

Standard SIMS Report:

Community Innovation Survey (CIS)

Single Integrated Metadata Structure (SIMS) Report

For

Community Innovation Survey (CIS)

This documentation applies to the reporting period: **2018 – 2020 inclusive**

Last edited: 10/06/2022



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2 Introduction

The Community Innovation Survey (CIS), also known as Innovation in Irish Enterprises (IIE) is a biennial survey whose primary subject is to collect information regarding innovation statistics in Ireland and other EU Member States.

The survey covers Industry and selected Services sector enterprises with 10 or more persons engaged.

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4 Metadata Update

4.1 Metadata last certified

10/06/2022

4.2 Metadata last posted

18/11/2022

4.3 Metadata last update

10/06/2022



5 Statistical Presentation

5.1 Data Description

The Community Innovation Survey (CIS) is a survey about innovation activities in enterprises. The survey is designed to collect information on different types of innovation, various aspects of the development of an innovation, objectives of innovation activities, sources of information, and 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 latest version of the survey collects information about product and process innovation, as well as organisational and marketing innovations and other key variables during the three-year period 2018-2020 inclusive. Most questions cover new or significantly improved goods or services or the implementation of new or significantly improved processes, logistics or distribution methods.

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.

5.2 Classification System

Indicators related to the enterprises are classified by country, economic activity (NACE Rev. 2), size class of enterprises, NUTS 2 region, and type of innovation.

The main typology of classification of enterprises in reference to innovation is the distinction between innovation-active enterprises (INN) and not innovation-active enterprises (NINN). The enterprise is considered as innovative (INN) if during the reference period it successfully introduced a product or business process innovation, had ongoing innovation activities, abandoned innovation activities, or was engaged in in-house R&D or R&D contracted out. Non-innovative (NINN) enterprises had no innovation activity mentioned above whatsoever during the reference period.

5.3 Sector Coverage

CIS covers main economic sectors according to NACE Rev.2 broken down by size class of enterprises and type of innovation activity.

5.3.1 Main Economic Sectors Covered -NACE Rev 2

In accordance with Commission Regulation 995/2012 on innovation statistics, the following industries and services are included in the core target population. Results are made available with these following breakdowns:

All NACE - Core NACE (NACE Rev. 2 sections & divisions B-C-D-E-46-H-J-K-71-72-73)

CORE INDUSTRY (excluding construction) (NACE Rev. 2 SECTIONS B_C_D_E)

10-12: Manufacture of food products, beverages and tobacco

13-15: Manufacture of textiles, wearing apparel, leather and related products

16-18: Manufacture of wood, paper, printing and reproduction

20: Manufacture of chemicals and chemical products

21: Manufacture of basic pharmaceutical products and pharmaceutical preparations

- 19-22: Manufacture of petroleum, chemical, pharmaceutical, rubber and plastic products
- 23: Manufacture of other non-metallic mineral products
- 24: Manufacture of basic metals
- 25: Manufacture of fabricated metal products, except machinery and equipment

26: Manufacture of computer, electronic and optical products

25-30: Manufacture of fabricated metal products (except machinery and equipment), computer, electronic and optical products, electrical equipment, motor vehicles and other transport equipment



31-33: Manufacture of furniture; jewellery, musical instruments, toys; repair and installation of machinery and equipment

D: ELECTRICITY, GAS, STEAM AND AIR CONDITIONING SUPPLY

E: WATER SUPPLY; SEWERAGE, WASTE MANAGEMENT AND REMEDIATION ACTIVITIES

36: Water collection, treatment and supply37-39: Sewerage, waste management, remediation activities

CORE SERVICES (NACE Rev. 2 sections & divisions 46-H-J-K-71-72-73 (NACE code in the tables = G46-

M73_INN) 46: Wholesale trade, except of motor vehicles and motorcycles

H: TRANSPORTATION AND STORAGE

49-51: Land transport and transport via pipelines, water transport and air transport 52-53: Warehousing and support activities for transportation and postal and courier activities

J: INFORMATION AND COMMUNICATION

58: Publishing activities

61: Telecommunications

62: Computer programming, consultancy and related activities

63: Information service activitiesinn

K: FINANCIAL AND INSURANCE ACTIVITIES

64: Financial service activities, except insurance and pension funding

65: Insurance, reinsurance and pension funding, except compulsory social security

66: Activities auxiliary to financial services and insurance activities

M: PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES

71: Architectural and engineering activities; technical testing and analysis

72: Scientific research and development

73: Advertising and market research

71-73: Architectural and engineering activities; technical testing and analysis; Scientific research and development; Advertising and market research

5.3.1.1 Main Economic Sectors Covered – NACE Rev 2.- National Particularities

None.

5.3.2 Sector Coverage – Size Class

In accordance with Commission Regulation 995/2012 on innovation statistics, the following size classes of enterprises according to number of employees are included in the core target population of the CIS:

- 10 49 employees
- 50 249 employees
- 250 or more employees

5.3.2.1 Sector Coverage – Size Class – National Particularities

No deviations



5.4 Statistical Concepts and definitions

PRODUCT INNOVATION:

The market introduction of a new or a significantly improved good or service with respect to its capabilities, user friendliness, components or sub-systems. The product innovation could either be new to the market or new to the firm.

PROCESS INNOVATION:

The implementation of a new or significantly improved production process, distribution method, or support activity for goods and services. The process innovation could either be new to the market or new to the firm.

NEW TO MARKET INNOVATION:

An innovation activity, which saw the introduction of a new or significantly improved good or service by the firm onto its operating market before other competitors.

NEW TO FIRM INNOVATION:

An innovation activity which saw the introduction of a new or significantly improved good or service to the firm, and which was already available from competitors in the operating sector.

INNOVATION EXPENDITURE:

Spending on activities to support and implement production or process innovations.

ORGANISATIONAL INNOVATION:

The implementation of new or significant changes in firm structure or management methods that are intended to improve your firm's use of knowledge, the quality of your goods and services or the efficiency of work flows.

MARKETING INNOVATION:

The implementation of a new marketing concept or strategy that differs significantly from your enterprise's existing marketing methods and which has not been used before. It requires significant changes in product design or packaging, product placement, product promotion or pricing.

TECHNOLOGICAL INNOVATION:

Technological innovations comprise new products or processes, whether ongoing or abandoned during the survey period.

NON TECHNOLOGICAL INNOVATION:

Non Technological innovations refer to either organisational or marketing innovations.

Further description of concepts, definitions and main statistical variables is available in CIS 2018 European metadata file (ESMS) Results of the community innovation survey 2018 (CIS2018) (inn_cis11) in Eurostat database available at this link <u>https://ec.europa.eu/eurostat/cache/metadata/en/_cis11_esms.htm</u>

5.5 Statistical Unit

The main statistical unit is the enterprise.

5.6 Statistical Population

CIS2020 is conducted under Commission Regulation No 995/2012. This Regulation defines the mandatory target population of the survey referring to enterprises in the Core NACE economic sectors (see section 3.3.) with at least 10 employees. Further activities may be covered on a voluntary basis in national datasets. Most statistics are based on the 3-year reference period (t, t-1, t-2), but some use only one calendar year (t or t-2).

5.7 Reference Area

Results are not broken down by region. The results (at 2-digit NACE level) are available at a national level only.

5.8 Time Coverage

2003-2021 Several rounds of Community Innovation Survey have been conducted so far at two-year interval since end of 90s.

CIS wave	Reference	Participation	Comment Deviation from Reference period
	Period	_	_
CIS2	1994-1996	Yes	Conducted by a different Irish organisation
			called Forfás
CIS3	1998-2000	Yes	Conducted by a different Irish organisation
			called Forfás
CIS Light	2002-2003*	Yes	Conducted by a different Irish organisation
_			called Forfás
CIS4	2002-2004	Yes	Conducted by a different Irish organisation
			called Forfás
CIS 2006	2004-2006	Yes	
CIS 2008	2006-2008	Yes	
CIS 2010	2008-2010	Yes	
CIS 2012	2010-2012	Yes	
CIS 2014	2012-2014	Yes	
CIS 2016	2014-2016	Yes	
CIS 2018	2016-2018	Yes	
CIS 2020	2018-2020	Yes	

5.8.1 Participation in the CIS Waves

*Two reference periods can be distinguished for CIS light: 2002-2002 and 2001-2003

5.9 Base period

Not applicable.

6 Unit of Measure

Results are generally expressed as performing enterprises as a percentage of the enterprise population. In addition, monetary amounts are used to present results related to research and development expenditure.

7 Reference Period

2018 – 2020 inclusive. For CIS 2020, the time covered by the survey is the 3-year period from the beginning of 2018 to the end of 2020 Some questions and indicators refer to one year – 2020.

The list of indicators covering the 3-year period and referring to one year according to the HDC is available in the Annex section of the European metadata (ESMS)

https://ec.europa.eu/eurostat/cache/metadata/en/inn_cis11_esms.htm

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8 Institutional Mandate

8.1 Legal Acts and other agreements

CIS surveys are based on the Commission Regulation No 2019/2152, implementing Decision No 1608/2003/EC of the European Parliament and of the Council on the production and development of Community statistics on science and technology.

This Regulation establishes innovation statistics on a statutory basis and makes the delivery of certain variables compulsory e.g., innovation activities, cooperation, development, expenditures and turnover (see the Regulation). Each survey wave may additionally include further variables.

In addition, the Regulation defines the obligatory cross-coverage of economic sectors and size class of enterprises.

8.1.1 National legislation

A Statutory Instrument is used for each CIS wave. CIS 2018-2020 is carried out under S.I. No. 85/2021 – Statistics (Community Innovation Survey) Order 2021 <u>https://www.irishstatutebook.ie/eli/2021/si/85/made/en/print</u>

8.2 Data Sharing

Not applicable.

9 Confidentiality

9.1 Confidentiality – policy

All information supplied to the CSO is treated as strictly confidential. The Statistics Act, 1993 sets stringent confidentiality standards: Information collected may be used only for statistical purposes, and no details that might be related to an identifiable person or business undertaking may be divulged to any other government department or body.

These national statistical confidentiality provisions are reinforced by the following EU legislation: Council Regulation (EC) No 223/2009 on European statistics for data collected for EU statistical purposes. Further details are outlined in the CSO's Code of Practice on Statistical Confidentiality.

For more information on the CSO confidentiality policy please visit: <u>https://www.cso.ie/en/aboutus/lgdp/csodatapolicies/statisticalconfidentiality/</u>

9.2 Confidentiality - data treatment

In line with Section 33 of the Statistics Act, 1993 all data are treated as strictly confidential. In order to ensure confidentiality, results are produced at NACE sectional level. Appropriate confidentiality checking is run on data and as per the usual CSO requirements.

The three main rules used are:

- 1) fewer than 3 enterprises in a cell
- 2) one enterprise has 80% share
- 3) top two enterprises have 90% share,

We will then make certain cells secondary confidentiality where this is primary confidentiality issues.

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10 Release Policy

10.1 Release Calendar

The date of dissemination of all statistics released by CSO can be found in the Release Calendar published in CSO.ie. This calendar is regularly updated.

10.2 Release calendar access

The release calendar can be accessed via the CSO website, www.cso.ie, or directly from this link: <u>https://www.cso.ie/en/csolatestnews/releasecalendar/</u>

10.3 User access

In accordance with Principle 6 of the European Statistics Code of Practice all users of CSO statistics have equal access via the CSO website at the same time of 11 am. Any privileged pre-release access to any outside user is limited, controlled and publicised. In the event that leaks occur, pre-release arrangements are revised so as to ensure impartiality.

The CSO recognises that in very limited circumstances a business need for pre-release access may be substantiated. Any form of pre-release access is a privilege and a strict CSO pre-release access policy is adhered to for these special requests. The full pre-release access policy can be accessed at https://www.cso.ie/en/aboutus/lgdp/csodatapolicies/csopolicyonpre-releaseaccess/

The various results are published nationally in statistical release format as well as on the CSO website (www.cso.ie). Selected extracts from the results are posted on the CSO's data dissemination database, PxStat.

11 Frequency of Dissemination

CIS is conducted and disseminated at two-year interval in pair even years.

12 Accessibility and clarity

12.1 News release

There is no news release associated with Community Innovation Survey.

12.1.1	Availability o	f the releases
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Dissemination and access	Availability	Comments, links,	
Press release	No press release for CIS 2016-2018	n/a	
Access to public free of charge	Yes	https://www.cso.ie/en/releasesandpublications/er/iie /innovationinirishenterprises2018/	
Access to public restricted (membership/pass word/part of data provided, etc)	Research Microdata Files for approved users	https://www.cso.ie/en/aboutus/lgdp/csodatapolicies/d ataforresearchers/rmfapplicationprocedure/	

12.2 Publications

The published release can be found in the CSO website or directly from this link <u>https://www.cso.ie/en/statistics/multisectoral/innovationinirishenterprises/</u>

12.3 On-line database

The data tables associated to this release can be found in the CSO's dissemination database PxStat. They are available directly from these links.

- Innovation in Irish Enterprises NACE Sector https://data.cso.ie/product/iiens
- Innovation in Irish Enterprises Persons Engaged <u>https://data.cso.ie/product/IIEPE</u>
- Innovation in Irish Enterprises Nationality of Ownership <u>https://data.cso.ie/product/iieno</u>

12.3.1 AC 1. Data tables - consultations

Not calculated.

12.4 Micro-data Access

Microdata access is available and researchers can apply using the following guidelines <u>https://www.cso.ie/en/aboutus/lgdp/csodatapolicies/dataforresearchers/rmfapplicationprocedure/</u>

12.4.1 Dissemination of Microdata

Mean of Dissemination	Availability	Comments, Links
	01 Microdoto	
	Microuata	
Eurostat SAFE Centre		
National SAFE Centre		
Eurostat: Partially		
Anonymised data		
National: Partially	Yes	https://www.cso.ie/en/aboutus/lgdp/csodatapolicies/dataforresearchers
Anonymised data		

12.5 Other

Specific user requests are acceded to where possible, and where confidentiality issues do not arise.

Data which is submitted to Eurostat can be viewed at: <u>https://ec.europa.eu/eurostat/web/science%ED%AF%80%ED%BD%B2technology%ED%AF%80%ED%BD%B2in</u> <u>novation/data/database</u>

12.5.1 AC2. Metadata consultations

Not calculated.

12.6 Documentation on Methodology

CIS 2018 concepts and its underlying methodology are based on the Oslo Manual (2018) 4th Edition <u>https://www.oecd.org/science/oslo-manual-2018-9789264304604-en.htm</u>

Further information on the methodology that applies to this release can be found in the CSO's methods page:

https://www.cso.ie/en/methods/scienceandtechnology/innovationinirishenterprisesformerlyknownasco mmunityinnovationsurvey/

12.6.1 AC3 – Metadata completeness – rate

Not calculated.

12.7 Quality Documentation

Further information on the quality documentation associated with this output can be found on the Methods page in cso.ie

https://www.cso.ie/en/methods/scienceandtechnology/innovationinirishenterprisesformerlyknownasco mmunityinnovationsurvey/

13 Quality Management

13.1 Quality Assurance

Quality Management Framework

The CSO avails of an office wide Quality Management Framework (QMF). This framework allows all CSO processes and outputs to meet the required standard as set out in the European Statistics Code of Practice (ESCOP). The QMF foundations are based on establishing the UNECE's Generic Statistical Business Process Model (GSBPM) as the operating statistical production model to achieve a standardised approach to Quality Management. All and any changes implemented to CSO processes and outputs require adherence to the QMF.

13.2 Quality Assessment

Coefficient of variation (%) for key variables by NACE categories and for enterprises with 10 and more H

NACE	Size class	(1)	(2)	(3)
Core NACE (B-C-D-E-46- H-J-K-71-72-73)	Total	0.011447	0.277592	0.017885
Core industry (B_C_D_E - excluding construction)	Total	0.013749	0.356316	0.023993
Core Services (46-H-J- K-71-72-73)	Total	0.016941	0.255821	0.025920

[1] = Coefficient of variation for the percentage of innovative enterprises (INN) in the total population of enterprises (ENT20)

[2] = Coefficient of variation for the turnover of product innovative enterprises with new or improved products (TUR_PRD_NEW_MKT), as a percentage of total turnover of product innovative enterprises [TUR20,INNO_PRD].

[3] = Coefficient of variation for percentage of product and/or process innovative enterprises (incl. enterprises with abandoned and or on-going activities) involved in any innovation co-operation arrangement [COOP_ALL,INN], as a percentage of innovative enterprises (INN).

14 Relevance

14.1 User Needs

In the National Statistics Board Strategy for Statistics 2003- 2008, the Boards articulated a medium-term strategy to support the development of Ireland's statistical system. In particular, the Board in conjunction with a CSO Expert Group produced a 'Policy Needs for Statistical Data on Enterprises' report in November 2005.



This report included a specific recommendation (recommendation 13) that the Community Innovation Survey should be jointly conducted by the CSO and Forfás. The 5th (2004-2006), 6th (2006-2008) and 7th (2008-2010) editions of the survey were thus jointly conducted by CSO/Forfás. Since the 8th (2010-2012) edition, the CSO now solely conducts the CIS.

Results are primarily used to inform policy makers with regard to data on innovation indicators.

14.1.1 Main National Users

- Department of Jobs, Business and Innovation (formerly Forfás)
- Other Departments
- Other agencies and interest groups
- General public

14.1.2 Principal External Users

• Eurostat

14.1.3 Needs at National Level

User Group	Short Description of user group	Main Needs For CIS data of the User Group Users' needs
Social Actors	An enterprise statistics liaison group (ESLG) An annual meeting with key stakeholders to allow for feedback	Researchers department need to update innovation Data

14.2 User Satisfaction

No user satisfaction survey was conducted.

14.3 Data Completeness

There are no data completeness issues. Data for all compulsory variables are collected and transmitted to Eurostat.

14.3.1 Data Completeness rate

100%

15 Accuracy and reliability

15.1 Overall accuracy

Response rate and non-response bias are factors that can impact overall data accuracy. Responses from large enterprises can have a major impact on grossing and reported figures, and survey non-response can cause a high degree of variability over time.



15.2 Sampling Error

A representative sample is taken of all enterprises with 10 to 49 persons engaged and a full census of enterprises with 50+ persons engaged is also taken. Some editing of the sample takes place to remove duplicates or enterprises that have ceased trading.

Eurostat determines the target population. The core NACE categories generally remain consistent across each survey. Every effort is made to ensure that there are a sufficient number of responses in each cell to be representative of the sample and to ensure that confidentiality is maintained.

15.2.1 A1. Sampling error indicator

The main indicator used to measure sampling errors for CIS data is the coefficient of variation (CV).

15.2.2 Variance Estimation Method

The formula used to calculate the variances is:

Coefficient of Variation= (Square root of the estimate of the sampling variance) / (Estimated value)

15.3 Non-sampling Error

Non sampling errors for this release arise mainly from register coverage issues, measurement errors and non-response. Details on each of those are specified below.

15.3.1 Coverage error

The Central Business Register in CSO is used as the frame for sampling. There may be some multiple listings (duplicates) and ceased companies when the sample is first selected. They are removed from the sample when discovered.

15.3.1.1 A2. Over coverage rate

Not calculated.

15.3.1.2 A3. Common units – proportion

Not calculated.

15.3.1.3 Under covered groups of the target population

Not detected.

15.3.1.4 Coverage errors in coefficient variation

Not calculated

15.3.2 Measurement error

Measurement Error is not formally calculated for the survey.



15.3.2.1 Measures for reducing measurement errors

Even though these errors are not calculated, CSO takes a number of steps to reduce any such errors

- a) Questionnaire we ensure that the questionnaire is clear with definitions provided where appropriate. The majority of questions are tick box style questions which makes the form easier to complete.
- b) Data collection method there is only 1 data collection method: by electronic questionnaire (eQ). This method is unlikely of itself to be a source of measurement error and because of validations which are part of the e-form, this method of return is likely to reduce potential errors
- c) Respondent survey data can contain sensitive and confidential information. The form makes reference to Section 33 of the Statistics Act, 1993 guaranteeing the confidentiality of all data returned to ensure that respondents are not reluctant to provide accurate information.
- d) Where monetary values are returned for In-house R&D expenditure in the CIS, comparison is made to the estimated in-house expenditure returned in the previous Business Expenditure on Research & Development Survey and where significant changes in data arise, it is queried with the enterprise thereby reducing measurement error.

15.3.3 Non-Response Error

Unit non-response – The response rate for the Community Innovation Survey 2018-2020 was approximately 51%. The main reasons for unit non-response are as follows:

- 1. Company Gone-Away from the address on the survey form
- 2. Duplicate company receive two forms with different reference numbers
- 3. Company has ceased trading
- 4. Form returned blank
- 5. There is a query about the survey form
- 6. Company refuses to respond

The section investigates these issues and resolves them as appropriate e.g. ringing the company for confirmation of information, removing the company from the survey, etc.

Item non-response – Item non- response is not formally measured in the survey. Where a part of the form is not completed the following is done:

- 1. An attempt is made to automatically update the form using edit checks.
- 2. A manual check to see if the variable was captured in the last running of the survey for the particular enterprise in question and if the answer can be reused.
- 3. Reference is made depending on the variable in question to see if information is available from the latest Business Expenditure on Research and Development (BERD) survey.
- 4. Missing values estimated using averages from other responding enterprises by NACE and employment size
- 5. Contact enterprise to confirm the details on the survey form.



15.3.3.1 Unit non-response rate

NACE	Number of eligible units with no	Total number of eligible units in	Un-weighted unit non-response rate	Weighted non- response rate
	response	the sample	(%)	-
Core NACE (B-C-D-			59%	
E-46-H-J-K-71-72-				
73)				
Core industry				
(B_C_D_E -				
excluding				
construction)				
Core Services (46-H-				
J-K-71-72-73)				

There were in total 4 reminders issued.

15.3.3.2 Item non-response rate

Item non-response rate for Turnover (in Core NACE: B-C-D-E-46-H-J-K-71-72-73 enterprises with 10 or more employees).

	Item non response rate (unweighted)	Imputation	If imputed, describe method used, mentioning which auxiliary information or stratification is used
Turnover	0		In order to reduce burden, data on turnover for enterprises sampled in this survey is collected from various sources including SBS, administrative data, Business register and other business surveys

15.3.4 Processing error

Responses are received via online forms so the risk of processing errors arising from manipulating questionnaires is low.

Data Edits are run which check for the following:

- That all the relevant questions have been answered
- There is internal consistency in answers within the form

If the edit cannot be resolved locally, then the enterprise is contacted to confirm the returned data. The return is manually changed if required.

NACE Code and NACE division are linked to the enterprise number as part of the original register information. This means that the possibility of a NACE misclassification error is very low.

15.3.5 Model assumption error

There is no formal imputation for non-response. However, use is made of imputation for both unit and item non-response on a manual basis from data held by CSO for previous returns (e.g. CIS 2016-2018 and BERD 2019/2020).

In the absence of any other source for missing monetary amounts in the case of research and development expenditure, missing values are estimated using averages from other responding enterprises by NACE and employment size. The grossing factors are verified by comparing the grossed values for turnover and employment to the latest available results of the Census of Industrial Production (CIP) and Annual Services Inquiry (ASI).

X

16 Timeliness and punctuality

16.1 Timeliness

Final results were produced 18 months from the end of the reference period.

16.1.1 TP1. Time lag – First results

Not applicable.

16.1.2 TP2. Time lag – Final results

18 months from the end of the reference period

16.2 Punctuality

The release of the IIS was originally scheduled for the 31/3/2022 however it was finally published on the 07/06/2022

16.2.1 TP3. Punctuality - Punctuality - delivery and publication

7 days late.

17 Comparability

17.1 Comparability – Geographical

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.

The review of the CIS2018 aimed to meet several objectives:

- 1. Reduce subjectivity and biases in the main CIS indicators
- 2. Improve reporting about innovation activities and capabilities in the firm
- 3. Ensure international comparability (including compliance with the OM4)
- 4. Broaden the basis CIS information on enterprise management
- 5. Take better account the diversity of enterprises in the EU
- 6. Improve reporting about external drivers and enablers of innovation
- 7. Improve timeliness
- 8. Ensure the feasibility of data collection
- 9. Ensure continuity with the CIS 2016
- 10. Improve reporting about the output and impact of innovation

17.1.1 CC1. Asymmetry for mirror flow statistics

Not applicable.

17.1.2 National Questionnaire – compliance with Eurostat model questionnaire

Methodological deviations from the CIS Harmonised Data Collection (HDC)

Questions not included in national questionnaire compared to HDC	Comment
All compulsory harmonised questions asked	The following optional questions were not asked:
	2.1-2.7, 3.16-3.17, 4.5

Changes in the filtering compared to HDC	Comment

17.1.3 National Questionnaire – additional questions

Methodological deviations from the CIS Harmonised Data Collection (HDC)

Additional questions in national questionnaire (not included in HDC)	Comment
Non-Innovators	
If your enterprise had no innovation	
activity during 2018 to 2020, please indicate	
wity it has not been necessary of possible to	
\sim No need due to previous	
innovations	
 No need due to market conditions 	
 Factors constraining innovation 	
o Other	
Covid-19 Impact	
Did your enterprise introduce any	
innovation in response to the Covid-19	
pandemic	
Were these innovations:	
• Product	
• Process	
• New to market	
 New to enterprise Do you expect to continue any of these 	
innovations post-pandemic	
Did your enterprise abandon or suspend	
any planned/ongoing innovation activities	
due to Covid-19	

17.2 Comparability over time

The Community Innovation Survey (CIS) for 2004-2006 survey was carried out using the business classification NACE Rev 1.1. The business classification used for CIS 2006-2008, onwards has been NACE Rev 2. As a result, a break in series was declared between results of the CIS2006-2008 and previous results from the CIS and no conclusions should be drawn regarding the direction or scale of any real changes between CIS 2004-2006 (CIS5) and CIS 2006-2008 (CIS6).



CIS 2006-2008 onwards are based on NACE Rev.2 and are therefore comparable. In addition, as a standardised survey is carried out across all member states of the European Union, results can be compared and cross referenced against other states.

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

17.2.1 Length of Comparable Time series

The most recently time series that is comparable is made of the last 2 iterations, 2016-2018 and 2018-2020.

17.3 Coherence – cross domain

Turnover and employment figures generated by the grossing exercise are compared to results from the Census of Industrial Production (CIP) and the Annual Services Inquiry (ASI) for those NACE codes where results were available. Where results deviate from expected results, data is reviewed and updated if required. In general, there are no directly comparable results available for comparison, and there are no directly comparable short-term results.

17.3.1 Coherence – Sub annual and annual statistics

Not applicable.

17.3.2 Coherence with National Accounts

Not applicable

17.3.3 Coherence with Structural Business Statistics (SBS)

This part compares key variables for aggregated CIS data with SBS data

Definition of relative difference between CIS and SBS data: DIFF = (SBS/CIS)*100

Comparison between SBS and CIS data (relative difference) by NACE categories and for enterprises with 10 or more employees: **Not available**

NACE	Size class	Number of enterprises (SBS/CIS)*	Number of employees (SBS/CIS)*	Total Turnover (SBS/CIS)*
Core NACE (B-C-D-E-46-H-J-K- 71-72-73)	Total	Not available	Not available	Not available
Core industry (B_C_D_E - excluding construction)	Total			
Core Services (46-H-J-K-71-72- 73)	Total			

17.4 Coherence – internal

Not applicable.

18 Cost and Burden

Estimates of Cost and Burden can be obtained from the Response Burden Barometer <u>https://www.cso.ie/en/statistics/multisectoral/responseburdenbarometer/</u>

Survey specific information is available via CSO's dissemination database PxStat. <u>https://data.cso.ie/product/RBB</u>

19 Data Revision

19.1 Data Revision Policy

Revisions refer to changes made to published statistical data when the information used in its production has been updated or corrected. This information includes all data used in compiling the statistic e.g. respondent data, administrative data, weights and factors, methodology, classifications, definitions, modifications to survey questionnaires, survey scope and data collection methods. The data revision policy that CSO statistics adheres to can be found via the following link: https://www.cso.ie/en/methods/quality/treatmentofrevisions/

19.2 Data Revision Practice

Not applicable.

19.2.1 Data Revision – Average size

Not applicable.

20 Statistical processing

20.1 Source Data

The data was collected via electronic web questionnaire between 18/6/2021 and 19/11/2021

Supplementary information was used from the following sources:

- CSO Business Register data
- CSO Structural Business Statistics (SBS) data
- CSO Business Expenditure on Research and Development (BERD) survey data

20.1.1 Population and sampling frame (or census frame)

The sampling Frame is taken from the Central Business Register.

The survey population is made of all relevant enterprises as laid down in the Eurostat Regulation. This consists of all enterprises in NACE Rev 2 sectors 05-39, 46, 49-53, 58- 63, 64-66, 71-73 with 10+ persons engaged.

20.1.2 Sampling design

The frame population is subdivided into strata at 2-digit NACE by employment size class: namely enterprises with 10 to 49 persons engaged, 50 to 249 persons engaged and 250+ persons engaged.

A census is conducted of all enterprises with 50 or more persons engaged, while a census is also conducted for certain strata in the less than 50 persons engaged category where the number of enterprises in the strata is low.



Finally, a sample of enterprises is taken for those remaining enterprises with less than 50 persons engaged that are not included in the census. Neyman allocation is used to select the sampling fraction in each of these remaining strata. The actual enterprises selected are selected using random selection.

20.1.3 Survey size (Target population and Sample size)

Data is collected through a combination of both census and sample

Sample/census indicator	Number of Enterprises	
Target population	8299	
Sample	4435	
In case of combination sample/census		
Sampled units	2590	
Enumerated units/census	1845	
Overall sample rate (overall sample/target	53%	
population		

20.1.4 Data source for pre-filled variables

Variables and indicators filled or prefilled from other sources.

Variables/Indicators	Source	Reference year
	SBS	2019
Turnover	Business Register	2020
Turnover	Corporation Tax returns (admin data)	2020
	Companies Registration Office (CRO) (admin data)	2020

20.1.5 Data source and variables used for derivation and weighting

Item	Response
Data source used for deriving population totals	Our Business Register is used to derive the population for the sample.
Variables used for weighting	Weighting is not used for the derivation of results

20.1.6 Survey technique

The 2018–2020 survey was only available for completion on the CSO website as an e-form. This data is captured by the CSO's Data Management System (DMS), where it can be viewed and amended as required. SAS programs are used for the transfers and management of the survey.

20.2 Frequency of data collection

According to the Commission Regulation (UE) 995/2012, the innovation statistics shall be provided to Eurostat every two years in each even year. The data collection takes place every second year in year t-2 preceding the data provision.



20.3 Data Collection

Web survey

https://www.cso.ie/en/media/csoie/methods/communityinnovationsurvey/CIS_2020_Survey.pdf

Information Notes

https://www.cso.ie/en/media/csoie/methods/communityinnovationsurvey/CIS_2020_Information_Notes .pdf

20.3.1 Type of Survey/Process

The survey is a combination of stratified random sampling and census. No administrative data sources are used.

20.3.2 Combination of sample survey and census data

A census is conducted of all enterprises with 50 or more persons engaged, while a census is also conducted for certain strata in the less than 50 persons engaged category where the number of enterprises in the strata is low. Finally, a sample of enterprises is taken for those remaining enterprises with less than 50 persons engaged that are not included in the census.

20.3.3 Census criteria

A census is conducted of all enterprises with 50 or more persons engaged, while a census is also conducted for certain strata in the less than 50 persons engaged category where the number of enterprises in the strata is low.

20.3.4 Questionnaire (including explanations)

The questionnaire is available at:

https://www.cso.ie/en/methods/surveyforms/innovationinirishenterprises/

The Community Innovation Survey (CIS) collects information about product and process innovation, as well as organisational and marketing innovations and other key variables during a three-year reference period.

The principal variables collected in CIS 2018-20 relate to:

- General information about the Enterprise;
- Product Innovation, including Turnover from new to market and new to firm product
- innovations;
- Business Process Innovation, including Process, Organisational and Marketing Innovation;
- Ongoing and Abandoned innovation;
- Innovation activities and expenditure;
- Innovation co-operation;
- Factors hampering innovation activities;
- Intellectual Property Rights;
- Non-Innovators

20.3.5 Survey Participation

Participation is compulsory under Statistics (Community Innovation Survey) Order 2018 (S.I. No. 455 of 2018) made under the Statistics Act, 1993 and with EU law.

20.3.6 Data Capture

The 2018–2020 survey was only available for completion on the CSO website as an e-form. This data is captured by the CSO's Data Management System (DMS), where it can be viewed and amended as required. SAS programs are used for the transfers and management of the survey.

20.3.7 Data collection method

Survey method	Yes/No	Comment
Face-to-face interview	No	
Telephone interview	No	
Postal questionnaire	No	
Electronic questionnaire (format Word or PDF to send back by email)	No	
Web survey (online survey available on the platform via URL)	Yes	
Other	No	

20.4 Data Validation

The data received from the survey e-forms is uploaded into DMS and edited on-screen. Multiple edit rules are set up on the DMS to check for inconsistencies in the companies' returns. Edit programs are run also on SAS software to perform checks on consistency of returns between separate questions and for an examination of returns with monetary amounts for research and development related expenditure.

The edits carried out include:

- 1. Where an enterprise indicates that it was engaged in product innovation new to market but did not indicate the percentage of turnover attributed to new or improved goods and services that were new to market.
- 2. Where an enterprise indicates that it was engaged in product innovation new to the firm but did not indicate the percentage of turnover attributed to new or improved goods and services that were new to firm.
- 3. Enterprises who indicates that they carried out some aspect of research and development but who did not indicate their expenditure on research and development.

A listing of all the failed edits is sorted by enterprise number and printed. The image of the form is called up on the PC screen and the reason for the edit failure is identified on the form. Each failed edit is checked for any comment on the form that may explain the failure. A limited number of returns from the previous survey data are manually compared to some returns for consistency purposes.

It should be noted that to reduce response burden automatic updates are used in general but if the edit failure cannot be resolved locally using automatic updates, then the enterprise is contacted to attempt to resolve the issue. Once all errors are amended a copy is made of the clean dataset. Reports are run during the survey period recording the number of forms returned by NACE group and employment size and to ensure that there is a response in every stratum used for grossing so that it will be possible to gross all strata. In addition, reports are run to estimate the number of edits outstanding.

20.5 Data Compilation

20.5.1 Imputation (for Non-Response or Incomplete Data Sets)

There is no formal imputation for non-response. However, use is made of imputation for both unit and item non-response on a manual basis for data held, for example, from the previous CIS and BERD 2019/2020 survey for previous returns. In the absence of any other missing data, missing values are estimated using averages from other responding enterprises by NACE and employment size. The grossing factors are verified by comparing the grossed values for turnover and employment to the latest available results of the Census of Industrial Production (CIP) and Annual Services Inquiry (ASI).

20.5.1.1 A7. Imputation rate

Not calculated.

20.5.2 Grossing and Weighting

In the absence of any other source for missing monetary amounts in the case of research and development expenditure, missing values are estimated using averages from other responding enterprises by NACE and employment size

Grossing is performed using SAS software. Grossing factors for the CIS are calculated using the inverse of the number of valid respondents divided by the relevant population from the CBR.

There are 3 grossing factors used: the number of enterprises, persons engaged and turnover. The factors which are calculated are then applied to the survey results to gross the data up to the relevant populations. The grossing factors are verified by comparing the grossed values for turnover and employment to the latest available results of the Census of Industrial Production (CIP) and Annual Services Inquiry (ASI).

Weighting is not used for the derivation of results.

Item	Response
Data source used for deriving population totals	Our Business Register is used to derive the
	population for the sample
Variables used for weighting	Weighting is not used for the derivation of results

20.5.3 Weights calculation

Method	Selected applied method	Comments
Inverse Sampling Fraction	Census: All enterprises with 50+ persons engaged. Stratified random sample: 10 to 50 persons engaged	
	(It should be noted that a census is conducted for certain strata in the less than 50 persons engaged category where the number of enterprises in the strata is low.)	
	Enterprises with less than 10 persons engaged are not surveyed.	
Non-Respondent Adjustments	We gross up for non response. Grossing factors for the CIS are calculated using the inverse of the number of valid respondents divided by the relevant population from the CBR. Grossing is calculated for strata of 2- digit NACE by employment size class.	
	There are 3 grossing factors used: the number of enterprises, persons engaged and turnover. The factors which are calculated are then applied to the survey results in order to gross the data up to the relevant populations.	



20.6 Adjustment

Regional data uses the NUTS regions for Ireland

20.6.1 Seasonal Adjustment
Not applicable

21 Comment