de confiance portant sur les proportions



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 11453 was prepared by Technical Committee ISO/TC 69, *Applications of statistical methods*, Subcommittee SC 3, *Application of statistical methods in standardization*.

Annex A forms an integral part of this International Standard. Annexes B and C are for information only.

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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