



**An
Phríomh-Oifig
Staidrimh**

Central
Statistics
Office

Standard SIMS Report: Census of Population



Single Integrated Metadata Structure (SIMS) Report

For

Census of Population

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1. Table of Contents

1. Table of Contents	3
2. Introduction	6
3. Contact	6
4. Metadata Update	6
4.1. Metadata last certified	6
4.2. Metadata last posted	6
4.3. Metadata last update	6
5. Statistical Presentation	7
5.1. Data Description	7
5.2. Classification System	7
5.3. Sector Coverage	7
5.4. Statistical Concepts and definitions	7
5.4.1. De Facto	7
5.4.2. Usual Residence	8
5.4.3. Usually Resident and Present	9
5.4.4. Sex	9
5.4.5. Age	9
5.4.6. Marital Status	9
5.4.7. Family Unit	9
5.4.8. Family Cycle	10
5.4.9. Private Household	11
5.4.10. Non-private Household (Communal Establishment)	11
5.4.11. Principal Economic Status	11
5.4.12. Labour Force Participation	11
5.4.13. Occupation	11
5.4.14. Industry	12
5.4.15. Status in Employment	13
5.4.16. Socio-economic Group	13
5.4.17. Social class	14
5.4.18. Place of Work, School, College or Childcare	14
5.4.19. Time leaving home, Time leaving work/school/college or childcare and Journey time	15
5.4.20. Length of Working Day	15
5.4.21. Means of travel to work, school college or childcare	15
5.4.22. Working from Home	15
5.4.23. Level of Educational	16
5.4.24. Place of Birth	16
5.4.25. Country of Citizenship	16
5.4.26. Ethnic group/background	16
5.4.27. Year of arrival in the country	17
5.4.28. Residence one year before	17
5.4.29. Religion	17
5.4.30. Irish speakers	17
5.4.31. Languages Other than English or Irish Spoken at Home	18
5.4.32. Long-lasting conditions and difficulties	18
5.4.33. General Health	18
5.4.34. Unpaid carers	18
5.4.35. Childcare	19
5.4.36. Smoking	19
5.4.37. Volunteering	19
5.4.38. Composition of private household	19
5.4.39. Household size	20
5.4.40. Nature of occupancy of household	20
5.4.41. Rent	20
5.4.42. Occupancy status	21
5.4.43. Smoke alarms	22



5.4.44. Number of rooms/bedrooms	22
5.4.45. Type of water supply system	22
5.4.46. Type of sewerage facilities	22
5.4.47. Type of heating.....	23
5.4.48. Renewable Energy.....	23
5.4.49. Type of dwelling	23
5.4.50. Year built	23
5.4.51. Number of cars or vans in the household.....	24
5.4.52. Internet connectivity	24
5.5. Statistical Unit	24
5.6. Statistical Population	24
5.7. Reference Area.....	24
5.8. Time Coverage.....	24
5.9. Base period	25
6. Unit of Measure	25
7. Reference Period.....	25
8. Institutional Mandate.....	25
8.1. Legal Acts and other agreements	25
8.2. Data Sharing	25
9. Confidentiality	25
9.1. Confidentiality – policy.....	25
9.2. Confidentiality – data treatment.....	26
10. Release Policy.....	26
10.1. Release Calendar.....	26
10.2. Release calendar access	26
10.3. User access.....	26
11. Frequency of Dissemination.....	26
12. Accessibility and clarity	27
12.1. News release	27
12.2. Publications	27
12.3. On-line database.....	27
12.3.1. AC 1. Data tables - consultations	27
12.4. Micro-data Access	28
12.5. Other	28
12.5.1. AC2. Metadata consultations	28
12.6. Documentation on Methodology.....	28
https://www.cso.ie/en/statistics/population/censusofpopulation2022/	28
12.6.1. AC3 – Metadata completeness – rate.....	28
12.7. Quality Documentation	29
13. Quality Management.....	29
13.1. Quality Assurance	29
13.2. Quality Assessment.....	30
13.2.1. Coverage assessment.....	31
14. Relevance.....	32
14.1. User Needs.....	32
14.1.1. Main National Users.....	32
14.1.2. Principal External Users.....	33
14.2. User Satisfaction	33
14.3. Data Completeness	33
14.3.1. Data Completeness rate.....	33
15. Accuracy and reliability	33
15.1. Overall accuracy.....	33
15.2. Sampling Error.....	33
15.2.1. A1. Sampling error indicator.....	33
15.3. Non-sampling Error	33
15.3.1. Coverage error	34
15.3.2. Measurement error	35



15.3.3. Non-Response Error.....	35
16. Timeliness and punctuality.....	36
16.1. Timeliness	36
16.1.1. TP1. Time lag – First results	36
16.1.2. TP2. Time lag – Final results.....	36
16.2. Punctuality.....	36
16.2.1. TP3. Punctuality – Punctuality - delivery and publication.....	36
17. Comparability	36
17.1. Comparability – Geographical.....	36
17.1.1. CC1. Asymmetry for mirror flow statistics	37
17.2. Comparability over time	37
17.2.1. Length of Comparable Time series.....	38
17.3. Coherence – cross domain.....	38
17.3.1. Coherence – Sub annual and annual statistics.....	39
17.3.2. Coherence with National Accounts.....	39
17.4. Coherence – internal	39
18. Cost and Burden.....	39
19. Data Revision	40
19.1. Data Revision Policy	40
19.2. Data Revision Practice.....	40
19.2.1. Data Revision – Average size.....	40
20. Statistical processing	40
20.1. Source Data	40
20.1.1. List of data sources.....	40
20.1.2. Population and sampling frame	42
20.1.3. Sampling design	42
20.1.4. Survey size.....	42
20.1.5. Survey technique.....	42
20.2. Frequency of data collection.....	42
20.3. Data Collection.....	42
20.3.1. Type of Survey/Process	42
20.3.2. Census Form (including explanations)	43
20.3.3. Data Collection – Register Based data.....	47
20.3.4. Survey Participation	47
20.3.5. Data Capture.....	47
20.4. Data Validation	47
20.5. Data Compilation	48
20.5.1. Imputation (for Non-Response or Incomplete Data Sets)	50
20.5.2. Grossing and Weighting.....	51
20.6. Adjustment.....	51
20.6.1. Seasonal Adjustment	51



2. Introduction

The Census of Population is held every five years in Ireland. In the year following census year a range of thematic reports are released covering a wide variety of topics including population change, age, nationality, disability, commuting and employment. Small Area Population Statistics are also released which provide a detailed picture of neighbourhoods across Ireland using the information collected in the census.

The Census of Population focuses on the collection of information relating to persons and households and the dissemination of Census of Population statistics through a range of specialised publications, releases and other media.

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4. Metadata Update

4.1. Metadata last certified

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5. Statistical Presentation

5.1. Data Description

The census provides information on the key demographic and socio-economic characteristics of the population and on the housing characteristics of private households:

- Person variables - sex, age, household composition, marital status, usual residence, usual residence one year ago, ever lived abroad, place of birth, citizenship, ethnic group/background, religion, Irish language, foreign language spoken at home, disability, health, unpaid care, childcare, education, smoking, volunteering, economic status, travel to work/school/college or childcare, working from home, occupation, industry and place of work, school, college or childcare.
- Household variables - accommodation type, year built, nature of occupancy, rent paid, number of rooms and bedrooms, heating/water/sewerage facilities, cars, renewable energy sources, smoke alarms, internet connection and devices.

For full information on descriptions and information of the Census 2022 disseminated data please consult the "Census 2022 Dissemination Strategy" available at

https://www.cso.ie/en/media/csoie/census/census2022/0083201_Census_Disemmination_Strategy_2022.pdf

The 2022 Census of Population and Housing in Ireland was taken under Section 26 of the Statistics Act 1993 and the [Statistics \(Census of Population\) Order, 2020](#). The census was originally scheduled to take place in April 2021. Following advice from the CSO, the government decided in September 2020 to postpone the census for approximately one year owing to the ongoing difficulties arising from the Covid-19 pandemic. The census date was set as Sunday, 03 April 2022. Further information is available on the CSO website here: <https://www.cso.ie/en/census/census2021postponementfaq/>

5.2. Classification System

A number of different classifications were used in Census 2022:

- The NACE Rev. 2 classification was used for industry this is the General Industrial Classification of Economic Activities within the European Communities.
- The Occupation classifications used in the census are based on the UK Standard Occupational Classification 2010 (SOC2010), with modifications to reflect Irish labour market conditions.
- NUTS3 was used to publish some regional data.
- National Framework of Qualifications was used for education levels.

5.3. Sector Coverage

The target collection is all persons present in Ireland on Census Night (03 April 2022), in both private households and communal establishments. Most of the key analyses relate to individuals; analyses are also provided on household composition, families and housing.

5.4. Statistical Concepts and definitions

5.4.1. De Facto

Unless otherwise specified, the census population figures relate to the de facto population, meaning everyone who was present in the State on the night of Sunday, 03 April 2022. The de facto population includes those who do not usually live in the State but were in the State on Census Night. It excludes those who usually live in the State but were temporarily absent outside of the State on Census Night.



Persons who were present in the State were enumerated and reported at the location where they spent census night. This may not have been the location where they usually live.

5.4.2. Usual Residence

For Census 2022, a person's usual residence was captured in the census form through their response to Question 7, "Where do you usually live?". There were three response options to this question:

- Here at this address
- Elsewhere in Ireland (including Northern Ireland), write in your full address
- Elsewhere abroad, write in the country

Householders were also required to complete questions in respect of persons who were usually resident in the household but absent on Census Night. Two questions were relevant for the usual residence criteria. The first was "How long altogether is this person away for?". There were two response options to this question:

- Less than 12 months
- 12 months or more

The second was "Was this person in the Republic of Ireland on Sunday 3 April 2022?" which also had two response options:

- Yes
- No

Usual residence is defined as the place where a person normally spends most of his/her daily period of rest. Persons usually resident but absent, or expected to be absent, at the time of the census [for less than one year] are considered temporarily absent and thus included in the total usually resident population. Persons living or expected to live outside the place of enumeration for one year or more shall not be considered temporarily absent and shall therefore be excluded from the total usually resident population. Where an entire household was absent on census night, household members out of the country on the night were not counted.

The general guidance given on classifying whether the address at which the person was enumerated was their usual residence was as follows:

An address was considered a usual residence if the person had lived at the address for a continuous period of at least 12 months before Census Night or arrived at the address in the 12 month period leading to the census with the intention of staying for at least one year.

The following specific guidance was also offered on the census form:

Persons away from home during the week who returned to the family home at weekends were advised to consider the family home as their place of usual residence.

Primary and secondary school students who boarded away from home and third level students at college or university were advised to consider the family home as their place of usual residence.

If a person spent or intended to spend 12 months or more in an institution, then that institution was that person's place of usual residence.

If a person regularly lived in more than one residence during the year leading to the census, then the place where he/she spent the majority of their time should be chosen as the place of usual residence.



5.4.3. Usually Resident and Present

The usually resident and present measure of the population refers to all persons who usually live in Ireland and who were present in the State on Census Night. It excludes persons who were not usually resident in the State on Census Night but who were present and persons who were usually resident in the State but were outside the State on Census Night. This measure is used when analysing topics such as country of citizenship and households and families.

Persons who are enumerated but do not meet the criteria for usual residence in the State, i.e. do not live or do not expect to live in the State for a continuous period of at least 12 months, are considered temporarily present and are therefore not counted in the total usually resident population.

5.4.4. Sex

Sex is captured in the census form through responses provided to Question 2: 'What is your sex?'. Question 2 provides respondents with two potential options '1 – Male' or '2 – Female'. When coding the sex variable, the responses provided to Question 2 are used to decide which sex value should be allocated to the person record.

5.4.5. Age

Age for each person on the census is captured via Question 3; 'What is your date of birth' on the census form. Age is calculated from Census Night (03 April 2022) in completed years.

5.4.6. Marital Status

Data relating to marital status was captured in Q5 of the census form: 'What is your current marital status', which provided respondents aged over 15 years with seven response options: '1 – Single (never married or never in a same-sex civil partnership)', '2 – Married (first marriage)', '3 – Re-married', '4 – In a registered same-sex civil partnership', '5 – Separated', '6 – Divorced' or '7 – Widowed'.

Marital status is the (legal) conjugal status of an individual in relation to the marriage laws of the country (de jure status). A person was classified according to his/her most recently acquired legal marital status at the reference date (03 April 2022). Whereas no one piece of law defines legal marital statuses in Ireland, they are referred to in several legislative acts e.g. *Article 41 of the Irish Constitution*, the *Family Law (Divorce) Act 1996*, the *1870 Matrimonial Causes and Marriage Law Act*, the *Civil Partnership and Certain Rights and Obligations of Cohabitants Act 2010*, and the *Marriage Act 2015*, which makes marriage available to same-sex couples. Following the passing of the Marriage Act 2015, couples cannot register a civil partnership in Ireland. However, same-sex civil partnerships that existed before 2015 are still recognised.

The minimum age for marriage and same-sex civil partnerships is 18. The question on marital status in the census does not differentiate between same-sex and opposite-sex marriages. Same-sex marriages were derived using marital status combined with the relationship and sex questions on the census form.

5.4.7. Family Unit

Relationships between household members and family status were identified using the relationship question (Q4) on the census form. Person 1 on the census form was not required to answer the relationship question. Person 2 was required to state his/her relationship to Person 1. Person 3 in the household was required to state his/her relationship to Persons 1 and 2. Person 4 was required to state his/her relationship to Persons 1, 2 and 3. Persons 5 and 6 and any subsequent persons were required to state their relationship to Persons 1, 2, 3 and 4.

There were 12 relationship options available, of which one was selected. These options were:

- Husband or wife



- Partner (including same-sex partner)
- Son or daughter
- Step-child
- Brother or sister
- Mother or father
- Step-mother/father
- Grandchild
- Other related
- Unrelated (including foster child)

In the case of usual residents absent from the household on Census Night relationship to Person 1 is collected using question A4 which provides four response options:

- Husband or wife
- Partner (including same-sex partner)
- Son or daughter
- Other related, write in relationship

The individual families and the relationship within each family is coded within census processing.

For census purposes, a family unit is defined as:

1. two persons who are married or in a same-sex civil partnership or a cohabiting couple
2. two persons who are married or in a same-sex civil partnership or a cohabiting couple together with one or more usually resident never married children (of any age), or
3. one parent together with one or more usually resident never married children (of any age).

Family members must be usual residents of the relevant household

5.4.8. Family Cycle

The classification below is used for family cycle:

- **Younger couple:** Family nucleus of married or cohabiting couple without children where the female partner is under 45 years, or in the case of a same-sex couple, where the partner of the head of household is under 45 years. In previous censuses, this category was referred to as 'Pre-family'.
- **Older couple:** Family nucleus of married or cohabiting couple without children where the female partner is aged between 45 and 64 years, or in the case of a same-sex couple, where the partner of the head of household is between 45 and 64 years. In previous censuses, this category was referred to as 'Empty nest'.
- **Retired:** Family nucleus of married or cohabiting couple without children where the female partner is aged 65 years and over, or in the case of a same-sex couple, where the partner of the head of household is aged 65 years or over.
- **Pre-school:** Family nucleus where the oldest child is aged 0 to 4 years.
- **Early-school:** Family nucleus where the oldest child is aged 5 to 9 years.
- **Pre-adolescent:** Family nucleus where the oldest child is aged 10 to 14 years.
- **Adolescent:** Family nucleus where the oldest child is aged 15 to 19 years.
- **Adult:** Family nucleus where the oldest child is aged 20 years and over.



5.4.9. Private Household

In the census, a private household is defined according to the housekeeping concept. The precise definition of a household used is as follows:

- One person living alone, or
- A group of related or unrelated people living at the same address with common housekeeping arrangements, meaning they share at least one meal a day or share a living or sitting room.

In order to be included in the household, a person had to be a usual resident at the time of the census. Therefore, visitors to the household on Census Night were excluded, while usual residents temporarily absent (for less than 12 months) were included.

A permanent private household is a private household occupying a permanent dwelling such as a house, flat or bed-sit. A temporary private household is a private household occupying a caravan, mobile home or other temporary dwelling.

5.4.10. Non-private Household (Communal Establishment)

A non-private household is a group of persons enumerated in a boarding house, hotel, guest house, hostel, barracks, hospital, nursing home, boarding school, religious institution, welfare institution, prison or ship. A non-private household may include usual residents and/or visitors. However, proprietors and managers of hotels, principals of boarding schools, persons in charge of various other types of institutions and members of staff who, with or without their families, occupy separate living accommodation on the premises are classified as private households.

5.4.11. Principal Economic Status

Respondents aged 15 and over were required to indicate their present principal status (Q28). Respondents were required to mark one of the following nine response options:

- Working for payment or profit,
- Looking for first regular job,
- Short-term unemployed (less than 12 months)
- Long-term unemployed (12 months or more)
- Student or pupil,
- Looking after home/family,
- Retired from employment,
- Unable to work due to permanent sickness or disability
- Other.

The 'Other' option was accompanied by write-in boxes where respondents could write in their present status. The text captured from this option was subsequently coded to 'Other' or to one of the other options where applicable.

5.4.12. Labour Force Participation

The census labour force participation rate was calculated as the proportion of persons aged 15 and over who were economically active (i.e. working, looking for their first regular job or unemployed) in the entire population over the age of 15.

5.4.13. Occupation

'Occupation' refers to the type of work done in a job (that is the main tasks and duties of the work). For Census 2022 it was captured through Question 32: 'What is (was) your occupation in your main job?'.



The Occupation classifications used in the census are based on the UK Standard Occupational Classification (SOC), with modifications to reflect Irish labour market conditions. The primary version of SOC used in Census 2022 is SOC2010 and was first used in Census 2011. Previously, the census used a primary classification based on the SOC90 classification, which was first used in Census 1996. The SOC classification adheres to the international occupation classification ISCO Com (88). The hierarchical structure provided within these classifications is suited to accurate automatic coding.

The code to which a person's occupation is classified is determined by the kind of work he or she performs in earning a living, irrespective of the place in which, or the purpose for which, it is performed. The nature of the industry, business or service in which the person is working has no bearing upon the classification of the occupation. For example, the occupation 'clerk' covers clerks employed in manufacturing industries, commerce, banking, insurance, public administration, professions and other services etc.

The breakdown by occupation is available for persons aged 15 or over that were:

- employed, or
- unemployed, but have ever been in employment

The output classifications for Occupation are Intermediate Occupational Group (26 categories) and Detailed Occupational Group (328 categories).

The allocation of a person within the breakdowns of the topics 'Occupation', 'Industry' and 'Status in employment' is based on the same job. Where persons did not supply their occupation on the census form, this field was left blank.

5.4.14. Industry

Industry (branch of economic activity) is the kind of production or activity of the establishment (or similar unit) in which the job of a currently economically active person is located. The basis of the industrial classification is, in the case of employees, the business or profession of their employer and in the case of self-employed persons, the nature of their own business or profession. Persons are classified according to the industry they worked in during their most recent employment.

The industry in which a person is engaged is determined (regardless of their occupation) by the main economic activity carried out in the local unit in which he or she works. If, however, the local unit provides an ancillary service to another unit in the business (e.g. administration, storage) then the persons in the ancillary unit are classified to the industry of the unit it services. Thus, while the occupational classification is concerned only with the particular work performed by an individual regardless of the activity carried on at the local unit, the industrial classification is concerned only with the ultimate purpose of the unit or end product regardless of the precise nature of the work performed by each individual.

A manufacturing or commercial unit may employ persons with many different occupations for the purpose of making a particular product or for giving a particular service. Conversely, there are cases in which particular occupations are largely confined to a single industry. For example, the majority of persons with agricultural occupations are in the agriculture industry and most miners are in the mining industry.

Persons doing more than one job are allocated an industry (branch of economic activity) based on their main job, which is to be identified according to responses given to Question 34: 'What is (was) the business of your employer at the place where you work(ed) in your main job?'.

The breakdown by industry is available for persons aged 15 or over that were:

- employed, or
- unemployed, but have ever been in employment



In Census 2022, industry is coded using NACE – the General Industrial Classification of Economic Activities within the European Communities. The current version, NACE Rev. 2, is a 4-digit activity classification that was first used in Census 2011 and is a revision of the version originally published by Eurostat in 1970. The previous version, NACE Rev. 1, was in use in the censuses of 2002 and 2006. The output classifications for Industry are Broad Industrial Group (21 categories) and Detailed Industrial Group (145 categories).

The allocation of a person within the breakdowns of the topics 'Occupation', 'Industry' and 'Status in employment' is based on the same job. Where persons did not supply their industry on the census form, this field was left blank.

5.4.15. Status in Employment

In Census 2022, persons who identified themselves as either working, unemployed or retired were required to answer the employment status question (Q31): 'Do (did) you work as an employee or are (were) you self-employed in your main job?'.

There were four employment status options, one of which was chosen. These options were:

- Employee
- Self-employed, with paid employees
- Self-employed, without paid employees
- Assisting relative (not receiving a fixed wage or salary)

The census did not identify persons who were both employers and employees.

A second part of this question asked persons who identified themselves as either working, unemployed or retired: 'Is (was) your status full-time or part-time?'.

5.4.16. Socio-economic Group

The entire population was classified into one of ten specific socio-economic groups (introduced in 1996). In addition, a residual group entitled 'All others gainfully occupied and unknown' was used where sufficient details were not provided. The classification aims to bring together persons with similar social and economic statuses on the basis of the level of skill or educational attainment required. In defining socio-economic group no attempt was made to rank groups in order of socio-economic importance.

The socio-economic group of persons aged 15 years and over who were at work was determined by their occupation and employment status. A break in the time series has occurred for socio-economic group between Census 2022 and previous census results. In 2022, the socio-economic group framework was rebased to incorporate the SOC2010 classification unlike previous census results published. It was possible to rebase socio-economic group using a derivation matrix developed by the Institute for Social and Economic Research (ISER) in conjunction with the Office of National Statistics (ONS). Although the categories remain the same, it is important to note the break in time series when comparing historical tables to Census 2022 results.

Unemployed or retired persons aged 15 years and over were classified according to their former occupation and employment status. Persons looking after the home/family or at school/college, who are members of a family unit, were classified to the socio-economic group of another person in the family unit using a priority table based on the relationships within the family. Thus, if the reference person (the reference person is the first person identified as a parent, spouse or cohabiting partner in the first family in the household. Where no person in the household satisfies these criteria, the first usually resident person is used as the reference person) of a family was at work, unemployed or retired, other persons were assigned to his/her socio-economic group. If the reference person was neither at work, unemployed nor retired (e.g. never worked, permanently disabled), they were assigned to the socio-economic group of the other parent, spouse or cohabiting partner in the family unit. If there was no such spouse or partner or if the spouse, in turn, was neither at work, unemployed or retired, they were assigned to the socio-economic group of a working son/daughter. If there were no persons in the family unit with a socio-economic group,



then they were assigned to the unknown socio-economic group. Other persons looking after the home/family or at school/college who were not members of a family unit, such as relatives of the reference person (e.g. widowed grandparents) were assigned a socio-economic group using the above method. Unrelated persons or persons living alone who are looking after the home/family or at school/college were assigned to the unknown group.

The following is the list of socio-economic groups used:

- A Employers and managers
- B Higher professional
- C Lower professional
- D Non-manual
- E Manual skilled
- F Semi-skilled
- G Unskilled
- H Own account workers
- I Farmers
- J Agricultural workers
- Z All others gainfully occupied and unknown

5.4.17. Social class

The entire population was classified into one of seven social class groups (introduced in 1996) which are defined on the basis of occupation.

The occupations included in each of these groups have been selected in such a way as to bring together, as far as possible, people with similar levels of occupational skill. In determining social class, no account is taken of the differences between individuals on the basis of other characteristics such as education. Accordingly, social class ranks occupations by the level of skill required on a social class scale, ranging from 1 (highest) to 7 (lowest). This scale combines occupations into six groups by occupation and employment status following procedures similar to those outlined above for the allocation of socio-economic group. A residual category 'All others gainfully occupied and unknown' is used where no precise allocation is possible.

A break in the time series has occurred for social class between Census 2022 and previous census results. In 2022, the social class framework was rebased to incorporate the SOC2010 classification unlike previous census results published. It was possible to rebase social class using a derivation matrix developed by the Institute for Social and Economic Research (ISER)^[3] in conjunction with the Office of National Statistics (ONS). Although the categories remain the same, it is important to note the break in time series when comparing historical tables to Census 2022 results.

The following is the list of social class groups used:

- 1 Professional workers
- 2 Managerial and technical
- 3 Non-manual
- 4 Skilled manual
- 5 Semi-skilled
- 6 Unskilled
- 7 All others gainfully occupied and unknown

5.4.18. Place of Work, School, College or Childcare

In Census 2022, all persons who indicated that they were at work, school, college or childcare were required to provide the location (Q36) which is subsequently coded to an x,y address when that address is within the island of Ireland. Respondents also have the option of indicating that they work mainly from



home or are mobile workers. Where this field was not responded to in the census form, the value was left blank.

5.4.19. Time leaving home, Time leaving work/school/college or childcare and Journey time

Data on the time a person left home to travel to work, school, college or childcare was collected at Q20, which asked 'What time do you usually leave home?'. Q22 then asked, 'What time do you usually leave work, school, college or childcare?'. People were asked to record the time using the 24-hour clock.

For the time that people left home the responses were grouped into half hour time periods starting from 'before 06:30', '06:30 to 07:00', etc up to 'After 09:30'.

For the time that people left work, school, college or childcare the responses were grouped into half hour time periods starting from 'before 12:00', '12:00 to 12:30', etc up to 'After 21:00'.

Data on the time it took people to travel to work, school college or childcare came from Q21 which asked, 'How long does your journey take?'. People were asked to record the journey time in minutes. This question was used to calculate average journey times and was also grouped as follows:

- Journey time < 15 mins
- Journey time 15 mins - < 30 mins
- Journey time 30 mins - < 45 mins
- Journey time 45 mins - < 60 mins
- Journey time 60 mins - < 90 mins
- Journey time 90 mins and over

5.4.20. Length of Working Day

The length of the working day was estimated from the time when people left home for work (Q20), when people departed their workplace (Q22) and their journey time (Q21).

5.4.21. Means of travel to work, school college or childcare

Data on how people travel to work, school, college or childcare was collected at Q19, which asked 'How do you usually travel to work, school, college or childcare?'. People were asked to select one of the following options for the longest part, by distance, of their usual journey:

- On foot
- Bicycle
- Bus, minibus or coach
- Train, DART or LUAS
- Motorcycle or scooter
- Motor car: Driver
- Motor car: Passenger
- Other means (incl. lorry or van)

People were also given the option to select that they were not at work school, college or childcare or to select that they work mainly at or from home.

5.4.22. Working from Home

Data relating to working from home came from two questions. The first was from Q19 on the census form which asked people how they usually travel to work, school, college or childcare, this is the same as in previous census and can be compared over time.



A new question (Q30) was introduced in Census 2022 which asked people who were at work whether they ever work from home. All people who responded that they did work from home were then asked to record how many days per week they usually worked from home.

5.4.23. Level of Educational

In Census 2022, all persons aged 15 and over were required to indicate the highest level of education/training (full time or part time) which had been completed to date (Q27). The response options were: No formal education/training, Primary Education, Lower Secondary, Upper Secondary, Technical or Vocational, Advanced Certificate/Completed Apprenticeship, Higher Certificate, Ordinary Bachelor Degree or National Diploma, Honours Bachelor Degree/Professional qualification, Postgraduate Diploma or Master's Degree, Doctorate (PhD) or higher. When no response was provided to this question, the field was left blank.

5.4.24. Place of Birth

In Census 2022, a person's place of birth is provided in Q6 on the census form and corresponds to the place where the respondent's mother lived at the time of the respondent's birth. The question required persons to write in their **county** (if in Ireland) or **country** of birth. Information on the country of birth was based on the international boundaries existing on 03 April 2022. Where this data was not provided, the place of usual residence was taken as the place of birth.

5.4.25. Country of Citizenship

In Census 2022, a person's country of citizenship is provided in Q10 on the census form. In previous censuses people were asked to indicate their nationality. The census 2022 question required persons to indicate whether they have Irish citizenship, a non-Irish citizenship or no citizenship. Persons who indicated that they had a non-Irish citizenship were required to write in this citizenship; persons who had more than one citizenship were required to write in each of their non-Irish citizenships. This question was used to collect data on the number of people with Irish, non-Irish citizenship and dual citizenship (both Irish and non-Irish).

5.4.26. Ethnic group/background

A person's ethnic group/background was asked at Q11. People were initially asked to select a group from A to D then an option within each of the groups:

A white

- Irish
- Irish traveller
- Roma
- Any other white background

B Black or Black Irish

- African
- Any other Black background

C Asian or Asian Irish

- Chinese
- Indian/Pakistani/Bangladeshi
- Any other Asian background

D Other, including mixed group/background

- Arabic
- Mixed
- Other

When people selected group D, 'Mixed' or 'Other' they also had the option to write in a description of their ethnic group.



The response categories 'Roma', 'Indian/Pakistani/Bangladeshi' and 'Arabic' were new in Census 2022. The change to the question means that some categories were not directly comparable with the previous census results.

5.4.27. Year of arrival in the country

In Census 2022, the year a person arrived to live in the country was provided in Q9 of the census form. There were three parts to the question, the first asked whether the respondent ever lived outside the Republic of Ireland for a continuous period of one year or more. For those that did, they were required to indicate when they last took up residence in the Republic of Ireland and the country of their last previous residence.

5.4.28. Residence one year before

Question 8 in Census 2022 was asked of persons aged 1 year or over. It asked, 'Where did you usually live one year ago?'.

There were three response options

- Same as now
- Elsewhere in Ireland (including Northern Ireland)
- Elsewhere abroad

If persons indicated that their usual residence one year ago was the 'same as now', it was coded to the geography at which they were enumerated.

If they indicated that their usual residence one year ago was 'Elsewhere in Ireland (including Northern Ireland)', they were required to write in the county in which they lived.

If they indicated that their usual residence one year ago was 'Elsewhere abroad', they were required to write in the country in which they lived.

The write-in answers were subsequently coded during census processing.

5.4.29. Religion

In Census 2022, people were asked their religion at Q12 of the census form. They could select one of 6 options or alternatively could write in their religion. The write-in answers were subsequently coded to the relevant religion during census processing.

5.4.30. Irish speakers

Data on Irish Speakers was collected at Q13. All persons aged 3 years or over were asked 'Can you speak Irish', all those who responded 'Yes' were then asked the frequency that they spoke Irish and could select any of the following that applied:

- Daily, within the education system
- Daily, outside the education system
- Weekly,
- Less often,
- Never

Irish speakers were also asked a further question about how well they spoke Irish and could select one of the following: 'Very well', 'Well' or 'Not well'.



5.4.31. Languages Other than English or Irish Spoken at Home

Data on other languages spoken at home was collected at Q14, which asked 'Do you speak a language other than English or Irish at home?'. All people who responded 'Yes' were then asked to write in the language they spoke which was subsequently coded during processing. All people who spoke another language were also asked their ability to speak English and could select one of the following responses: 'Very well', 'Well', 'Not well' or 'Not at all'.

5.4.32. Long-lasting conditions and difficulties

Data on long-lasting conditions and difficulties were collated from responses to Q15 and Q16. In the instructions for respondents, a long-lasting condition or difficulty was defined as one that has lasted or was expected to last for six months or longer, or that regularly reoccurred.

Q15 asked people 'Do you have any of the following long-lasting conditions or difficulties?'. The list of long-lasting conditions included the following:

- Blindness or a vision impairment
- Deafness or a hearing impairment
- A difficulty with basic physical activities such as walking, climbing stairs, reaching, lifting or carrying
- An intellectual disability
- A difficulty with learning, remembering or concentrating
- A psychological or emotional condition or a mental health issue
- A difficulty with pain, breathing or any other chronic illness or condition

Q16 asked: 'As a result of a long-lasting condition or difficulty, do you have any difficulty doing any of the following?', people were instructed to include issues related to old age. The list of difficulties included the following:

- Dressing, bathing or getting around inside the home
- Going outside the home to shop or visit a doctor's surgery
- Working at a job or business or attending school or college
- Participating in other activities, for example leisure or using transport

People were asked to indicate the extent to which they experienced any long-lasting conditions or difficulties they had. From the questions, it is possible to identify three categories reflecting the extent to which long-lasting conditions or difficulties were experienced:

- Long-lasting condition or difficulty experienced to any extent.
- Long-lasting condition or difficulty experienced to a great extent.
- Long-lasting condition or difficulty experienced to some extent.

5.4.33. General Health

Data on general health was collected at Q17, which asked 'How is your health in general?'. People were asked to rate their health from very good to very bad.

5.4.34. Unpaid carers

Data on unpaid carers came from Q23 which asked: 'Do you provide regular unpaid personal help or support to a family member, neighbour or friend with a long-term illness, health issue, an issue related to old age or disability?'. All people who said that they did provide unpaid care were asked how many hours per week did they provide care. The hours of caring were grouped as follows:

- 1-14 hours unpaid help per week
- 15-28 hours unpaid help per week
- 29-42 hours unpaid help per week



- 43 or more hours unpaid help per week

5.4.35. Childcare

A new question on whether children aged under 15 were in childcare was asked in the 2022 census. All children who responded that they were in childcare were asked which of the following types was the main type of childcare:

- Unpaid relative or family member
- Paid relative or family member
- Childminder (in childminders home)
- Au pair/Nanny/Childminder (in child's home)
- Crèche/Montessori/Playgroup/After school
- Other (including special needs facility, breakfast clubs, etc)

All children who were in childcare were also asked how many hours per week during term times they spent in childcare. The hours in childcare were grouped as follows:

- 1 - 10 hrs per week
- 11 - 20 hrs per week
- 21 - 30 hrs per week
- 31 - 40 hrs per week
- 41 hrs or more per week

5.4.36. Smoking

A question on smoking tobacco products was included for the first time in an Irish census in 2022. Question 18 asked 'Do you smoke tobacco products?'. People could select one of the following options:

- Yes - daily
- Yes - occasionally
- No – have given up smoking
- Never

5.4.37. Volunteering

For the first time since the 2006 census, a question was asked on participation in voluntary activities. People were asked to select all the types of voluntary activity that applied from the following list:

- Social or charitable organisations.
- Religious groups or church.
- Sporting organisations.
- Political organisations.
- Community work.

5.4.38. Composition of private household

The Irish Census operates on the 'housekeeping' definition of households. According to the housekeeping concept, a private household is either:

A **one-person** household, that is a person who lives alone in a separate housing unit or who occupies, as a lodger, a separate room (or rooms) of a housing unit but does not join with any of the other occupants of the housing unit to form part of a multiperson household.

A **multiperson** household, that is a group of two or more persons who combine to occupy the whole or part of a housing unit and to provide themselves with food and possibly other essentials for living. Members of the group may pool their incomes to a greater or lesser extent.



Households are the basic unit of enumeration in the census. Each household received a separate census form and all details pertaining to each member of that household were completed within that form. When more than one household resided in a single dwelling unit, additional census forms were distributed to each separate household. This ensured that the data of household members could be linked throughout the processing and during publication and analysis of the results.

The type of private household was based upon responses to the relationship question. The family nucleus code (FNC) effectively defines the structure that exists in the non-single person private household for usual residents. FNC is based on the relationship to Person 1 of all other members of the household. There may be one, two or three family nuclei within the same household. At most, 3 family nuclei were coded.

Note: In Census 2022, persons defined as children can be of any age providing, they have never been married.

The classification below was used for the Composition of Private Households:

- One person
- Married couple (or cohabiting couple)
- Married couple (or cohabiting couple) with children
- Married couple (or cohabiting couple) with relatives and other persons
- Married couple (or cohabiting couple) with children, relatives and other persons
- One parent with children
- One parent with children, relatives and other persons
- Two or more family units with or without other persons
- Non-family households containing related persons
- Households comprised of unrelated persons only

5.4.39. Household size

The size of private household data is based upon the number of persons included in the census return for individual households on the census form.

Private households may be defined according to the 'housekeeping concept' or the 'household dwelling' concept. The Irish Census operates on the 'housekeeping' definition of households.

5.4.40. Nature of occupancy of household

Categorisation of occupied dwellings by tenure status was based on the answer to the question (H2), which asked householders 'Does your household own or rent your accommodation?'. For households who said they were renting they were also asked 'who is your landlord'. The following are the categories used for the nature of occupancy:

- Owner occupied with mortgage or loan
- Owner occupied without mortgage or loan
- Rented from a private landlord
- Rented from a local authority
- Rented from a voluntary body
- Occupied free of rent

5.4.41. Rent

All householders who were renting were asked to record the amount of rent paid and the frequency of payment (weekly, monthly or yearly). This was used to calculate weekly rent which was published using the following categories:

- rent under €25



- rent €25 - < €50
- rent €100 - < €150
- rent €150 - < €200
- rent €200 - < €250
- rent €250 - < €300
- rent €300 - < €350
- rent €350 - < €400
- rent €400 and over

5.4.42. Occupancy status

One of eight occupancy statuses were attributed to each permanent private dwelling during census enumeration. The occupancy status was determined by Enumerators after visiting each dwelling. The occupancy status types which could be recorded by the Enumerator were as follows:

- Occupied
- Temporarily absent
- Vacant
- Holiday home
- Under construction
- Derelict
- Commercial only
- Does not exist

When contact was made with a householder who confirmed that the dwelling would be occupied on Census Night, the dwelling was categorised as 'occupied'. When no contact was made with a householder or when the householder confirmed that the dwelling would be unoccupied on Census Night, one of the other categories was chosen. The definition of each of these categories was as follows:

Temporarily absent

Dwellings where the entire household was temporarily away on Census Night. In this case the householder was asked for the address where each household member spent Census Night. A tracking system was used to check that each household member was included on the census form where they claimed to have spent Census Night. For usually resident households who were absent abroad on Census Night, information about each person was captured on a smartphone application.

Vacant

To confirm whether a habitable dwelling was vacant, the Enumerator was required to call to it several times prior to Census Night, varying the times of the calls in case the householder worked a set pattern of hours. The Enumerator was instructed to look for signs that the house was not occupied, e.g. no furniture, no cars outside, mail accumulating, overgrown garden. There was also an instruction to contact neighbours to ascertain whether the house was vacant. The Enumerator was required to call back to houses classified as vacant after Census Night to confirm that they remained unoccupied.

Holiday home

This category covered dwellings which were only occasionally occupied and approximated to 'dwellings reserved for seasonal or secondary use'. The Enumerator was advised that they were usually found in rural areas, but they also included all dwellings that were occasionally occupied such as city apartments used for weekend breaks. As with vacant dwellings, the Enumerator was required to contact householders if possible and to call several times to the dwelling if required in order to do this. However, if this was not possible, the Enumerator was instructed to contact neighbours, who were the best source for categorizing a dwelling as a holiday home rather than vacant.



Under construction

Dwellings which were not yet fit for habitation because the roof, doors, windows or walls had not yet been built or installed were considered under construction.

Derelict

Derelict dwellings were those which had been abandoned, looked dilapidated and had doors and windows boarded up. The grounds of these dwellings may have been overgrown and the buildings were likely to be old.

Commercial only

Buildings were to be categorised as commercial only if the premises were used solely for commercial purposes and no part of the building was used as a dwelling.

Does not exist

When the Enumerator could not find a dwelling at the location indicated on his/her area map he/she was instructed to indicate that the marked dwelling did not exist.

5.4.43. Smoke alarms

Data on the number of working smoke alarms in the household was captured from question H4, which asked 'How many working smoke alarms are in your accommodation?'. The householder could record the number of smoke alarms or select 'None'.

5.4.44. Number of rooms/bedrooms

Data on the number of rooms in each dwelling was captured through the response to question H5 on the census form. This question asked: 'How many rooms do you have for use only by your household?' Respondents were required to indicate the number of rooms and the number of bedrooms in their response. The question included the following guidance on what constitutes a room for the purposes of census:

- Do NOT count bathrooms, toilets, kitchenettes, utility rooms, consulting rooms, offices, shops, halls, landings or rooms that can only be used for storage such as cupboards
- Do count all other rooms such as kitchens, living rooms, bedrooms, studies and conservatories you can sit in
- If two rooms have been converted into one, count them as one room

5.4.45. Type of water supply system

Data on the water supply system was captured through the response to question H8 on the census form. The question asked 'What type of piped water supply does your accommodation have?' Respondents were required to indicate one of the following options:

- Public supply
- Public Group Scheme
- Private Group Scheme
- Private source (e.g. well, lake, rainwater tank etc)
- No piped water supply

5.4.46. Type of sewerage facilities

The information supplied on sewerage facilities was derived from the question H9. The question and associated response options were as follows:

'What type of sewerage facility does your accommodation have?'

- Public sewer
- Individual septic tank



- Individual treatment system other than a septic tank
- Other sewerage facility
- No sewerage facility

5.4.47. Type of heating

This information is captured through question H6 which asked 'What is the main type of fuel used by the central heating in your accommodation?' The response options were:

- No central heating
- Oil
- Natural gas
- Electricity
- Coal (including anthracite)
- Peat (including turf)
- Liquid Petroleum Gas (LPG)
- Wood (including wood pellets)
- Other.

5.4.48. Renewable Energy

A question about the different types of renewable energy sources used by households was asked for the first time in Census 2022. This information was captured through question H7: 'Does your accommodation use any of the following renewable energy sources?', householders could select as many of the following that applied:

- No renewable energy sources
- Solar panels for water heating
- Solar panels for electricity
- Wind turbine
- Air source heat pump
- Ground source heat pump
- Wood
- Other renewable sources

5.4.49. Type of dwelling

The type of dwelling was recorded by Enumerators when they visited each dwelling to deliver census forms. The dwelling type could be recorded as:

- Detached house
- Semi-Detached house
- Terraced house
- Flat or apartment in a purpose-built block
- Flat or apartment in a converted house or commercial building
- Bed-sit
- A caravan or other mobile or temporary structure

5.4.50. Year built

Question H1 on the census form was used to generate this data. It asked: 'When was your house, flat or apartment first built?' An instruction was given that reads 'Mark the year in which first built even if the building was subsequently converted, extended or renovated'. The response options were:

- Before 1919
- 1919-1945
- 1946-1960



- 1961-1970
- 1971-1980
- 1981-1990
- 1991-2000
- 2001-2010
- 2011-2015
- 2016 or later

5.4.51. Number of cars or vans in the household

The number of cars or vans owned by the household was collected at question H10 which asked: 'How many cars or vans are owned or are available for use by one or more members of your household?'. Householders were instructed to include company cars or vans for private use. The householder could select: None, one, two, three, four or more cars.

5.4.52. Internet connectivity

Data on internet connectivity was collected at the question H11: 'What type of internet connection does your household have?'. Householders could select as many as the following that applied:

- Fixed broadband (e.g. phone/TV cable, internet cable, etc)
- Mobile broadband (e.g. 3G, 4G, dongle etc)
- Satellite
- Other connection
- No internet connection

Householders were also asked what device they used to access the internet in their household. They could select as many as the following that applied:

- Desktop PC
- Laptop (including notebook, netbook etc)
- Tablet
- Mobile phone
- Smart TV
- Video game console
- Smart domestic appliance
- Other

When householders selected 'Other' they also had the option to write in a description of their device.

5.5. Statistical Unit

Data is provided on persons, private households, families and dwellings.

5.6. Statistical Population

The census produces information on persons, households and families usually resident on the territory of Ireland. Data is also provided on dwellings on the territory of Ireland.

5.7. Reference Area

The area is the territory of Ireland.

5.8. Time Coverage

The census took place on Sunday, 03 April 2022. The previous census was held in April 2016.



5.9. Base period

Not applicable.

6. Unit of Measure

Not applicable

7. Reference Period

Point in time. The reference date in the 2022 census was 03 April 2022.

8. Institutional Mandate

8.1. Legal Acts and other agreements

Section 8 of the Statistics Act 1993 establishes the Central Statistics Office to exercise the functions of the Statistics Act. [Statistics Act, 1993 \(irishstatutebook.ie\)](https://www.irishstatutebook.ie/eli/1993/act/23/enacted/01-01-1993)

The census was taken under Section 26 of the Statistics Act 1993 and the [Statistics \(Census of Population\) Order, 2020](#) provides for the census to be held on 03 April 2022. It details the information to be provided and the persons required to provide it.

8.2. Data Sharing

Under Section 30 of the Statistics Act 1993, the CSO is legally entitled to access data held by other Irish government entities for the purposes of statistical compilation.

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.

All staff working on the census must become Officers of Statistics, thereby making a legal commitment to protect the confidentiality of census information, as provided for in Part II (Sections 20 to 22) of the Statistics Act. The Act (Sections 38 and 39) provides that Officers of Statistics who abuse their position or misuse the information provided them in the course of their duties shall be guilty of an offence, and liable to penalties in that regard (as set out in Section 44).

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:
<https://www.cso.ie/en/aboutus/lqdp/csodatapolicies/statisticalconfidentiality/>



9.2. Confidentiality – data treatment

All census data which is disseminated into the public domain is in accordance with the non-disclosure guarantee given in Paragraph 33 of the Statistics Act 1993.

Statistical Disclosure Control methods based on perturbation are applied to census 2022 data prior to it being released into the public domain.

When compiling census data for national dissemination, cells that are found to be at risk of disclosing either individuals' identities or individuals' attributes are either suppressed or aggregated with other cells, thereby removing the disclosure. In general for national dissemination, cell sizes of under 6 are suppressed with secondary suppression also introduced.

Unique identifiers are removed from research microdata files and categorical variables are top coded where necessary.

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 on CSO.ie. This calendar was initially published in May 2023 and 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: <https://www.cso.ie/en/census/census2022/census2022publicationschedule/>

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 and are free to access and download. 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.

Press releases were issued to national and local media to accompany each report. The reports were made available to all users simultaneously.

11. Frequency of Dissemination

At national level Ireland conducts and disseminates census of population data every five years.



12. Accessibility and clarity

12.1. News release

Census 2022 national press releases can be found at the following links:

- Summary Results:
<https://www.cso.ie/en/csolatestnews/pressreleases/2023pressreleases/presstatementcensusofpopulation2022-summaryresults/>
- Population distribution and movements:
<https://www.cso.ie/en/csolatestnews/pressreleases/2023pressreleases/presstatementcensus2022resultsprofile1-populationdistributionandmovements/>
- Disability, health and carers:
<https://www.cso.ie/en/csolatestnews/pressreleases/2023pressreleases/presstatementcensus2022resultsprofile4-disabilityhealthandcarers/>
- Housing:
<https://www.cso.ie/en/csolatestnews/pressreleases/2023pressreleases/presstatementcensus2022resultsprofile2-housinginireland/>
- Diversity:
<https://www.cso.ie/en/csolatestnews/pressreleases/2023pressreleases/presstatementcensus2022resultsprofile5-diversitymigrationethnicityirishtravellersreligion/>
- Households, families and childcare:
<https://www.cso.ie/en/csolatestnews/pressreleases/2023pressreleases/presstatementcensus2022resultsprofile3-householdsfamiliesandchildcare/>
- Employment, occupations and commuting:
<https://www.cso.ie/en/csolatestnews/pressreleases/2023pressreleases/presstatementcensus2022resultsprofile7-employmentoccupationsandcommuting/>
- The Irish Language and education:
<https://www.cso.ie/en/csolatestnews/pressreleases/2023pressreleases/presstatementcensus2022resultsprofile8-theirishlanguageandeducation/>
- Volunteering:
<https://www.cso.ie/en/csolatestnews/pressreleases/2024pressreleases/presstatementcensusofpopulation2022spotlightseriesvolunteeringinireland/>
- Small area population data:
<https://www.cso.ie/en/csolatestnews/pressreleases/2023pressreleases/presstatementcensus2022csolaunchesinteractivemapforcensus2022smallareas/>
- Homelessness:
<https://www.cso.ie/en/csolatestnews/pressreleases/2024pressreleases/presstatementcensus2022resultsprofile6-homelessness/>

12.2. Publications

All national census publications can be found at this website

<https://www.cso.ie/en/statistics/population/censusofpopulation2022/>

12.3. On-line database

The national online database of census data can be found here <https://data.cso.ie/>

12.3.1. AC 1. Data tables - consultations

In the period between 01/01/2024 and 18/06/2024 the combined number of accesses to the website releases for the different census publications on the website were 232,231. Of these 137,104 were unique users.

The most accessed publication was the migration and diversity with 25,374 views from 14,203 unique users, followed by the summary results with 20,253 views from 12,017 unique users.



12.4. Micro-data Access

A pseudonymised research microdata file relating to persons at work, students and children who were enumerated and usually resident in the State are available to bona fide researchers for the purposes of research on commuting patterns etc, please see <https://www.cso.ie/en/census/census2022/powscar/> for further information.

A pseudonymised Census Longitudinal Dataset which includes a 10% sample of people selected from the 2016 and 2022 censuses is available to bona fide researchers. The sample is of usual residents in Ireland who were born on one of 37 randomly chosen dates. Within the sample people who were present in both the 2016 and 2022 censuses will have their census data linked over time. The dataset contains a wide selection of census variables which are selectively top coded to prevent disclosure.

12.5. Other

Information about the consultation held to decide upon the content and outputs from Census 2022 in Ireland can be found here:

<https://www.cso.ie/en/census/census2022consultationonformcontent-closed/>

<https://www.cso.ie/en/census/census2022consultationonoutputs-closed/>

Census Small Area Population Statistics (SAPS) are available across a wide range of variables. Small Area statistics were first published for Census 2011 following work undertaken by the National Institute of Regional and Spatial Analysis (NIRSA) on behalf of Ordnance Survey Ireland (now Tailte Éireann) and in consultation with the CSO. They were designed as the lowest level of geography for the compilation of statistics in line with data protection guidelines and typically contain between 50 and 200 dwellings. Census 2022 Small Areas have been redrawn to ensure they remain consistent with the principle of data protection and are relatively comparable in size. This redraw was necessary following changes in population size and distribution between 2016 and 2022 and was done by the CSO with support from Tailte Éireann.

A census resource for schools is available here:

<https://www.cso.ie/en/census/censusforschools/censusschoolsresources/>

This resource is provided to schools to help students understand what the census is about, to learn how and why a census takes place and to teach the value of census information for society, communities and individuals.

12.5.1. AC2. Metadata consultations

The census methods webpage (<https://www.cso.ie/en/methods/population/censusofpopulation/>) was accessed 1,338 times between 01/01/2024 and 18/06/2024.

12.6. Documentation on Methodology

Further information on the Methodology used to compile the census can be found in the CSO's Methods page <https://www.cso.ie/en/methods/population/censusofpopulation/>

Further information can be found in the background notes of the publications and in the related content section found on the following web page:

<https://www.cso.ie/en/statistics/population/censusofpopulation2022/>

12.6.1. AC3 – Metadata completeness – rate

100%.



12.7. Quality Documentation

The census took place within the context of the Central Statistics Office's quality framework. More information on this can be found at the link attached.

<https://www.cso.ie/en/methods/population/censusofpopulation/>

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.

There were several aspects of quality assurance contained within the census process.

- Census forms were subject to quality testing during printing to reduce the possibility of printing errors which could affect scanning and data capture. The quality checking was performed both in-house by the company responsible for printing the forms and by the CSO on receipt of the forms. The checking was performed on a random selection of pages both from printed reels and completed boxes of forms. It involved a range of visual inspections on colour, blemishes, alignment and page order, colour checking with a densitometer, form drop out on scanning and testing of barcodes.
- All Enumerators were given a list of dwellings in their Enumeration Area (contained in a bespoke smartphone application, the CMS) which were also printed on a corresponding map to help them locate the dwellings. These dwellings were taken from the An Post Geodirectory, a database of property addresses in Ireland. In advance of the census, CSO estimated that up to 2% of actual dwellings may be missing from the Geodirectory. To ensure that dwellings which were not on the Geodirectory were not missed during enumeration, the CSO facilitated the addition of unlisted dwellings by Enumerators. In order to incentivise Enumerators to add these unlisted dwellings, an additional fee was paid for finding 'new' dwellings which did not appear on the CMS/map.
- All census Enumerators were subject to a structured quality assessment within days of taking up the job. This assessment was conducted by their immediate supervisor, the Field Supervisors and was subject to oversight by the next line of management, the Regional Supervisors. The assessment involved the Field Supervisor observing the Enumerator's work at first hand and making an assessment on their ability to follow selected field procedures. Enumerators who did not meet the expected quality levels were required to receive additional training and would be subject to further monitoring by the Field Supervisor. Enumerators who could not correctly follow procedures after further monitoring were subject to dismissal and replacement.
- After several visits to a dwelling an Enumerator could decide that the dwelling was unoccupied. To verify this, Enumerators were instructed to seek information about the dwelling from neighbours as well as to call back after Census Night to ensure that the dwelling was still unoccupied. If contact was made at this stage, a census form was issued to the household with instruction to complete it. The instruction to carry out multiple visits to apparently unoccupied dwellings and to speak to neighbours was intended to reduce the possibility of occupied dwellings being missed in the census count.
- Enumerators performed a 'doorstep check' on the collected census form in the presence of the householder once the form was handed over. This check ensured that all persons present in the household on Census Night were accounted for on the form (enumerators had recorded the number of males and females expected on Census Night at the form delivery contact) and that the relevant questions for each person were correctly completed. It was designed to limit occurrences of unit no-information.



- Provision was made for dwellings which were known by the Enumerator to be occupied, but where the householder could either not be contacted or refused to complete a form. Under Irish legislation, all householders present in the country on Census Night were obliged to complete a census form. In rare cases where a completed form could not be collected, intervention from Field and Regional Supervisors was required, usually concluding in a visit in person from the Regional Supervisor to the householder to make him/her aware of legal obligations to complete the census. For any occupied dwelling where a Census enumerator failed to collect a completed census form, the Enumerator was required to either input the number of people in the dwelling and include basic demographic characteristics for them based upon local enquiries, or alternatively flag the dwelling on their smartphone application (CMS) as being occupied. This facilitated the CSO in adding person records and attribute data to each dwelling flagged in this way from administrative data sources.
- The information gathered in the CMS was used to construct real time databases available to all levels of management within the field and the CSO. This data provided rich insights into the progress of the field operation and early identification of problem areas, which allowed resource reallocation as required.
- In a relatively small number of cases, enumerators were unable to provide information as to whether dwellings in their area were occupied or not. For these dwellings, CSO used utility data (Water and electricity consumption data) to identify whether the dwelling was likely to be occupied based on the consumption of water and electricity. Where dwellings were deemed likely to be occupied, people were imputed into them using administrative data sources or a crude average household.
- The census processing system was designed to capture, validate, repair and code information on census forms. All census forms were electronically scanned and information on the forms were then captured and processed. Each question was validated and cross checked against other responses within the form.
- In addition a Quality Assurance (QA) system selected a random sample of census data which was re-processed by a different operator(s). The QA approach was to present previously repaired or coded data to a verification operator, who did not previously repair or code the data. The verification operator would then repair and/or code as they would normally. If the verified repaired/coded value was the same as the original value, then the QA result was considered a 'pass'. If they disagreed, the unrepaired/uncoded value, was presented to an arbitration operator. If the arbitration operator output agreed with the original output the QA result was considered a 'pass'. If they agreed with the verification operator it was considered a 'fail'. The QA metrics were used by supervisors to determine whether additional training of operators was needed. QA sampling rates were increased or decreased depending on the expertise/QA metrics of the operator.
- The majority of dwellings and people captured on the census form were linked to administrative data sources. This facilitated the addition of some missing variables for dwellings and individuals where the equivalent variables were available through administrative sources.
- Limited imputation was also performed for the variables: date of birth, sex, marital status and principal economic status. The method used for imputation was the use of rotation files which mainly used the distribution of variables from Census 2016 to impute for missing values.
- Data exported to the outputs database was further subject to quality macro checking and analysis by CSO statistical staff using SAS software. This checking took the form of comparing aggregates to 2016 data and cross-tabulation of related variables to ensure consistency of data.

13.2. Quality Assessment

Census 2022 took place within the context of the Central Statistics Office's quality framework. More information on this can be found here:

[Statistical Standards and Quality - CSO - Central Statistics Office:](https://www.cso.ie/en/methods/quality/statisticalstandardsandquality/)
<https://www.cso.ie/en/methods/quality/statisticalstandardsandquality/>

[Quality Management Framework - CSO - Central Statistics Office:](https://www.cso.ie/en/methods/quality/qualitymanagementframework/)
<https://www.cso.ie/en/methods/quality/qualitymanagementframework/>



[CSO Quality Statement.pdf](https://www.cso.ie/en/media/csoie/aboutus/documents/CSO_Quality_Statement.pdf)

https://www.cso.ie/en/media/csoie/aboutus/documents/CSO_Quality_Statement.pdf

13.2.1. Coverage assessment

The Central Statistics Office are developing a new experimental methodology for producing population statistics from administrative data sources independently of the census. This project (known as IPEADS: Irish Population Estimates from Administrative Data Sources) involves creating an annual estimate of the number of people usually resident in Ireland. The rationale for this approach is that almost every person who usually lives in Ireland has some level of interaction with government departments or agencies directly or indirectly, through a spouse or dependant, such as through taxation, benefit or pension payments or enrolment in education. Administrative data records from other government bodies allow the CSO to identify persons who interacted with government departments or agencies in 2022. The underlying assumptions and methodologies are different to the census, and therefore disparities are to be expected and can be seen. Further information about this project can be found here:

<https://www.cso.ie/en/releasesandpublications/fp/fp-ipeads/irishpopulationestimatesfromadministrativedatasources2022/>

The census 2022 data was compared against the 2022 IPEADS estimates to examine potential undercoverage and overcoverage by age and sex.

Some of the key elements are detailed below.

IPEADS population:

- absolute value – 5,333,823

Census population:

Note: For comparative purposes, the census population figure used here is the usual resident population including persons absent on census night. These estimates can be found here:

<https://www.cso.ie/en/statistics/population/populationandmigrationestimates/>

- absolute value – 5,183,900
- percentage of the IPEADS population – 97.2%

Under-coverage (estimated)

absolute value – 149,923

- percentage of the IPEADS population – 2.8%

Under-coverage (calculated as the Census 2022 estimate minus the IPEADS population estimate as a percentage of the IPEADS estimate) was estimated to be higher for males (-3.9%) than females (-1.7%). Under-coverage was also estimated to be highest for the population aged 25 to 29 years (-8.5%), followed by the population aged 30 to 34 years (-7.3%).

Over-coverage was estimated to be highest in older female age cohorts particularly those aged 85 and over (2%) and among males and females aged 15 to 19 (0.8%).

Table 1: Percentage Over/Under coverage

Age	Both sexes	Male	Female
All ages	-2.81	-3.90	-1.73
0 - 4 years	-2.75	-2.79	-2.71
5 - 9 years	-1.56	-1.69	-1.42
10 - 14 years	-0.64	-0.78	-0.49
15 - 19 years	0.81	0.85	0.70



20 - 24 years	-3.00	-3.73	-2.24
25 - 29 years	-8.46	-10.29	-6.56
30 - 34 years	-7.35	-9.43	-5.33
35 - 39 years	-5.55	-7.45	-3.74
40 - 44 years	-4.34	-5.98	-2.68
45 - 49 years	-3.72	-5.28	-2.13
50 - 54 years	-2.33	-3.81	-0.87
55 - 59 years	-1.01	-2.30	0.29
60 - 64 years	-0.33	-1.15	0.48
65 - 69 years	-0.46	-1.66	0.73
70 - 74 years	-0.81	-1.82	0.18
75 - 79 years	-1.14	-2.13	-0.22
80 - 84 years	-0.36	-1.53	0.43
85 years and over	0.75	-1.28	2.01

14. Relevance

14.1. User Needs

As part of the preparation for the following census a public consultation process is followed on both census content and census outputs. This allows all stakeholders to provide input into what they would like to see on the next census in terms of questions and outputs. Detailed information on both processes for the 2022 census can be found at the links below.

Public consultation on census form content;

<https://www.cso.ie/en/census/census2022consultationonformcontent-closed/>

Public consultation on census outputs;

<https://www.cso.ie/en/census/census2022consultationonoutputs-closed/>

14.1.1. Main National Users

Census data is used extensively across all areas of Government and by public bodies at national, regional and local level, as well as by private sector businesses and organisations, and by various interest groups and community and voluntary bodies.

At **national** level, current population statistics are essential for identifying changing demands for and planning the provision of vital public services such as health care, education, transport, employment / training services.

Regional figures are critical for determining regional policy and for the operation of regional authorities.

The detailed population figures at **local** level provided by the census are integral in helping to identify current and future demands for public facilities such as schools and hospitals, as well as areas of relatively high unemployment, the best location for new shops etc.

The Irish Constitution (Bunreacht na hÉireann, Article 16.2) provides that the total membership of Dáil Éireann (national parliament) depends on the population as measured by the census (i.e. 1 TD - member of parliament - per 20,000 to 30,000 persons). Constituency reviews normally take place once the definitive results of the census have been published. The census is also the only means of accurately measuring the exact extent of migration.



14.1.2. Principal External Users

Eurostat, international bodies.

14.2. User Satisfaction

No user satisfaction survey is taken directly after a census. As noted above, the CSO requests views and submissions from users of the census data and the general public on the content of the census form prior to each new census. Proposals for changes to questions / addition of new questions etc are considered and where relevant trialled in a pilot survey. Details of the public consultation on the census form can be found in the link above.

14.3. Data Completeness

All the expected variables and breakdowns are available.

14.3.1. Data Completeness rate

100%.

15. Accuracy and reliability

15.1. Overall accuracy

The census de facto population was 5,149,139, of which 4% (207,141 people) were imputed. See the section on coverage assessment for detailed information on comparison of census data with administrative data sources.

Impact of the COVID 19 pandemic on data accuracy

The census was originally scheduled to take place on the night of Sunday, 08 April 2021. Following advice from the CSO, the government decided in September 2020 to postpone the census for approximately one year owing to the ongoing difficulties arising from the Covid-19 pandemic. The date of the census was chosen to coincide with a period when as many people as possible were at their home address and consequently the figures closely approximate the normally resident population.

The CSO faced a number of challenges in conducting Census 2022 due to the pandemic, and in terms of recruiting and retaining enumerators in a relatively small number of areas around the country. Where issues arose, the CSO strove to ensure that all households in those areas received a census form, by primarily using the postal system to send forms directly to these homes. Freepost envelopes were also provided to the householder to enable them to return their completed forms. The CSO estimates that 96% of occupied homes returned completed census forms. For the homes where forms were not returned, the alternative data sources such as administrative data were used to ensure a complete population count.

15.2. Sampling Error

Not applicable for register based and traditional censuses.

15.2.1. A1. Sampling error indicator

Not applicable.

15.3. Non-sampling Error

The census is conducted using a traditional field methodology whereby every Enumerator (5,100 Enumerators) physically calls to every habitable dwelling in the State. This means there is no target population or sampling errors. Measures (outlined in 13.1) were also designed to improve the



accuracy and completeness of the census count and the data collected.

The use of information collected by enumerators on the smartphone and administrative data for non-responding occupied dwellings, was used to reduce possible under coverage. For Census 2022, a new smartphone application enabled enumerators to record information about every home in their area. Enumerators had to account for all dwellings as either occupied, unoccupied or not suitable for habitation. Dwellings which were found to be unoccupied were categorised as either vacant, holiday homes or temporarily absent. Enumerators were required to continuously call back to households which were occupied on census night to get a return from the householder. For any occupied dwelling where an Enumerator was unable to collect a completed census form, the Enumerator was required to record, when possible, the number of people in the dwelling and basic demographic characteristics based upon local enquiries, and flag the dwelling as occupied. This facilitated the addition of people and attribute data to every dwelling flagged in this way from both the demographic information the Enumerator recorded and administrative data sources. In a relatively small number of cases, Enumerators were unable to provide information as to whether a dwelling was occupied or not. For these dwellings, utility data (water and electricity consumption data) was used to identify whether the dwelling was likely to be occupied based on the consumption of water and electricity. Where dwellings were deemed likely to be occupied, people were imputed into them using administrative data sources or a crude average household. A total of 81,275 households and 207,141 persons (4.0% of the usually resident population) were imputed for non-responding occupied dwellings.

There were also a number of checks to ensure that all persons in the household on Census Night were reflected in the population count. **Three separate counts** were cross-checked as follows:

- a. The number of males, females and persons in the household recorded by the Enumerator on the front of the form (obtained by a manual count of persons on the form)
- b. The number of persons listed as being present in the household on page 3 of the form (obtained by doing an Optical Mark Recognition (OMR) count of rows where a person's name was entered)
- c. The number of persons for which data was entered by the householder.

A person was considered to exist by the processing system if data was detected in any of the key fields which included: Name, Sex, Date of Birth and relationship to person one. If the number of persons present from the three counts were inconsistent a message was displayed to operators during census processing. In cases where a person was counted in b) but not in c) a male or female was added to the household depending on the sex of the person's name. Date of birth and other key fields were imputed. If c) was greater than b) and a person had been generated by noise on the form, for example where a person had written not applicable across the form this 'phantom' person was deleted.

15.3.1. Coverage error

No register information feeds into the census apart from the use of the An Post GeoDirectory, a database of property addresses in Ireland. All Enumerators were given a list of dwellings in their Enumeration Area taken from the Geodirectory. In advance of the census, CSO estimated that up to 2% of actual dwellings may be missing from the Geodirectory. In order to ensure that dwellings which were not on the Geodirectory were not missed during enumeration, the CSO facilitated the addition of unlisted dwellings by Enumerators.

The Enumerators were paid based on how successful they were in collecting completed census forms from members of the public. Enumerators had an average of 430 dwellings in their area. In 2022, they were paid €4.10 for every completed census form they collected. They were only paid €1.20 for each vacant home in their area, so Enumerators were strongly incentivised to persist in attempting to make contact with householders.

Estimates of under and over coverage are given in section 13.2.1.



15.3.2. Measurement error

The core set of demographic and socioeconomic questions on the census form are carried over and repeated from census to census. After each census a public consultation exercise is carried out to look at the content on the subsequent census form. All stakeholders are invited to provide input on the census questions (including changes/additions/deletions). Any changed/new questions that arise from that process are then tested in a pilot. Details of the Public consultation on the 2022 census form content and the 2018 Pilot can be found here:

<https://www.cso.ie/en/census/census2022consultationonformcontent-closed/>

The census forms were personally delivered to each household/communal establishment by census Enumerators, who were provided with training, including detailed manuals, in advance of commencing delivery. The enumerators were managed by supervisors who were also provided with training and manuals, and were managed by Census Liaison Officers, who also received training from census HQ staff. When the Enumerator collected the completed census forms s/he was instructed to check that the information provided was accurate. A critical check was to ensure that every person who spent census night in the household or establishment was properly enumerated. The Enumerator was also instructed to check through the form to discover areas of potential error and to have them corrected with the agreement of the householder. In no case could an enumerator alter the information provided on the census form. The Field Supervisors also check a sample of the collected forms to ensure that the enumerator was carrying out his/her duties in a thorough way.

Further checks were carried out during Processing, see below.

15.3.3. Non-Response Error

15.3.3.1. Unit non-response rate

When Enumerators flagged on their smartphone application that a dwelling was occupied on Census Night but it was not possible to collect a census form, an attempt was made by CSO to add persons to that address. The information recorded by the enumerator and/or administrative data sources was used to add people to the non-responding households. In a limited number of cases, Enumerators were not able to establish whether a dwelling was occupied or not. In these cases, an attempt was made by CSO to identify whether the dwelling was occupied using utility data for that address. This entailed looking at electricity and water consumption where available and making an estimate on consumption patterns whether the dwelling was likely to be occupied. Where it was deemed to be occupied, administrative data was added to populate the dwelling with persons and attributes where possible.

A total of 81,275 households and 207,141 persons (4.0% of the usually resident population) were imputed for non-responding occupied dwellings.

Additionally, information on very young children from the birth register was added to the census file where it was found that these children had not been included at the address at which they had been registered. This was done to alleviate an undercount of very young children which has been an issue on recent censuses in Ireland.

15.3.3.2. Item non-response rate

Item non-response rates varied across the range of questions on the census form. For Household variables the non-response rate varied from 2% for the question on type of water supply to 11% for the questions on smoke alarms and the use of renewable energy sources.

For the key person fields of date of birth, sex, marital status and principal economic status there was zero non-response as any missing values were imputed using administrative data or rotation files (see section 20.5.1). For other main person variables, the non-response rate varied from 3% for citizenship to 8% for occupation (working population only).



15.3.3.3. Processing error

Validation was ongoing through the census processing system with 294 fatal edit checks, 185 warning error checks and other checks on data captured from the collected and scanned census forms. Edits were essentially checks built into the processing software to ensure that the data captured was logical. When data failed an edit check, it was required to be either verified in the case of warning edits or corrected by the operators.

Final data validation was performed by analysing a series of tables generated from the compiled census data. The tables included cross-tabulations of all census variables, comparison tables with Census 2016 data, comparison tables with external sources (e.g. surveys and administrative data sets) and tables displaying data pertaining to the processing of census data. These tables were analysed by statistical staff for possible anomalies and inconsistencies in the data. Where such potential issues arose, the source data was re-examined. This could be done on a macro level through interrogating the census data using SAS, and on a micro level by identifying individual census returns and re-opening them through dedicated viewing software to ensure the forms had been correctly captured and coded. Where miscoding or erroneous data capture was detected, data was amended either on a micro form by form level or by macro editing using SAS. If any data on a form was changed the entire suite of 294 Fatal edit checks was re-run on that household to ensure that no erroneous data came through the system.

16. Timeliness and punctuality

16.1. Timeliness

The Preliminary Results from Census 2022 were published on 23 June 2022. The first detailed results from Census 2022 were published on 30 May 2023. Further results (8 thematic reports) were published on a rolling basis up to and including December 2023 (20 months after census night), with the exception of a publication on the Homeless which was published in May 2024 and a spotlight publication on volunteering published in February 2024. A joint census publication combining the 2021 census of population in Northern Ireland and the 2022 census of population in Ireland was created by the CSO and the Northern Ireland Statistics and Research Agency (NISRA) and was published in July 2025.

16.1.1. TP1. Time lag – First results

The Preliminary Results from Census 2022 were published within 3 months of the reference period.

16.1.2. TP2. Time lag – Final results

The final results were published within 14 months of the reference period.

16.2. Punctuality

The majority of Census results were published in 2023 in line with the expected timelines. The publication on Homelessness was originally scheduled for 16 November 2023 but was delayed until 23 May 2024 to allow additional time for analysis.

16.2.1. TP3. Punctuality – Punctuality - delivery and publication

Not calculated.

17. Comparability

17.1. Comparability – Geographical

A review of the geographical boundaries is undertaken by the Central Statistics Office (CSO) after each census, i.e. every five years. As part of the most recent review which took place after Census 2016, it was decided to broaden the examination of urban boundaries to include key stakeholders and a working group



was formed in 2019 between the CSO, the Department of Housing, Local Government and Heritage (DHLGH), and Ordnance Survey Ireland (OSi, now Tailte Éireann). The three organisations agreed to examine urban boundaries in Ireland, and a formal methodology was developed and agreed. The outcome of this working group was the creation of a new urban geography called Built Up Areas (BUAs) which has been used to produce Census 2022 data for urban areas. The BUAs were developed from clusters of urban development and their boundaries reflect land use for urban purposes. In order to remove the risk of statistical disclosure, the BUAs are comprised in their entirety of whole Statistical Small Areas, which were subject to a separate review following the last census. As BUAs have been defined differently to the Settlements used in Census 2016, it is not possible to compare them directly. Total population from Census 2022 for the 2016 Settlements is available as part of Profile 1, but this is provided for comparison purposes only. No attribute data will be published for the Settlements as this would create disclosure risk. Further details of the development of BUAs can be found here:

<https://www.cso.ie/en/census/census2022/census2022urbanboundariesandbuiltupareas/census2022urbanboundariesandbuiltupareasfaq/>

The boundary of Cork City was changed in 2019 with some areas previously included within the Cork County boundary moving to the city. This means that the Cork City boundary used in Census 2016 is not comparable with the Cork City boundary used for Census 2022. The main tables in the Census 2022 publications provide comparisons for the entire county of Cork, where the external boundary has not changed. There are tables also provided on Cork City, however for these tables it is not possible to provide comparisons with Census 2016 data due to the boundary change.

17.1.1. CCI. Asymmetry for mirror flow statistics

Not applicable.

17.2. Comparability over time

Multiple questions that appeared on the Census 2016 form changed on the Census 2022 form following the consultation with users that took place between 2017 and 2019. These changes include alterations to text, question format and population cohorts required to respond to questions.

Changing questions can impact upon the response provided by the public. This, in turn, impacts upon the published census data. Data users should be conscious of this when comparing data between Census 2022 and previous censuses.

For some variables, CSO has drawn a direct comparison between Census 2022 data and data from previous censuses where questions have changed. This was done in order to provide context to data users, but the caveat above applies to these comparisons. A summary of the key question changes between Census 2016 and Census 2022 is listed below. Full details of all of the changes and the rationale for them can be found at the following link which documents the user consultation process for Census 2022:

<https://www.cso.ie/en/census/census2022consultationonformcontent-closed/>

Census 2022 Question	Census 2016 Question	Topic	Key Changes
10	10	Nationality/Country of Citizenship	2016 question asks for nationality, 2022 question asks for country of citizenship.
11	11	Ethnic group	2016 question asks for ethnicity, 2022 question asks for ethnic group or background. Response categories changed in 2022 question.



Census 2022 Question	Census 2016 Question	Topic	Key Changes
12	12	Religion	2016 question asks 'What is your religion?'. 2022 question asks 'What is your religion, if any?'. Response categories changed in 2022 question. 'No religion' is the first response option in 2022.
15 & 16	16 & 17	Long lasting conditions and difficulties	Two response options for each category in 2016. Increased to three response options in 2022. Filter between questions in 2016 was removed in 2022. Question 16 in 2022 includes instruction to include issues due to old age.
19	19	Means of travel	2022 question includes travel to place of childcare.
23	22	Carers	2022 wording changes to expand the definition of care, categories of person cared for and reasons for care.
27	25	Level of education	Several examples of educational qualifications were removed from the question text and made available online instead.
28	27	Present principal status	2016 category 'Unemployed' broken into 'Short-term unemployed' and 'Long-term unemployed' in 2022.

17.2.1. Length of Comparable Time series

Census results are available from 1841 with varying levels of aggregation available for each census.

17.3. Coherence – cross domain

The results of the Labour Force Survey (LFS) provide the basis for the official series of quarterly labour force estimates. The labour force and its constituent figures shown in the census publications are directly based on the census. Figures derived from identical questions in the census and LFS for the same year show some appreciable differences. The main categories affected are the constituents of the question on principal economic status and the employment estimates classified by industry and occupation.

The main reasons for the differences are:

- The LFS uses the International Labour Organisation (ILO) classification, which has a much wider range of questions on the labour force and which may have a bearing on the responses received to individual questions. Under the ILO criteria, employment, unemployment and inactive population are defined as follows:

- In employment: Persons who worked in the week before the survey for one hour or more for payment or profit, including work on the family farm or business and all persons who had a job but were not at work because of illness, holidays etc in the week.
- Unemployed: Persons who, in the week before the survey, were without work and available for work within the next two weeks, and had taken specific steps, in the preceding four weeks, to find work.
- Inactive population (not in labour force): All other persons.

- The census form is completed by a responsible adult in each household throughout the State in respect of everyone present in the household on Census Night while the LFS is collected by in person and telephone-based survey interviews.



- The census relates to all persons present in the State (including visitors from abroad) at the time of the census while the LFS covers persons usually resident in Ireland.
- The census is a complete enumeration while the LFS is a sample survey.

The chief difference resulting from this is that the census records an unemployment rate (based on Principal Economic Status) of 8 per cent, compared with the official rate (based on ILO criteria) of 4.6 per cent for Quarter 1 of 2022.

Notwithstanding these differences, the main strength of the census-based data on employment and unemployment is the provision of data for small geographic areas, analysis on the comparisons between areas, the provision of data on unemployment blackspots, and other analysis across multiple variables such as marital status, detailed country of citizenship.

17.3.1. Coherence – Sub annual and annual statistics

Not applicable.

17.3.2. Coherence with National Accounts

Not applicable.

17.4. Coherence – internal

All census data is produced from a singular data set, and as such there is no known internal incoherence.

18. Cost and Burden

The estimated cost for Census 2021 was €66m over a 5-year term. Due to Covid-19, Census 2021 was postponed to 2022 and the cost of the postponement and mitigations is estimated to have increased this by approximately 6%. The 2022 Census project had a 6-year term as a result of the deferral. This equates to approx. €39 per household or €13.60 per person over 6 years. In order to ensure cost effectiveness, several measures were undertaken:

- GIS was used to calculate the internal road distance for each rural Enumeration Area and Enumerators were paid a predetermined allowance for travel based upon travelling this distance. No further expense claims were permitted from rural Enumerators.
- In urban areas, Enumerators were paid the equivalent of three-monthly public transport tickets as a predetermined allowance to cover their travel expenses. No further expense claims were permitted from urban Enumerators.
- All expense claims from Field Supervisors, Regional Supervisors and Census Liaison Officers were subject to scrutiny and sign off by their immediate manager as well as a dedicated payments team in Census HQ. Running totals of expenses were available at an individual level for all members of field staff to allow early identification of possible excessive claims.
- All field staff were instructed to source free accommodation to conduct recruitment and training activities. In instances where this was not possible, rigorous scrutiny was applied by their immediate managers to ensure value for money was attained in securing accommodation

The response burden on households remained the same as in 2011 and 2016. Each household present in the State on Census Night was required to complete the relevant sections of a 24 page form. There were up to 30 questions for each person present, with fewer questions depending on age and economic status.



19. Data Revision

19.1. Data Revision Policy

Published statistics are subject to correction and revision for a variety of reasons. The most common reasons include the receipt of additional information (for example, late survey responses) and updated seasonal factors. Occasional revisions also occur as a result of changes to definitions, methodology, classifications and general updating of statistical series.

It is recognised internationally that the existence of a sound revisions policy maintains credibility in official statistics. The CSO General Revisions Policy, which details how revisions should be managed and communicated to users, outlines the three main types of revisions:

- Planned Routine Revisions
- Planned Major Revisions
- Unplanned Revisions.

One reason for unplanned revisions occurring can be when errors are detected after publication. The 'CSO Error Correction Policy – How to deal with Publication Errors' outlines the steps taken when these errors are detected. As required under Principle 6.3 of the European Statistics Code of Practice, errors detected in published statistics are corrected at the earliest possible date and users are informed. An important step in the process is the documentation and analysis of errors that have occurred and their causes. This allows the CSO to take measures preventing similar errors from occurring in the future and uniformity in dealing with them when they do.

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

No data revisions have taken place to the final national data published.

The preliminary data that is published within 3 months of the census is based on manual summaries by field staff. This methodology was clearly flagged in the national preliminary release. The final national data are based on the final fully processed national dataset, which does not represent a revision to the preliminary data, rather it is a completely different methodology.

19.2.1. Data Revision – Average size

Not applicable.

20. Statistical processing

20.1. Source Data

20.1.1. List of data sources

Ireland conducts a primarily conventional census which requires all households present on a designated night to complete a set of questions. The dataset compiled from the information contained in the completed census forms is the predominant source of data for all statistical units.

A small proportion (4%) of the person records contained within the census were derived from administrative data sources. These were added to the file when no census form was collected from a dwelling that was deemed to be occupied.

A statistical population register was built up using several administrative data sources that facilitated the addition of persons and households into the census file. These administrative sources are listed below.

**Child Benefit (CB)**

The Child Benefit dataset contains information on eligible children's benefit payments to parents/guardians. Data is supplied by the Department of Employment and Social Protection on an annual basis. The CRS Client file (see Central Records System (CRS) below) is used to identify children born in the year prior to the reference date and not yet in receipt of Child Benefit.

Primary Online Database (POD)

The Primary Online Database contains data on each student enrolled in each recognised primary school collected by the Department of Education. Data is supplied on an annual basis.

Post-Primary Online Database (P-POD)

The Post-Primary Online Database is a central database for student and some school data which is collected by the Department of Education. Data is supplied on an annual basis.

Primary Care Reimbursement Service (PCRS – GMS)

The PCRS is responsible for making payments to healthcare professionals – doctors, dentists, pharmacists and optometrists/ophthalmologists – for the free or reduced costs services they provide to the public across a range of community health schemes. The scheme is the infrastructure through which the HSE delivers a significant proportion of Primary Care to the public. PCRS also manages the National Medical Card Unit (NMCU) which was established in 2011 to process all Medical Card and GP Visit Card applications at a national level. Data is supplied by the HSE on an annual basis.

Higher Education Authority (HEA)

The Higher Education Authority data provides details on annual enrolments and graduations from the publicly funded universities and institutes of technology in Ireland. Data is supplied by the HEA on an annual basis. Address data from the HEA dataset records students' usual place of residence outside term time and is used to assign up to date off campus geography data for students.

Programme Learner Support System (PLSS)

The Programme Learner Support System is used to manage course information, learner records and reporting by SOLAS (an tSeirbhís Oideachais Leanúnaigh agus Scileanna). SOLAS is the Further Education and Training Authority. They provide a clear, integrated pathway for learners seeking to enrol in Further Education and Training. Data is supplied by SOLAS on an annual basis.

Quality and Qualifications Ireland (QQI)

Quality and Qualifications Ireland is an amalgamation of the previously operational Further Education and Training Awards Council (FETAC); the Higher Education and Training Awards Council (HETAC); the Irish Universities Quality Board (IUQB) and the National Qualifications Authority of Ireland (NQAI). Data is supplied on an annual basis.

Student Universal Support Ireland (SUSI)

Student Universal Support Ireland contains funding information for all higher and further education grants. SUSI offers funding to eligible students in approved full-time, third-level education. Data is supplied on an annual basis.

HEA Springboard

HEA Springboard and ICT provides information on students who have undertaken HEA springboard or ICT courses. This data includes course details and basic demographic information for enrolled students. Data is supplied by the HEA on an annual basis.

DSP Payments (DSP)

Department of Social Protection's database (real-time) from the Business Object Model implementation (BOMi) and Integrated Short-Term Payments System (ISTS) contains information on welfare payments, including state pension, unemployment benefit and child benefit (adults only). Data is supplied monthly.

**PAYE Modernisation (PMOD)**

The Revenue Commissioners' PAYE Modernisation (PMOD) dataset contains information on payslip submissions of persons in employment and on occupational pensions from 2019 onwards. Data is supplied monthly.

Form 11 Income Tax returns (ITForm11)

The ITForm11 contains the annual income tax returns of the self-employed. Data for a calendar year is only complete three years after the reference year, because of the nature of self-assessment, although the majority of records are available about 14 months after the reference year.

Linkage across multiple administrative datasets through a pseudonymised version of the PPSN used as a unique identifier ensures that persons who appear in more than one data source will be counted only once in the population.

Residential Tenancies Board (RTB) Register

The Residential Tenancies Board register contains information on all tenancies registered by landlords, both private and Approved Housing Bodies (AHB). Data is supplied by the RTB on a quarterly basis.

Local Property Tax (LPT)

The LPT file contains one record - the most recent LPT return - for each of the properties in the State. A local property tax return is not an indicator of activity but used to determine location (among other sources). Data is supplied by the Revenue Commissioner on an annual basis.

Central Records System (CRS)

The Central Records System is a legacy system within the Department of Social Protection (DSP) which holds data on their customers held on different systems within DSP. Data from the CRS used in this analysis includes information on age, sex, address, nationality and relationships (for example dependent children and marital status). Data is supplied by the DSP on a quarterly basis.

20.1.2. Population and sampling frame

Not applicable.

20.1.3. Sampling design

Not applicable.

20.1.4. Survey size

Not applicable.

20.1.5. Survey technique

Not applicable.

20.2. Frequency of data collection

Ireland conducts a national census every 5 years. Census 2022 was held on 03 April 2022. The next census is due to be held in 2027.

20.3. Data Collection**20.3.1. Type of Survey/Process**

The majority of the data contained within Census 2022 was collected by means of a conventional census, i.e. through census forms distributed to every household which was present in Ireland on the night of 03 April 2022, Census Night. Under Irish legislation (Statistics Act 1993 & Statistics Census of Population



Order 2020), participation in the census was compulsory for every household present on Census Night. The Census of Population Order 2020 also put a legal obligation on the manager of communal establishments to co-operate and facilitate the distribution and collection of individual forms to persons who spent Census Night in the establishment.

20.3.2. Census Form (including explanations)

The census form covered a range of demographic, social and economic topics. A number of core questions remain constant from census to census, however the full content of the census form, including any new questions, is arrived at following public consultation and subsequent pilot testing in the field. The Government then makes the final decision on the content of the census form in advance of every census. The CSO began public consultation on the content of the Census 2022 form in 2017. This involved publishing notices in the national press and writing to stakeholders requesting suggestions on new questions for inclusion or amendments to existing questions.

Subsequent to this a Census Advisory Group (CAG) was appointed comprising invited experts from across the public sector, research bodies and universities. The CAG discussed the submissions received and decided on which questions should be tested in a Census Pilot with a view to their inclusion in the census. The Census Pilot was held in September 2018, covering 32 Enumeration Areas which were chosen to provide a spread of urban and rural areas as well as some areas of socio-economic disadvantage. Two different versions of the Pilot form were distributed, each randomly to 50% of households, to allow for controlled testing of the new and revised questions. The CAG reconvened in early 2019 when the results from the Pilot were made available. Based on the results, the group made recommendations on the content and format of the questions for inclusion in the census. These recommendations were agreed by the Irish Government in July 2019 allowing finalisation of the content of the census form.

The areas covered in the Census 2022 form at individual level were (in order of questions):

Q1 Name
Q2 Sex
Q3 Date of birth
Q4 Relationship to other persons in the household
Q5 Marital status
Q6 Place of birth
Q7 Usual residence
Q8 Usual residence one year ago
Q9 Ever lived abroad, country of last previous residence and year of taking up residence in Ireland
Q10 Country of Citizenship
Q11 Ethnic Group/Background
Q12 Religion,
Q13 Irish language
Q14 Foreign language spoken at home and ability to speak English
Q15 & Q16 Disability
Q17 General health
Q18 Smoking
Q19 Means of travel to work, school, college or childcare
Q20 Time departing home for travel to work, school, college or childcare
Q21 Duration of journey to work, school, college or childcare
Q22 Time departing work, school, college or childcare to travel home
Q23 Provision of unpaid personal help to friend or family member
Q24 Volunteering
Q26 Age education ceased
Q27 Highest level of education
Q28 Present principal status
Q30 Working from home
Q31 Employment status



Q32 Occupation

Q34 Industry

Q36 Name and address of place of work, school, college or childcare

Q37 Childcare

The areas covered at the level of the household (housing characteristics) were:

H1 Year accommodation built.

H2 Ownership status

H3 Rent paid.

H4 Smoke alarms

H5 Number of rooms and bedrooms

H6 Type of central heating fuel

H7 Renewable energy sources

H8 Type of water supply

H9 Type of sewerage facility

H10 Number of cars or vans

H11 Internet access

Form design

The Census 2022 forms were specially designed to facilitate scanning and to allow for the automatic capture of data by the processing software. Coloured drop-out ink was used in the printing of the census forms and the positioning, dimensions and number of tick and write in boxes was decided with scanning and Optimal Character Recognition (OCR) in mind. The design process also had to ensure that the information presented on the census form was easily readable.

Several different census form types were designed to cater for multiple household types, communal establishments and the legal requirement to provide census forms in the Irish language. The census form types produced were as follows:

- English Household Form (24 page standard household form containing 3 pages of census questions for up to 6 persons in a single household. Also contained space to transcribe the dwelling address and census geography (see below), information about the census, instructions on completing the form, a page for listing persons present and absent from the household and a signature box)
- Irish Household Form (The English Household Form translated into the Irish language)
- English Individual Form (Four page form containing census questions to be completed by additional individuals in households of more than 6 persons, and by all individuals in communal establishments)
- Irish Individual Form (The English Individual Form translated into the Irish language)
- English Listing Form (A form to be completed by managers of communal establishments, listing all residents of the communal establishment on Census Night and indicating the type of Communal Establishment)
- Irish Listing Form (The English Listing Form translated into the Irish language)

Census geography

For the purposes of the census, the country was divided into approximately 5,100 geographical Enumeration Areas (EA), each containing an average of 400 dwellings. The addresses of these dwellings were sourced from the An Post (Irish postal service) Geodirectory, a national database of addresses. A Census Enumerator was assigned to each of the EAs and was responsible for the delivery and collection of census forms to every occupied dwelling in their area as well as accounting for all unoccupied dwellings. The Enumerators were supervised by over 400 locally based Field Supervisors. In turn they reported to 46 Regional Supervisors, who were based in regional offices throughout the country. The top level of field management consisted of six Census Liaison Officers who supervised the Regional Supervisors and were based in census headquarters in Dublin.

Every dwelling in each EA was allocated a 4-digit "D Number", which was unique to each EA within a county. The D numbers for dwellings identified on the Geodirectory were pre-printed on a map of each EA at the location of the dwelling. They were also listed in a smartphone application developed for the



census. The application allowed enumerators record their visits to each dwelling. The map and application were the key tools for Enumerators in the field and they were given detailed training and documentation on how to use them correctly. The D numbers were also linked to underlying X,Y co-ordinates on the Geodirectory which facilitated production of fully flexible geographic outputs after the census data had been collected and processed. Data has been published nationally at a number of levels of administrative geography including Province, County, NUTS, Electoral Division, Small Area, Dáil constituencies, Gaeltacht Areas, Local Electoral Areas and towns.

Field operation

The Enumerators began their work approximately one month before Census Night. They were instructed to complete a full visual enumeration of their area before commencing form delivery. This entailed traversing every street, road and publicly accessible thoroughfare in the EA to identify every dwelling in the EA. There were two objectives of the visual enumeration. First, to ensure that the Enumerator could locate every dwelling which appeared on his/her map and smartphone application. Second, to identify dwellings which may have been missing from their list. In order to produce a full count of households and persons, these missing dwellings had to be added to the map and application. On finding a dwelling which was missed on the map and application, Enumerators allocated a new unused D number to the dwelling marked it on their map and added it to the list of dwellings on their application. The location of these new dwellings were digitised from the maps returned by the Enumerators.

Once visual enumeration was complete, Enumerators were instructed to make contact with every household in their area and to issue the appropriate census form if the household would be present in the dwelling on Census Night. On handing the census form to the householder, the Enumerator was required to transcribe the dwelling address as well as the county, EA and Small Area code (see section 12.5) onto the form as well as the D number. In instances where more than one household occupied a dwelling, Enumerators were instructed to issue a new D number for the second household, to mark it on their map and add it to the application and to enumerate it separately to the first household (i.e. with a different census form). The locations of new households were also digitised from the Enumerator maps.

Dwellings with no census form collected were recorded on the application and allocated to one of eight categories. These categories were as follows:

1. Occupied but no census form collected
2. Temporarily absent
3. Vacant
4. Holiday home
5. Under construction
6. Derelict
7. Commercial only
8. Does not exist

This was done to ensure there was a record for every dwelling in the state, occupied or not. For households who indicated that the entire household would be temporarily absent elsewhere in Ireland on Census Night, Enumerators took the address details of where each member of the household would be staying and through a web-based tracking system made contact with the Enumerator of the EA in which the household member would be staying as a verification check. For households who indicated that they would be absent abroad on Census Night, Enumerators were required to look for proof of the trip abroad (e.g. travel tickets, proof of accommodation booking). In the case where only some household members were absent on Census Night the following details of absent members of the household were collected at the back of the census form:

Name
Sex,
Date of birth,
Relationship to present person 1
Marital status
Duration of absence
Was the person in the Republic of Ireland on Census Night



Country of citizenship.

Enumerators were instructed that any new dwellings added to their map and smartphone application which were not on the Geodirectory list could not be allocated dwelling statuses of Under construction, Derelict, Commercial only or Does not exist. This meant only habitable dwellings which were not on the Geodirectory were added.

In the case of vacant houses, flats/apartments and holiday homes, Enumerators were required to visit the dwelling on multiple occasions both before and after Census Night to ensure that they had not missed the householder on a previous visit. They were also directed to leave a 'Calling card' at the dwelling with instructions on how the householder could contact the Enumerator. Enumerators were also instructed to make contact with neighbours to verify that the dwelling was not occupied. In rare instances where an Enumerator could not collect a completed form from an occupied dwelling after multiple visits, they flagged the dwelling as occupied without a form. This facilitated the CSO in adding people to these dwellings during processing, primarily using administrative data

For communal establishments (i.e. managed residential accommodation including hotels, prisons, hospitals, nursing homes etc) Enumerators made contact with the manager of the establishment and requested that he/she list all persons residing in the establishment on Census Night on a Listing Form. The manager was then required to distribute Individual census forms to every person spending the night in the establishment. Each completed Individual Form and the Listing Form were then collected by the Enumerator after Census Night. Top priority was given to these early on the morning after Census Night to ensure that persons leaving hotels etc returned a completed Individual Form.

Several field aids were made available to Enumerators in order to maximise the number of households contacted and forms delivered. These included mobile phones for contacting householders, translations of the census form into foreign languages, large print and braille forms and other aids for people with visual impairment.

In order to monitor the progress of the field operation in each EA, field managers and the CSO had access to a detailed database of information generated from the data added to the smartphone application. This facilitated early intervention in problem areas and reallocation of resources as required.

Publicity

The census field operation was supported by a nationwide media campaign to raise awareness of the census. Advertisements were run on national television and newspapers and on national and regional radio while targeted information was provided via social media. The CSO also worked with several organisations representing minority groups to ensure that the importance of every household being included on the census was conveyed and to facilitate full enumeration of persons belonging to these groups. A census website (www.census.ie) was developed containing information on completing the census form, the benefits of the census and a facility to log requests for help. In conjunction with this, a national freephone number and online helpdesk were established to facilitate members of the public in seeking advice on all matters related to the census.

Collection and summarisation

Collection of the completed census forms began after Census Night and ran until early May 2022.

Enumerators were required to call back to every household and Communal Establishment to which they had delivered a census form, on multiples occasions if required, and also to revisit dwellings categorised as vacant in order to confirm that they were unoccupied on Census Night. On collecting the forms from householders, Enumerators were required to perform a "doorstep check" on the form to ensure that no members of the household had been omitted or double counted.

Having collected all the completed forms for their area, Enumerators performed a manual summary, sending the total number of males, females, households and dwellings by dwelling status separately for each Small Area in their EA to the CSO. On receiving this data from all of the Enumeration Areas, CSO collated the data and published a preliminary population count in June 2022.



Having completed their manual summary, Enumerators boxed and returned their completed forms to Census HQ for scanning and processing in order to generate the definitive census results.

20.3.3. Data Collection – Register Based data

Data from administrative sources was used in the census process in several ways. When enumerators flagged on their smartphone application that a dwelling was occupied on Census Night but it was not possible to collect a census form, an attempt was made by CSO to add persons to that address from administrative data sources along with limited attribute data which was available on administrative records. In a limited number of cases, enumerators were not able to establish whether a dwelling was occupied or not. In these cases, an attempt was made by CSO to identify whether the dwelling was occupied using utility data for that address. This entailed looking at electricity and water consumption where available and making an estimate on consumption patterns whether the dwelling was likely to be occupied. Where it was deemed to be occupied, administrative data was added to populate the dwelling with persons and attributes where possible. An attempt was made to match all persons captured on census forms to administrative data, using their names, dates of birth, sex and address. Where this match was successful, it facilitated adding missing attribute data which was available from administrative sources. Finally, information on very young children from the birth register was added to the census file where it was found that these children had not been included at the address at which they had been registered. This was done to alleviate an undercount of very young children which has been an issue on recent censuses in Ireland.

The data sources listed in section 20.1.1 were used to add persons and attributes from administrative data sources. These sources are compiled and maintained by government bodies and accessed by the CSO using national legislation. They were linked to the census data using a pseudonymised version of their Personal Public Service Number which was added to most census records during census processing.

20.3.4. Survey Participation

Participation in the census was compulsory for every household present on Census Night. The Census of Population Order 2020 also put a legal obligation on the manager of communal establishments to co-operate and facilitate the distribution and collection of individual forms to persons who spent Census Night in the establishment.

20.3.5. Data Capture

The data presented in the census is predominantly sourced from the conventional census form. A relatively small proportion (4%) is sourced from administrative records which are combined with the data from the conventional census.

20.4. Data Validation

Validation was ongoing through the processing system with several hundred fatal and warning error checks and other checks operating on data captured from the collected and scanned census forms. Edits were essentially checks built into the processing software to ensure that all dwellings were accounted for, and that the data captured was logical. When data failed an edit check, it was required to be either verified in the case of warning edits or corrected by the operators.

Final data validation was performed by analysing a series of tables generated from the compiled census data. The tables included cross-tabulations on all census variables, comparison tables with census 2016 data, comparison tables with external sources (e.g. Surveys and administrative data sets) and tables displaying data pertaining to the processing of census data. These tables were analysed by statistical staff for possible anomalies and inconsistencies in the data. Where such potential issues arose, the source data was re-examined. This could be done on a macro level through interrogating the census data set using SAS, and on a micro level by identifying individual census returns and re-opening them through dedicated viewing software to ensure the forms had been correctly captured and coded. Where miscoding or erroneous data capture was detected, data was amended either on a micro form by form level or by



macro editing using SAS. If any data on a form was changed the entire suite of Fatal edit checks was re-run on that household to ensure that no erroneous data got through the system.

20.5. Data Compilation

Completed census forms for 5,100 Enumeration Areas were returned by local field staff to census HQ where they were registered, sorted, and shelved by EA within counties. The census forms were then guillotined and passed through a high speed IBML scanner. Images from the scanner were passed to the census processing system to capture the responses made by householders and convert them into electronic data.

The purpose of the processing system was to recognise, clean, repair and code the electronic data before exporting it to an SQL database where it would be compiled into a final file to be used for census dissemination and publications. The processing system consisted of several 'stations' in a workflow, through which each census form passed and was subject to checks and edits. When data on the form was not automatically recognised by the system, where it failed edits or where an automatic code could not be attributed, the data was presented to a manual operator for coding, validation or amendment before the form could pass to the next station in the flow. The data presented to the operator varied depending on the station but generally consisted of scanned images of a census form which the operator viewed before making a decision on whether to amend the captured data.

The processing system stations (including a brief description of their functions) were as follows:

- File import

Scanned census forms were imported into the processing system.

- Automatic Image validation

The Image validation station attempted to match each individual image to the expected image templates and checked page and form sequencing. Once the correct page and form had been associated with the image the system knew where to find the data on the page and the data type and rules associated with that field.

- Manual Image validation

Operators identified and resolved any issues with census form pages which had not been automatically identified and resolved during Automatic Image validation.

- Intelligent Character Recognition (ICR)

The ICR station's role was to read data from the form. It relied on the page being identified in the previous stations (Auto and manual Image validation), with this information, the system knew where to identify the relevant data on each page. The purpose of the ICR process was to fully capture all individual characters, marks, ticks and numbers that appear in the capture regions of every census form. The ICR engine(s) were configured against the census forms and tuned and refined to ensure high quality capture of response data from all capture regions. Any unrecognisable data was repaired in the later manual processing stations.

- Automatic Pre-processing

The Pre-Processing station involved the following stages:

- Automatic text coding using direct text matching, CorrecText coding and Exorbyte.
- Application of coding rules for each field.
- Application of Edit checks

Coding text fields involved a search of a CSO Lookup file for the captured text string and where a match was found the associated code from the Lookup was recorded in the output. CorrectText and Exorbyte were used for automatic coding of specified text write-in fields. Firstly, CorrectText, a set of rules applied to automatically code text strings, was used to find a match. This took into account misspellings and misrecognition as well as unrecognised characters. Secondly, Exorbyte (a fuzzy matching tool), designed



to work with ICR captured data, used search algorithms to match text strings to text in the Lookup files. Exorbyte provided confidence scores for the matches. A configurable threshold score and distance (to the next best match) score was used to automatically code confident matches. Matches where the confidence score was not high enough, or the distance score was too low, were presented to operators in the manual stations to help inform their manual coding.

- Number validation

This station was used to identify numbers that had been identified correctly and those which had not. The station displayed the numbers in a tile format, which allowed the operator to quickly browse through each number and accept it or reject it. All numbers were grouped together to allow for easy identification. By presenting all the same numbers together on a screen it was easier to spot those that had been wrongly recognised (i.e. false positives).

By clicking on a number, it was then flagged for checking in the subsequent processing stations. All numeric write-in fields were verified in the Number validation station. Tiling of alpha fields was unnecessary because the automated coding routines could automatically code the bulk of alpha strings even with false positives and still give the correct code.

- HRN integrity and Reconciliation

This station ensured that the geography coding was correct across all forms relating to a household. Manual intervention was permitted where a form failed these checks. The purpose of the Reconciliation station was to compile and validate all census forms linked to a household/CE. If the Household Reference Number (HRN) was invalid, it would then route the forms to operators.

In the field Enumerators scanned the barcode on the bottom of the census form when delivering and collecting forms. The barcode along with the HRN was then recorded on the smartphone application. During processing the barcode and HRN data collected by Enumerators was used to check that the correct HRN was associated with the census form.

- Household and Person Repair and Code

The majority of the data coding and correction was performed in these stations. Most write-in alpha fields (e.g usual residence, citizenship, ethnicity, religion) were assigned codes against pre-defined Lookup code lists, either automatically or, where the text was unrecognised or failed an edit, by manual operator intervention.

- CE exceptions

Data associated with the type of communal establishment was repaired and coded in this station.

- Family Nucleus Coding

This station identified families within households and assigned a family nucleus code to each person. If this could not be done automatically, it was presented to an expert operator for manual coding.

- Industry Station

This station assigned an occupation and industry code based on the occupation and industry descriptions and the enterprise name and address written on the census form. Each text string was first processed automatically for both coding and edit rule validations. If a code could not be automatically assigned based on a pre-defined Lookup list or if an edit rule was failed, the data was presented to an operator for coding.

- Export

From this station, the data in the repaired and coded census forms were written to the outputs database. The captured images of the census forms and metadata were stored in a separate repository.

- Census Document Management System (CDMS)

This application allowed operators to view scanned census forms and the associated data and permitted amendment of the captured data if required. All modifications made to data in CDMS were subject to the full suite of edit checks. All changes made in CDMS were output to the final database.



Data written to the output database was then subject to the data validation described in Section 20.4.

- Place of work, school, college and childcare

About 40% of place of work and school coding took place when coding the industry code in the Industry Station. The remaining place of work addresses and address of school and college was done using a bespoke CSO application outside of the processing system. The application matched address strings against the Place of Work Lookup using the fuzzy matching software Exorbyte. Both the address string and the geo-coordinates of the place of residence and the Place of Work were used to allow proximity to improve the matching. The operator was presented with the 10 closest matches and either selected the correct one or changed the text to repeat the match. In a number of cases external searches such as Google were used to locate the correct place of work.

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

Imputation for household non-response:

For any occupied dwelling where an Enumerator was unable to collect a completed census form, the Enumerator was required to record, when possible, the number of people in the dwelling and basic demographic characteristics based upon local enquiries and flag the dwelling as occupied. This facilitated the addition of people and attribute data to every dwelling flagged in this way from both the demographic information the Enumerator recorded and administrative data sources (see section 20.1.1 for a list of administrative data sources used).

Imputation for item non-response:

An attempt was made to match all persons captured on census forms to administrative data, using their name, date of birth, sex and address. This facilitated the addition of some missing variables for dwellings and individuals where the equivalent variables were available through administrative sources. See section 20.1.1 for a description of the administrative sources used.

Limited imputation was also performed for the variables: date of birth, sex, marital status and principal economic status when data from administrative sources was not available. The method used for imputation of these variables was the use of rotation files which mainly used the distribution of the same variables from Census 2016 to impute for missing values.

20.5.1.1. A7. Imputation rate

A total of 81,275 households and 207,141 persons (4.0% of the usually resident population) were imputed for non-responding occupied dwellings.

The imputation rates for item non-response are shown in the table below. The rates are for the de facto population and include imputation for whole households that did not respond to the census. The percentages are out of the appropriate population, for example the Industry percentage is out of all persons aged 15 and over in work or unemployed.

Percentage of Household/Person records imputed from either Admin data or rotation files

Variable	Percent imputed
Household variables:	
YEAR BUILT	10.12
NATURE OF OCCUPANCY	2.36
LANDLORD TYPE (Rented households only)	9.06
RENT AMOUNT (Rented households only)	6.01
NO. OF ROOMS	5.63
NO. OF BEDROOMS	2.14
CENTRAL HEATING FUEL	1.92
RENEWABLE ENERGY	0.09
WATER SUPPLY	5.98



SEWERAGE SUPPLY	6.25
Person variables:	
SEX	3.98
DATE OF BIRTH	3.75
MARITAL STATUS	6.35
PLACE OF BIRTH	2.13
CITIZENSHIP	3.42
LEVEL OF EDUCATION	3.23
PRESENT ECONOMIC STATUS	7.03
EMPLOYMENT STATUS	2.96
INDUSTRY	6.38

20.5.2. Grossing and Weighting

Not applicable.

20.6. Adjustment

In line with international norms, the CSO has applied Statistical Disclosure Control techniques to the census 2022 data. This has been done to add greater protection to the privacy of individuals and households who responded to the census.

The preliminary population count, and the final definitive population count are slightly different. The difference is due to the preliminary count being based upon manual enumerator returns made during the field operation and the definitive final count being based upon the full processing and reconciling of every census form returned to the CSO. As in previous years, the difference between the two counts is relatively small so the preliminary count continues to provide a reasonably accurate estimation of the population a few weeks after the census has been conducted.

20.6.1. Seasonal Adjustment

Not applicable.