

BUSINESS INNOVATION 2018

NATIONAL REFERENCE METADATA IN SINGLE INTEGRATED METADATA STRUCTURE (SIMS)

CONCEPT 1 – CONTACT

Sub-Concept 1.1: Contact organisation

National Statistics Office (NSO) - Malta

Sub-Concept 1.2: Contact organisation unit

Unit B4: Business Registers, Directorate B – Business Statistics

Sub-Concept 1.3: Contact name

Ms. Christianne Micallef

Sub-Concept 1.4: Contact person function

Head of Unit

Sub-Concept 1.5: Contact mail address

National Statistics Office (NSO),
Lascaris, Valletta VLT 2000, Malta.

Sub-Concept 1.6: Contact e-mail address

christianne.micallef@gov.mt

Sub-Concept 1.7: Contact phone number

+356 2599 7353

CONCEPT 2 – METADATA UPDATE

Sub-Concept 2.1: Metadata last certified

22nd February 2021

Sub-Concept 2.2: Metadata last posted

29th March 2021

Sub-Concept 2.3: Metadata last update

29th March 2021

CONCEPT 3 – STATISTICAL PRESENTATION

Sub-Concept 3.1: Data description

The Community Innovation Survey (CIS) is a survey about innovation activities in enterprises. The survey is designed to collect the information on different types of innovation, various aspects of the development of an innovation, objectives of innovation activities, sources of information, public funding or expenditure on innovation. Its aim is to measure the innovativeness of sectors and enable the analysis of the factors of innovation.

The CIS provides statistics by type of innovators, economic activities and size class of enterprises. The survey is currently carried out every two years across the EU Member States, EFTA countries and EU candidate countries.

In order to ensure comparability across countries, Eurostat together with the countries developed a Harmonised Data Collection (HDC) questionnaire accompanied by a set of definitions and methodological recommendations.

CIS 2018 concepts and its underlying methodology are based on the Oslo Manual (2018) 4th Edition.

Sub-Concept 3.2: Classification system

Classification is according to [NACE Rev.2](#)

Sub-Concept 3.3: Sector coverage

Data for this study is collected through a census of enterprises employing 10 or more persons. Size classes are based on the number of employees: 10-49 employees, 50-249 employees, 250+ employees.

NACE Rev. 2 Sections A to N are covered by the CIS.

Sub-Concept 3.4: Statistical concepts and definitions

Variables follow the methodology of the [Oslo Manual](#). The questionnaire is structured on the Harmonised version provided by Eurostat.

Sub-Concept 3.5: Statistical unit

The statistical unit is the enterprise.

Sub-Concept 3.6: Statistical population

The target statistical population of the CIS is a census of enterprises employing 10 people or more.

Sub-Concept 3.7: Reference area

Malta and Gozo (NUTS 1 and 2)

Sub-Concept 3.8: Time coverage

The CIS survey has been conducted at a two-year interval, covering a three-year period (for CIS 2018, the time periods covered by the data are 2016 - 2018).

Sub-Concept 3.9: Base period

Not applicable.

CONCEPT 4 – UNIT OF MEASURE

CIS indicators are available according to 3 units of measure:

NR: Number for number of enterprises and number of persons employed.

THS_EUR: Thousands of euros. All financial variables are provided in thousands of euros, i.e. Turnover or Innovation expenditure.

PC: Percentage. The percentage is the ratio between the selected combinations of indicators.

CONCEPT 5 – REFERENCE PERIOD

A three-year period (beginning of 2016 to the end of 2018) for the majority of questions. Expenditure figures and percentages refer to one year only (2018). Employment and turnover figures are specified for 2016 and 2018.

CONCEPT 6 – INSTITUTIONAL MANDATE

Sub-Concept 6.1: Legal acts and other agreements

[The Malta Statistics Authority Act, 2000.](#) The Act empowers the NSO to collect, compile, extract and release official statistics related to demographic, social, environment, economic and general activities and conditions of Malta.

The CIS follows the methodology established within EC Regulation 995/2012 (<https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:299:0018:0030:EN:PDF>) concerning the production and development of Community Statistics on Science and Technology.

Sub-Concept 6.2: Data sharing

Confidential information is protected and not disclosed. CIS data in aggregate form are shared with Eurostat and treated for confidentiality.

CONCEPT 7 – CONFIDENTIALITY

Sub-Concept 7.1: Confidentiality – Policy

At National level:

The NSO requests information for the compilation of official statistics according to the articles of the [MSA Act – Cap. 422](#) and the [Data Protection Act – Cap. 586](#) of the Laws of Malta implementing the General Data Protection Regulations (GDPR).

Article 40 of the MSA Act stipulates the restrictions on the use of information while Article 41 stipulates the prohibition of disclosure of information. Furthermore, Section IX of the Act (Offences and Penalties) lays down the measures to be taken in case of unlawful exercise of any officer of statistics regarding confidentiality of data.

Since its inception, the NSO has always assured that all data collected remains confidential and that it is used for statistical purposes only according to the articles and derogations stipulated in the laws quoted above. The Office is obliged to protect the identify of data providers and refrain from divulging any data to third parties that might lead to the identification of persons or entities.

During 2009, the NSO has set up a Statistical Disclosure Committee to ensure that statistical confidentiality is observed, especially when requests for microdata are received.

Upon employment, all NSO employees are informed of the rules and duties pertaining to confidential information and its treatment. In line with stipulations of the MSA Act, before commencing work, every employee is required to take an oath of secrecy whose text is included in the same Act.

An internal policy on anonymisation and pseudo-anonymisation is in place to ascertain that adequate methods are used for the protection of data which the office collects and shares with the public in its capacity as the National Statistics Office. The policy is meant to safeguard confidentiality of both personal and business data entrusted to the NSO. The document provides guidance for all NSO employees who process data on a daily basis as to how anonymisation and pseudo-anonymisation methods should be applied. The policy applies to all confidential, restricted and internal information, regardless of form (paper or electronic documents, applications and databases) that is received, processed, stored and disseminated by the NSO.

At European level:

[Regulation \(EC\) No 223/2009](#) on European statistics (recital 24 and Article 20(4) of 11 March 2009 (OJ L 87, p. 164), stipulates the need to establish common principles and guidelines ensuring the confidentiality of data used for the production of European statistics and the access to those confidential data with due account for technical developments and the requirements of users in a democratic society.

Sub-Concept 7.2: Confidentiality – Data Treatment

Aggregate data are flagged as primary confidential if at least one of the following criteria is satisfied:

1. The number of units contributing to a cell value is less than 3.
2. There are a number of dominant contributors to a cell value, i.e. the level of contribution of a pre-defined number of entities exceeds a certain percentage.

Secondary confidentiality is also catered for so that primary confidential cells cannot be disclosed.

CIS microdata shared with Eurostat is done in an anonymised form, following a number of rules established by Eurostat. These rules, consider:

- the degree of cells with minimum frequency count when considering combinations of NACE and employment size classes;
- growth ratios; and
- turnover thresholds.

CONCEPT 8 – RELEASE POLICY

Sub-Concept 8.1: Release Calendar

An advance release calendar is maintained by the NSO and published on the NSO website. The calendar projects three months of news releases (including the current and two subsequent months).

Sub-Concept 8.2: Release Calendar access

The News Release calendar is published on the official website of NSO:

https://nso.gov.mt/en/News_Releases/Release_Calendar/Pages/News-Release-Calendar.aspx

Sub-Concept 8.3: User access

An internal policy on dissemination is in place to govern the dissemination of official statistics in an impartial, independent and timely manner, making them available simultaneously to all users. The NSO's primary channel for the dissemination of official statistics is the NSO website. Tailored requests for statistical information may also be submitted through the said website. The Office also

makes use of social media venues as a platform to communicate with its users and to present its output. The public is free to use, copy and quote the information published provided that the NSO is quoted as the source.

CONCEPT 9 – FREQUENCY OF DISSEMINATION

Biennial.

CONCEPT 10 – ACCESSIBILITY AND CLARITY

Sub-Concept 10.1: News release

The CIS news release is published every two years. The latest release covers 2016 – 2018 three year period and can be accessed through the following link:

https://nso.gov.mt/en/News_Releases/View_by_Unit/Unit_B4/Business_Registers/Pages/Business-Innovation.aspx

Sub-Concept 10.2: Publications

Not applicable.

Sub-Concept 10.3: Online Database

The link for the Innovation Database may be found here:

<https://ec.europa.eu/eurostat/data/database>

The following path needs to be followed to access the database - Database by themes; Science and Technology; Community Innovation Survey (CIS)

Sub-Concept 10.4: Micro-data access

Not applicable.

Sub-Concept 10.5: Other

Adhoc requests may be supplied through the NSO website at: <http://nso.gov.mt/en/Pages/NSO-Home.aspx> or directly through: <https://nso.gov.mt/en/Services/Pages/Request-for-Information.aspx>

Sub-Concept 10.6: Documentation on methodology

The methodology established for CIS data are documented within EC Regulation 995/2012 (<https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:299:0018:0030:EN:PDF>), concerning the production and development of Community Statistics on Science and Technology.

Documentation on methodology at national level can be accessed at: <https://metadata.nso.gov.mt/reports.aspx?id=25>

Sub-Concept 10.6.1: Metadata completeness rate

Information about all required metadata concepts (and sub-concepts thereof) are provided.

Sub-Concept 10.7: Quality Documentation

Dedicated SIMS reports are available to the public on the [NSO's metadata website including concepts related to metadata and quality](#).

In addition, a quality report is produced every two years and sent to Eurostat.

CONCEPT 11 – QUALITY MANAGEMENT

Sub-Concept 11.1: Quality Assurance

The NSO ensures the accuracy of data released to the public and prepares clear methodological notes which explain the processes involved in the collection and production of official statistics.

The NSO has developed an internal Quality Management Framework (QMF) which is built on common requirements of the ESS Code of Practice (ESS CoP). A document was prepared to include a set of general quality guidelines spanning over all statistical domains. Assuring methodological soundness is an integral part of the QMF, nonetheless, the document spans also on other areas related to institutional aspects.

Every five to seven years, the NSO participates in a Peer Review exercise through which the compliance of its operations with principles of the ESS CoP is assessed by an expert team. Peer Reviews are indeed part of the European Statistical System (ESS) strategy to implement the ESS CoP. Each NSI is expected to provide information as requested by a standard self-assessment questionnaire. Following this an expert team visits the office to meet NSI representatives and main stakeholders. Peer Reviews result in a compliance report and the listing of a set of Improvement Actions which need to be followed up by the NSI. The next round of Peer Reviews is planned to be carried out in 2022.

Sub-Concept 11.2: Quality Assessment

The CIS survey follows the methodology established within EC Regulation 995/2012 concerning the production and development of Community Statistics on Science and Technology. Comparability of data with previous years based on the same methodology is the main assessment for quality.

CONCEPT 12 – RELEVANCE

Sub-Concept 12.1: User needs

Users include the European Commission (for the European Innovation Scoreboard); the Malta Council for Science and Technology, the Malta Enterprise (to satisfy international requirements and produce National Policy); researchers, students, enterprises and businesses.

Sub-Concept 12.2: User satisfaction

The last User Satisfaction Survey was held in 2014 with the aim to collect information about key users' satisfaction with statistical output.

The NSO keeps record of the number of News Releases and publications disseminated on its website; the users to whom statistical products are provided; as well as the number of requests that are processed every year.

News Releases and tailor-made statistical outputs were assessed on account of their quality, timeliness, and on their ability to meet users' needs.

Sub-Concept 12.3: Data Completeness

The data are 100% complete since all requested data are provided.

CONCEPT 13 – ACCURACY AND RELIABILITY

Sub-Concept 13.1: Overall accuracy

The CIS questionnaire is inbuilt with a number of compulsory questions related to innovation type. The survey is sent by post to a census of companies employing ten or more employees. All questionnaires are vetted to ensure that the logic of the questionnaire is followed.

The application used for the CIS survey's data entry also contains validation checks. Furthermore, should the CIS survey reveal that Research and Development took place, the enterprise would need to respond to another survey entitled 'Research and Development Survey', to which later, values from both surveys are cross checked. Furthermore, turnover and employment figures are cross checked with the Statistical Business Register. Moreover, the data of the year in question is compared to the previous survey data for consistency. Enterprises are contacted by telephone or email in the event of any queries.

In view of these quality checks, CIS data can be considered of good quality.

Sub-Concept 13.2: Sampling errors

Not applicable as the survey is based on a census of companies.

Sub-Concept 13.3: Non-sampling errors

Information about specific sources of non-sampling error is included in the relevant sub concepts of 13.3.

Sub-Concept 13.3.1: Coverage error

The target population for this survey is selected from the Statistical Business Register. Coverage errors may arise due to inaccurate information recorded in the sampling frame, namely closures, inactive enterprises and changes in the employment size class which may result in a company to feature while having less than 10 employees.

Sub-Concept 13.3.1.1: Over Coverage

Over coverage rate is 9.5%. Errors may arise due to changes in employment size class (having less than 10 employees), inactive enterprises and closures.

Sub-Concept 13.3.1.2: Common Units Proportion

Not applicable as no administrative data sources are used.

Sub-Concept 13.3.2: Measurement error

Data are collected via post and through email while vetting is done by trained and experienced NSO staff. Data inputting software contains validation checks catering for the logic of the questionnaire to ensure that measurement errors are minimal.

Sub-Concept 13.3.3: Non-response error

Attempts to keep non-response errors at a minimum consist of the use of reminders/recalls to enterprises. As recommended in the survey guidelines, three reminder letters are sent to the remaining non-respondents. Following the second reminder, interviewers contacted the enterprises. The larger enterprises are re-contacted by phone or e-mail in order to remind them to fill in and deliver the survey questionnaire.

Sub-Concept 13.3.3.1: Unit non-response

Unit non-response rate is 25%. Certain enterprises might consider the survey as not applicable for them especially if they have a few employees in their books. Additionally, such enterprises might consider this survey as time consuming due to its length.

Sub-Concept 13.3.3.2: Item non-response

Item non-response is usually tackled immediately with the respondents through telephone calls or e-mail. Some respondents left the new question relating to the total expenditure of the enterprise for year 2018 empty. They were contacted later during the year when such information was available. When figures were still not tackled by the respondent, administrative data was used for expenditure figures relating to this question. Mainly the turnover and employment figures if left empty are taken from the Statistical Business Register directly. Eventually all population is checked with the BR for consistency.

Sub-Concept 13.3.4: Processing error

Following the collection of data, a series of steps are followed to process the data and reduce processing errors.

1. Questionnaires are individually vetted in order to capture incorrect or missing information. Should any information result to be missing or unclear, enterprises are contacted individually for clarification.
2. Data are entered through an application program set up by the NSO's IT unit. Data editing is facilitated by means of auto validations within the same application. Such validations ensure that the logic of the questionnaire is met.
3. Data are then compared to previous years to ensure a reasonable smooth series of data. Any apparent fluctuations are looked into and enterprises are contacted individually to justify and/or correct any misunderstandings.

Sub-Concept 13.3.5: Model assumption error

Not applicable since no model is assumed.

CONCEPT 14 – TIMELINESS AND PUNCTUALITY

Sub-Concept 14.1: Timeliness

Data are delivered within 18 months after the reference period. The corresponding news release was published on time.

Sub-Concept 14.2: Punctuality

Data are delivered on time.

CONCEPT 15 – COHERENCE AND COMPARABILITY

Sub-Concept 15.1: Comparability – Geographical

Data are comparable between all EU member states.

Sub-Concept 15.2: Comparability – Over Time

Due to important methodological changes in CIS 2018 driven by Oslo Manual 2018, the data 2018 cannot be directly compared with previous CIS waves.

Sub-Concept 15.3: Coherence – Cross Domain

No other related statistical outputs, or administrative or external sources exist.

Sub-Concept 15.3.1: Coherence – Sub-Annual and Annual statistics

Not applicable.

Sub-Concept 15.3.2: Coherence – National Accounts

Not applicable.

Sub-Concept 15.4: Coherence – Internal

CIS data are coherent with R&D data. One question in the CIS asks for the expenditure of intramural R&D and this is cross checked with the Research and Development Survey.

CONCEPT 16 – COST AND BURDEN

The costs associated with the collection and production of CIS 2018 data yield a total of €40,000 of which 72% are staff costs, 6% are overheads and 6% are indirect costs.

The time required by innovative enterprises to complete the survey normally takes around 3.5 hours. On the other hand, the burden on non-innovative enterprises in terms of handling time to complete the survey totals to 1 hour.

CONCEPT 17 – DATA REVISION

Sub-Concept 17.1: Data revision – Policy

At the NSO, there is currently no internal policy governing revisions that occur for all statistics produced. Nonetheless, a revisions policy is being drafted to safeguard a coordinated revisions system across statistical domains.

This policy will take account of the need and causes for revisions; time and frequency of revisions; data and other statistical products affected by such revisions; and length of periods revised.

Sub-Concept 17.2: Data revision – Practice and Data Revision

The released data are considered final after the validation process.

CONCEPT 18 – STATISTICAL PROCESSING

Sub-Concept 18.1: Source data

The data are collected by means of a survey. The survey is a census among enterprises employing 10 or more employees and activity classification (NACE Rev. 2).

Sub-Concept 18.2: Frequency of data collection

The current frequency of CIS is biennial.

Sub-Concept 18.3: Data Collection

The data are collected by means of postal survey.
Confidentiality is carried out by the Methodology and Quality Unit.

Sub-Concept 18.4: Data Validation

Once a questionnaire is received, checks are carried out in order to assess if the questionnaire logic is consistent. Should any queries arise, the enterprise is contacted by telephone or email. This process is further validated during data entry by means of various in-built validation rules included in the data entry application. A second round of vetting is later carried out by a statistician, where the data are also compared with that of previous years for consistency.

Sub-Concept 18.5: Data Compilation

Data are compiled through an application designed by the IT unit. Aggregated data requested by Eurostat is extracted through the application in CSV format and then converted to SDMX. Data were delivered to Eurostat in SDMX format for the first time.

Sub-Concept 18.5.1: Imputation

The exact rate with which original collected values are replaced is not available. Upon receipt of questionnaires, enterprises are contacted in case of item non-response, and a reply is sought.

Sub-Concept 18.6: Adjustment

Not applicable.

Sub-Concept 18.6.1: Seasonal Adjustment

Not applicable.

CONCEPT 19 – COMMENT

No further comments.