

Statistical Variables and Characteristics

Name and version: Statistical variables and characteristics

Alternative name(s): Statistical concept, data element, data element concept, property

Valid: Not applicable

Description:

- **Based on ISO/IEC 11179:**

An abstraction of a property of an object or of a set of objects.

- **Based on Neuchâtel Terminology Model PART II: Variables and related concepts object types and their attributes Version 1.0:**

A variable defines the concept of an observation (or measurement) for a given statistical unit type. The variable describes the concept of the observation that the data item results from.

The *conceptual variable* defines the general concept of a variable (e.g. income, employment), independent of its relation to a statistical unit type or its use in a statistical activity. Thus, a conceptual variable is not a variable itself, but a concept from which a variable is derived.

More special definitions can be provided when combining a conceptual variable with a statistical unit type making up a fixed characteristic or an object variable.

- **Based on UN Glossary of Statistical Terms:**

A variable is a characteristic of a unit being observed that may assume more than one of a set of values to which a numerical measure or a category from a classification can be assigned (e.g. income, age, weight, etc. and 'occupation', 'industry', 'disease' etc).

- **Based on Gillman and Johanis (2006):**

Property - observation, used to describe or distinguish an object (e.g., "Dan has blue-gray eyes" means "blue-gray eyes" is the property of Dan. It is abstracted to a characteristic, color of eyes, of people) and **characteristic** - abstraction of a property of a set of objects.

Intended Use:

A number of national statistical organizations are documenting variables (data elements) following the standards described above. They include:

Statistics Canada <http://www.statcan.gc.ca/concepts/definitions/index-eng.htm>
Statistics Portugal <http://metaweb.ine.pt/sim/variaveis/pesquisasimples.aspx?ID=EN>
Statistics Norway <http://www.ssb.no/english/metadata/definitions/variables/main.html>
Statistics Sweden
Eurostat http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/a_to_z

Statistics Canada is using ISO/IEC 11179 to document data elements, or variables. To document variables, the object class (statistical unit or unit of observation), the property, and the value domain (statistical classification) are specified, named, and defined. Each of these components can stand on its own and is reusable in the construction of other data elements.

Consider the variable named "**type of expenses of business location**" as an example. It is analyzed as follows:

- "Expenses" refer to decreases in economic benefits or service potential, during the reporting period, in the form of outflows or consumption of assets or incurrence of liabilities that result in decreases in equity, other than those relating to distributions to owners. "Expenses" is the name of a property.
- "Business location" refers to a statistical unit defined as a producing unit at a single geographical location from which economic activity is conducted and for which, at a minimum, employment data are available. "Business location" is the name of an object class.
- "Type" refers to the reporting of "Expenses of Business Location" using the classification called Expense Categories, Annual Survey of Manufactures (ASM). "Type" is a representation term, naming the kind of value domain.

Maintenance organization: Not applicable

ISO Standard Number: ISO/IEC FDIS 11179-1 "Information technology - Metadata registries - Part 1: Framework", March 2004

References:

SDMX Metadata Common Vocabulary http://sdmx.org/?page_id=11

Neuchâtel Models - Variables <http://www1.unece.org/stat/platform/download/attachments/14319930/Neuchatel+Model+V1.pdf?version=1>

Relationships to other standards: [Concept Map](#)

There exist a number of terminologies and glossaries dealing with terms and concepts associated with variables. ISO/IEC 11179 is one of the most closely related metamodels. The ISO/IEC 11179 metamodel (11179-MM) and the Terminology Model for Variables (TMV) touch on similar statistical metadata areas, but from different perspectives. The ISO 11179 is a general description of data, independent of the subject area. It also supports registration, a methodology for administering content including its quality. The TMV, on the other hand, describes and classifies statistical data. Because its context is statistics, the TMV contains concepts and terminology familiar to statisticians.

Combining the administrative components of ISO/IEC 11179 with the detailed, statistics specific, content definition of TMV provides the basis for a standards-conformant statistical metadata registry. This covers both registration aspects and rich content definitions for statistical offices.

In view of the close relationship between TMV and 11179-MM, the vocabulary of the TMV has been adapted as much as possible from that of 11179-MM. As the vocabulary of the latter is in turn based on that of ISO 1087-1 [ref. 3], it can be said that the vocabulary of the TMV complies with ISO norms. (Accessed from: Neuchâtel Terminology Model PART II: Variables and related concepts object types and their attributes Version 1.0)

Language: Not applicable

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