

# StanDat Codebook

## International Standards Database

Solveig Bjørkholt

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## The International Standards Database

The International Standards Database (StanDat) consists of several datasets that covers several aspects of the landscape of international standards. Specifically, the database is designed to answer questions relating to the *process*, the *endorsement* and the *outcome* of standards. The database is based on data from the International Standardization Organization. Although there are many standardization organizations, ISO is the largest on the international arena. For more information on ISO, visit [www.iso.org](http://www.iso.org).

The database is categorized into ‘Standards’, ‘Participation’, ‘Historical’ and ‘Certifications’, each category with 2-3 datasets.

Category	Time series	Description	Source and method	Comments
Standards	1947 - 2023	Data on specific standards, including which technical committee that developed them, the life cycle of their production, year they were published, edition, number of pages, whether they have been withdrawn, abstract, sustainability goals and ICS code.	www.iso.org. With sublinks to every standard. Collected through webscraping using rvest.	The data has been subject to significant amounts of data cleaning.
Participation	2002/4 - 2023	Data on the actors that participate in producing standards (i.e. in technical committees). There is one dataset on the countries (i.e. national member bodies) and one on the organizations in liaison.	Wayback Machine. Collected through webscraping using wayback, rvest and httr.	Because there is only a selection of snapshots of webpages in the archive, the data is incomplete. Imputation methods based on the collected data replaces for some of the missing values. The cells that have been imputed are indicated. The categorization of liaison organizations was made using ChatGPT. The data has been subject to significant amounts of data cleaning.
Historical	1947 - 2015	Data on the historical development of ISO. One dataset includes membership in ISO over time, including type of membership and function of membership. One dataset shows when different technical committees were established.	Membership parsed from pdf. TC establishment scraped from iso.org and missing categories were categorized using ChatGPT.	The data has been subject to moderate amounts of data cleaning.
Certifications	1993 – 2020, but varies depending on ISO series.	Data on certifications of ISO standards. This includes data on the year of the survey, number of certificated provided by accredited certification bodies per country, industry and ISO standard series. The ISO Survey covers a selection of the ISO standard series. An overview of coverage and time series per coverage is given below.	The ISO Survey. The survey data is parsed from excel files.	From ISO: 'Every year we perform a survey of certifications to our management system standards. The survey shows the number of valid certificates to ISO management standards (such as ISO 9001 and ISO 14001) reported for each country, each year. [...] The ISO Survey is not a database. The providers of the data are the certification bodies accredited by IAF members and they participate on a voluntary basis. The level of participation fluctuates from one edition of the survey to another and can impact the survey results especially at the country level. Interpretations of the results and any conclusions on the trends should be made with these considerations in mind. The data has been subject to moderate amounts of data cleaning.

## Standards

These datasets have standards as units, and gives information on when standards were published, the status of the standard, how large they are (in pages), which edition the standard is on, their International Classification for Standards code (ICS) (see <https://www.iso.org/standards-catalogue/browse-by-ics.html>), abstracts, sustainable development goals that the standard fulfills, and the life cycle of the standard.

### Status

Variable	Definition
stdno	Standard number
year	Year the standard was published (standards under development are NA)
title	Name of TC the standard was developed within
committee	ID of the TC the standard was developed within
status	If the standard is withdrawn, deleted, developing or published
publication_date	When the standard was published (if published)
edition	The edition of the standard
pages	Number of pages of the standard
abstract	Abstract of the contents of the standard
ics_name	Name of the ICS code the standard is categorized into (can be more than one)
ics_id	ID for the ICS code the standard is categorized into (can be more than one)
link	Link to the webpage where the information was scraped

### SDGs

This dataset shows the **sustainable development goals** (SDGs) that each standard is reported to address (if any).

Variable	Definition
stdno	Standard number
year	Year the standard was published (standards under development are NA)
title	Name of TC the standard was developed within
committee	ID of the TC the standard was developed within
sgd_number	Number of the sustainability goal that ISO reports the standard to contribute to (if any).

sdg_text	Name of the sustainability goal that ISO reports the standard to contribute to (if any).
link	Link to the webpage where the information was scraped

## Life cycle

Process of stages for standard, as given by <https://www.iso.org/stage-codes.html> . The units of observation in this dataset is a life cycle stage for a given standard.

Variable	Definition
stdno	Standard number
year	Year the standard was published (standards under development are NA)
title	Name of TC the standard was developed within
committee	ID of the TC the standard was developed within
life_stage	The stage reported in the life cycle of a given standard
life_stage_code	The code of the stage reported in the life cycle of a given standard
date	Date that the standard was at this life cycle stage
link	Link to the webpage the data was collected from

## Participation

These datasets include information on the actors that participate in the production of standards. Standards are produced in various technical committees (TC) that are established based on demand from stakeholders, and proposed by national member bodies. To establish a technical committee, a member body sends a proposal which is then circulated among the other ISO members. At least five other member bodies have to vote in favor for the TC to be established. Those in favor take the role of P-members, and usually, the country responsible for the proposal takes the secretariat. Proposal drafts are often, in the first place, requests from other national actors.

### Countries (member bodies)

Coverage: 2004 - 2023

There are three member categories – full member, correspondent member and subscriber member. Only full members can become P-members (participating members) in TCs, and only P-members are able to participate actively in the technical work of the committee. Observing members are allowed to follow the process but are not able to participate.

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Variable	Definition
country	Country name
sdo	Name of main standardization developing organization in the country
year	Year of membership
committee	Number of the TC the country participates in
title	Name of the TC the country participates in
membership	Type of membership, either participating (P-member), observing (O-member), secretariat or twinned secretariat
standby	Whether the TC was set to standby in the given year
impute	Whether memberships were imputed from the previous year
sector	The sector that ISO categorizes the TC into

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### Organizations (liaison)

Coverage: 2002 - 2023

Among organizations in liaison, there are four member categories, A, B, C and D, depending on how involved the organizations are in the standardization process.

Using the acronym is more reliable than using the name, as the name has been more often subject to change as webpages change.

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Variable	Definition
acronym	Organization's acronym
name	Name of organization
year	Year of liaison
country	Country where the organization is located (fetched from address)
category	Category of the organization of either industry, consultant and registrar, standards organization, government, research, NGO, financial institutions, media, intergovernmental organizations or other
category_text	Category given in text
description	Description of given category
justification	Justification from ChatGPT of why the given organization fits into the given category
committee	Number of the committee that the organization was in liaison with
title	Name of the committee that the organization was in liaison with
type	Type of liaison for the given organization
impute	Whether the membership in given committee was imputed using k-nearest neighbor methods
sector	The sector that ISO categorizes the TC into

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## Historical

These datasets show the development of the International Standardization Organization over time in terms of members and technical committees.

### Members

Shows membership in ISO over time. There are three types of membership; Participating member, Correspondent member and Subscriber member. Only P-members can participate actively in technical committees.

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Variable	Definition
year	Year
country	Country
continent	Continent of country
membership_status	Which membership status the country had in the given year. U = No membership, M = membership, C = Correspondent member, S = Subscriber member.
membership_role	If there were any particular changes to the membership in the given year. with = Withdrawn, sus = Suspended, council = Council.

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### Technical committees

Technical committees have been established throughout ISO's history. This dataset includes some unknown missings, as some TCs have been established and then disbanded.

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Variable	Definition
year	Year of establishment
title	Name of committee
committee	ID of committee
sector	The sector that ISO categorizes the TC into

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## Certifications

The ISO Survey of Certifications is an annual survey of the number of valid certificates to ISO management system standards worldwide. The providers of data are the certification bodies accredited by the IAF MLA Members.

**Disclaimer:** The ISO Survey is not a database. The providers of the data are the certification bodies accredited by IAF members and they participate on a voluntary basis. The level of participation fluctuates from one edition of the survey to another and can impact the survey results especially at the country level. Interpretations of the results and any conclusions on the trends should be made with these considerations in mind.

### Survey coverage for all datasets

Number of standard family	Name of standard family	Country coverage	Industry coverage
ISO 9001	Quality management systems	1993-2020	1998-2020
ISO 14000	Environmental management	1999-2020	1998-2020
ISO/IEC 27001	Information security management	2006-2020	2006-2020
ISO 50001	Energy management	2011-2020	2015-2020
ISO 22000	Food safety management	2007-2020	–
ISO 13485	Medical devices - Quality management systems	2004-2020	–
ISO 22301	Security and resilience	2014-2020	2014-2020
ISO/IEC 20000-1	Information technology	2015-2020	2015-2020
ISO 28000	Specification for security management systems for supply chains	2016-2020	2016-2020
ISO 39001	Road traffic safety (RTS) management systems	2016-2020	2016-2020

### Country certifications

Variable	Definition
country	Country name
year	Year of survey

certificates	Number of certificates as provided by accredited certification bodies in the ISO Survey
iso	Code of ISO management standards series
iso_name	Name of ISO management standards series

### Industry certifications

Variable	Definition
industry	Aggregate industry level
year	Year of survey
certificates	Number of certificates as provided by accredited certification bodies in the ISO Survey
iso	Code of ISO management standards series
iso_name	Name of ISO management standards series

### Country and industry certifications

Variable	Definition
country	Country name
year	Year of survey
industry	Aggregate industry level
ISO 9001	Number of certificates within the ISO 9001 series
ISO 14001	Number of certificates within the ISO 9001 series
ISO/IEC 27001	Number of certificates within the ISO/IEC 27001 series