Standard SIMS Report:

Aviation Statistics

Single Integrated Metadata Structure (SIMS) Report

For

Aviation Statistics

This documentation applies to the reporting period:
2020 - 2024

Last edited: 12/06/2024

1. Table of Contents

2. Introduction

The current series of Aviation Statistics was first collected in 2004. The data is collected from all Irish airports and transmitted to Eurostat. An Aviation release was first published in 2014 to make the data more accessible to users.

The data in this release provides details on the number of passengers classified by arrivals and departures, and by reference to national and international traffic; the number of flights by arrivals and departures and information on air freight and mail (in tonnes). The release also highlights the top routes for each of the five main airports: Dublin, Cork, Shannon, Knock and Kerry.

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4. Metadata Update

4.1. Metadata last certified

12/06/2024

4.2. Metadata last posted

12/06/2024

4.3. Metadata last update

12/06/2024

5. Statistical Presentation

5.1. Data Description

The aviation statistics release provides information on the number of passengers and freight/mail handled by all main Irish airports categorised as follows:
- Airport
- Arrivals and departures for both passengers and freight/mail
- Type of travel and traffic (i.e. national or international) for both passengers and freight/mail
- Scheduled and non-scheduled flights for both passengers and freight/mail
- Country of flight stage origin and destination
- Top 10 airports for arrivals and departures of passengers for the five main Irish airports

In addition, details of the numbers of flights handled by all airports classified by arrivals/departures, national and international traffic and scheduled and unscheduled are provided. Data freight/mail carried is given for the five main airports classified by arrivals and departures and national and international flights.

For European requirements three data sets required by the Regulation – A1, B1 and C1 – are provided to Eurostat:

Dataset A1 - Flight Stage dataset : flight stage data registered for airport-to-airport routes, and broken down by arrivals/departures, scheduled/non-scheduled, passenger service/all-freight and mail service, airline information and aircraft type. The values provided concern passengers on board, freight and mail on board, commercial air flights as well as passenger seats available.

Dataset B1 - On Flight Origin/Destination dataset : flight stage data registered for airport-to-airport routes, and broken down by arrivals/departures, scheduled/non scheduled, passenger service/all-freight and mail service and airline information. The values provided concern passengers carried and freight and mail loaded or unloaded.

Dataset C1 - Airport dataset: airport data registered for declaring airports, and broken down by airline information. The values provided concern total passengers carried, total direct transit passengers, total transfer (indirect transit) passengers, total freight and mail loaded or unloaded, total commercial aircraft movements and total aircraft movements.

Data sets A1 and B1 are provided on monthly basis, while data set C1 is provided on annual basis.

Airports handling less than 15 000 passenger units annually are not included in the data sets.

5.2. Classification System

Airports are classified according to ICAO (International Civil Aviation Organization) airport coded as listed in ICAO document 7910.

Four categories of **Community airports** are defined by the Regulation (EC) N°1358/2003:

- Category "0": **Airports with less than 15 000 passenger units per year** are considered as having only "occasional commercial traffic" without obligation to report.

- Category "1": **Airports with between 15 000 and 150 000 passenger units per year** shall transmit only aggregated airport data (Data set C).

- Category "2": **Airports with more than 150 000 passenger units and less than 1 500 000 passenger units per year** shall transmit flight stage data, on flight origin destination data as well as aggregated airport data (Data sets A, B and C).

- Category "3": **Airports with at least 1 500 000 passenger units per year** shall transmit flight stage data, on flight origin destination data as well as aggregated airport data (Data sets A, B and C).

List of reporting airports by country with categories as from 2003 onwards is available in Eurostat metadata file available at https://ec.europa.eu/eurostat/cache/metadata/en/avia_pa_esms.htm.

Airports under category '0' are not included in the statistics provided to Eurostat.

Aircrafts are classified according to aggregated aircraft categories based on the ICAO aircraft codes as listed in ICAO document 8643.

Airlines are classified according to the ICAO airline codes as listed in the ICAO document 8585. When providing the data to Eurostat, the region where they are licensed is coded accordingly either as European Union (EU) or outside the European Union (non-EU)

5.3. Sector Coverage

All Irish airports.

5.4. Statistical Concepts and definitions

Main airport: A main airport is defined as an airport through which in excess of 150,000 passengers fly per annum. The five main airports in Ireland are Dublin, Cork, Shannon, Knock and Kerry.
Regional airport: A regional airport is defined as an airport through which less than 150,000 passengers fly per annum. The four regional airports in Ireland are Donegal, Waterford, Connemara and Inishmore.
Community airport - a defined area on land or water in a Member State subject to the provisions of the treaty, which is intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft and open for commercial air services.

Scheduled flight: The term 'scheduled' in the release, refers to a commercial air service operated according to a published timetable, or with such a regular frequency that it constitutes an easily recognisable systematic series of flights.
Non-scheduled flight: The term 'non-scheduled' in this release, refers to a commercial air service other than scheduled air service e.g. chartered or private aircraft flights.
Flight stage - the operation of an aircraft from take-off to its next landing. This is linked to the definition of passengers (or freight and mail) on board.

Passengers on board - all passengers on board of the aircraft upon landing at the reporting airport or at taking off from the reporting airport. All revenue and non-revenue passengers on board an aircraft during a flight stage. Includes direct transit passengers (counted at arrivals and departures).
Passengers carried - all passengers on a specific flight (with one flight number) counted once only and not repeatedly on each individual stage of that flight. All revenue and non-revenue passengers whose journey begin or terminates at the reporting airport and transfer passengers joining or leaving the flight at the reporting airport. Excludes direct transit passengers.
Direct transit passengers: These are passengers who, following a short stop, continue their journey on the same aircraft with the same flight number as the flight on which they arrived. These passengers are en route to another destination and generally do not disembark from their aircraft.
Transfer or indirect transit passengers: Transfer passengers or 'connecting passengers' are defined as passengers who make a stop at an airport without any purpose other than to board another aircraft to reach another destination. Unlike transit passengers, transfer passengers disembark the aircraft and pass through the airport en route to their connecting flight.

Freight and mail on board - all freight and mail on board of the aircraft upon landing at the reporting airport or at taking off from the reporting airport. All freight and mail on board an aircraft during a flight stage. Includes direct transit freight and mail (counted at arrivals and departures). Includes express services and diplomatic bags. Excludes passenger baggage.
On flight origin and destination - traffic on a commercial air service identified by a unique flight number subdivided by airport pairs in accordance with point of embarkation and point of disembarkation on that

flight. For passengers, freight or mail where the airport of embarkation is not known, the aircraft origin should be deemed to be the point of embarkation; similarly, if the airport of disembarkation is not known, the aircraft destination should be deemed to be the point of disembarkation. This is linked to the definition of passengers carried and freight and mail loaded or unloaded.

Freight and mail loaded or unloaded - all freight and mail loaded onto or unloaded from an aircraft. Includes express services and diplomatic bags. Excludes passenger baggage. Excludes direct transit freight and mail.

Passenger unit - one passenger unit is equivalent to either one passenger or 100 kilograms of freight and mail.

5.5. Statistical Unit

The data are collected at individual airport level.

5.6. Statistical Population

The population is all Irish Airports

5.7. Reference Area

Airports located in the Republic of Ireland.

5.8. Time Coverage

2005 – 2023

5.9. Base period

Not applicable.

6. Unit of Measure

The units used depend on the variables collected, the main units of presentation are
- The passenger numbers are expressed as integers
- the number of arrivals and departures are expressed as integers
- the weight of freight and mail is transmitted in tonnes with three decimal places.

7. Reference Period

2023.

8. Institutional Mandate

8.1. Legal Acts and other agreements

8.1.1. National legal basis

Statistics on Aviation are collected under Statutory Instrument S.I. No. 10/2020 - Statistics (Carriage of Passengers, Freight and Mail by Air) Order 2020.

https://www.irishstatutebook.ie/eli/2020/si/10/made/en/print
http://www.irishstatutebook.ie/eli/1993/act/21/enacted/en/html

Statistics on aviation are collected under Regulation (EC) No. 437/2003 the European Parliament and of the Council of 27 February 2003 on statistical returns in respect of the carriage of passengers, freight and mail by air. This regulation was further amended by Commission Regulation (EC) No. 1358/2003 of 31 July 2003.

8.2. Data Sharing

Until 2002, the data were provided to Eurostat on a voluntary basis; since 2002 data provision is based on an EP and Council framework legal act and on several implementing Commission Regulations:

- Regulation (EC) No 437/2003 of the European Parliament and of the Council of 27 February 2003 on statistical returns in respect of the carriage of passengers, freight and mail by air.
- Commission Regulation (EC) No 1358/2003 of 31/07/2003.
- Commission Regulation No 546/2005 of 8 April 2005.
- Commission Regulation No 158/2007 of 16 February 2007.

9. Confidentiality

9.1. Confidentiality – policy

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

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

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

9.2. Confidentiality – data treatment

The procedures regarding statistical confidentiality follows Eurostat's Handbook on Statistical Disclosure Control (2010) and the 1993 Statistics Act. Only the airline information data is subject to confidentiality. Before providing the data to Eurostat, the region where they are licensed is coded accordingly either as European Union (EU) or outside the European Union (non-EU). The data provided to Eurostat in the data sets A1, B1 and C1 contain no confidential information.

Data confidentiality problems:
No problem to date. This is because of the time difference in submitting the data to the CSO and to Eurostat

10. Release Policy

10.1. Release Calendar

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

Since release dates are planned sometimes far in advance, changes of dates might occur. Therefore, the release calendar is updated continually.

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/csolatestnews/releasecalendar/

10.3. User access

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

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

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

11. Frequency of Dissemination

Air transport statistics are published quarterly.

12. Accessibility and clarity

12.1. News release

There is no press release associated with this output.

12.2. Publications

The most recent Aviation Statistics release can be accessed from the CSO website directly from this link https://www.cso.ie/en/statistics/transport/aviationstatistics/

12.3. On-line database

Final data are available on the CSO's online database PxStat the tables can be accessed directly from the following link: https://data.cso.ie/product/as

12.3.1. AC 1. Data tables - consultations

Consultations are calculated retrospectively annually; data in relation to this release is not yet available During the period 1/1/2021 to 2/11/2021 the releases for the year were accessed a total of 8289 times. 3574 of which were unique page views

12.4. Micro-data Access

Not applicable to air transport statistics.

12.5. Other

Aviation Statistics are published in the following;

CSO Annual Transport Hub:
https://www.cso.ie/en/releasesandpublications/hubs/p-transo/transporthub/

Additional information on the survey, including the differing data fields collected and the codification used, can be found in the Eurostat aviation manual:
https://ec.europa.eu/eurostat/documents/29567/3217334/Aviation-Manual-V10.pdf/19f6a843-d7c1-4cae-b93e-fcd5e3f59187

Aviation statistics explained:
https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Air_transport_statistics

12.5.1. AC2. Metadata consultations

Not calculated.

12.6. Documentation on Methodology

Further information on the methodology associated with this release is available on the CSO website at:
https://www.cso.ie/en/methods/transport/aviationstatistics/

12.6.1. AC3 – Metadata completeness – rate

Not calculated.

12.7. Quality Documentation

Further information regarding the quality of the Aviation Statistics can be found in the CSO's Methods page directly from this link: https://www.cso.ie/en/methods/transport/aviationstatistics/

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.
Procedures based on quality reporting are in place to internally monitor product quality. Results are analysed regularly and improving actions are undertaken, if needed (for example after obtaining annual summary results and mirror checks reports from Eurostat). There is a regular and thorough review of the key statistical outputs.

Moreover, in the framework of Statistics the CSO has introduced standard quality reports (standard-documentation) to be produced and kept up-to-date for all statistics. The reports are based on the ESS definition of quality in statistics and follow the European standard quality report and provide users with information about the underlying concepts, definitions, methods used and the quality of the statistics (meta-information) in a standardised format.

13.2. Quality Assessment

As part of the overall CSO Quality strategy an annual self-assessment exercise is completed to evaluate the quality of processes and outputs.

Annually, Eurostat provides a data quality report with a summary of the main findings affecting quality as well as showing the solution adopted and the materiality of the existing differences. Mirror checks and checks for the consistency over times are prepared as well.
We have excellent cooperation with the relevant airports. Timeliness and punctuality are very good. Revisions concern only a few flights.

14. Relevance

14.1. User Needs

The data is collected to meet an EU requirement: Regulation (EC) N°1358/2003, implementing Regulation N°437/2003 of the European Parliament and of the Council on statistical returns in respect of the carriage of passengers, freight and mail by air, requires all EU Member States to collect and compile statistics of aviation.

The airport data is of major relevance for the Government and Department of Transport as an indicator of how the sector is performing, and also to implement and monitor policies for aviation transport

Data on commercial aircraft movements, the routes, numbers of passengers, amount of transported freight and mail as well as seats available provides an important basis for decision-making of politics, society and economy in the context of the development and promotion of transport projects.
Users demand for data regarding true origin and destination of the passengers and freight cannot be fulfilled as such information is not collected within the data collection. This information is also not available from the airports.

14.1.1. Main National Users

- Aviation Industry
- Researchers
- General public
- Government departments and agencies – to monitor the economic and environmental impact of the aviation industry

14.1.2. Principal External Users

Eurostat.

14.2. User Satisfaction

There was no user survey specially carried out on air transport statistics data so far but direct feedback from main users like the Department of Transport, universities etc. highlights a good level of satisfaction regarding data coverage and availability.

14.3. Data Completeness

Possibility to identify the true first origin/ final destination of a passenger: The OFOD would be on the flight data, but the Airports do not capture the true origin/destination of a passenger if they are making a transfer at either end of the flight. The airports do not get such ticket information from the airlines. It should also be noted that some people buy 2 independent tickets and it would be very difficult to track such passengers (e.g. a passenger may be taking a Ryanair flight from Dublin to Stansted and then an Easyjet flight from Stansted to Morocco).

The DAA surveys passengers to give them an idea about the number of passengers who do take connecting flights and where they go.

14.3.1. Data Completeness rate

Not calculated.

15. Accuracy and reliability

15.1. Overall accuracy

Overall accuracy of the air transport statistics data is good.. There is a set of validation rules and quality checks put in place, which detect various types of issues. In case of any issues detected, the data providers are contacted to provide explanations or/and revise the data accordingly. Checks for the consistency over times are prepared and reviewed.

Regarding the transmission of data tot Eurostat, the origin/destination information of passengers on a flights for table B1 is not known or provided by the airports. The airports do not have such data. It should also be noted that some people buy 2 independent tickets and it would be very difficult to track such passengers (e.g. a passenger may be taking a Ryanair flight from Dublin to Stansted and then an Easyjet flight from Stansted to Morocco).
The number of transfer passengers in table C1 refers to the number of transfer passengers arriving and departing on flights (passengers are counted twice).

15.2. Sampling Error

Not applicable.

15.2.1. A1. Sampling error indicator

Not applicable

15.3. Non-sampling Error

By working closely with the relevant airports, the various checks and the legal obligation to cooperate and report the data, misclassifications, under- or over-coverage can be excluded. Moreover, the correctness of the data is of great importance for the airports. The use of the classification lists provided by Eurostat prevents a misclassification of aircraft types or partner airports.

15.3.1. Coverage error

Not applicable.

15.3.1.1. A2. Over coverage rate

Not applicable.

15.3.1.2. A3. Common units – proportion

Not applicable.

15.3.2. Measurement error

The scope for measurement error is limited given that there is little room for ambiguity in the standard reporting template. Furthermore, the potential for measurement errors arising as a result of coding errors is all but eliminated as there are a limited number of codes and the coding is done by the airports.

15.3.3. Non-Response Error

Not applicable.

15.3.3.1. Unit non-response rate

Not applicable.

15.3.3.2. Item non-response rate

Not applicable.

15.3.4. Processing error

The scope for processing errors is limited, in that the data is not processed manually. In any case, edit checks are done on the data files received from airports to ensure that all codes used are valid and that there is consistency in the data from the previous quarter. Any issues highlighted as a result of the edit checks carried out on the data are forwarded to airports for clarification and amended.

15.3.5. Model assumption error

Not applicable.

16. Timeliness and punctuality

16.1. Timeliness

Air transport statistics for quarters one, two and three are published three months after the reference period. Quarter four and annual publication is published four months after the reference period.

All the statistics required by the provisions of the Regulation 437/2003 are transmitted to Eurostat within 6 months of the reference month.

16.1.1. TP1. Time lag – First results

Provisional results are not published.

16.1.2. TP2. Time lag – Final results

Quarterly data is published within t+3 months after the end of the reference quarter except for Quarter 4 which is published along with annual data within t+4 months after the end of the reference year.
T+6 months for Eurostat transmission.

16.2. Punctuality

The release is published on time in accordance with the date indicated in the release calendar.

All the statistics required by the provisions of the Regulation 437/2003 are available 1 month before the deadline for the data provisions set up in the legal act.

16.2.1. TP3. Punctuality – Punctuality - delivery and publication

0 days nationally. All dissemination is completed as scheduled.
-1 month for Eurostat transmissions.

17. Comparability

17.1. Comparability – Geographical

The scope for coherence checks on national data is limited by the lack of auxiliary sources of information.

There are no problems of comparability for air transport data collection with a very high data comparability across countries due to the common legal basis.
For each annual transmission, Eurostat carries out quality checks where comparisons for the Irish data are made with partner airports. Mirror checks and missing routes are highlighted for re-check. Any discrepancies highlighted by this process are investigated and corrected if necessary

17.1.1. CC1. Asymmetry for mirror flow statistics

Not calculated.

17.2. Comparability over time

Passengers carried data are available from 1993.
Passengers on board data are available from 2003. Freight and mail on board data are available from 2003 while Freight and mail loaded and unloaded are available from 1993.

Direct transit passenger data are available from 2000 for Cork airport.

Transfer passenger data are available from 2012.

Time series breaks occur in case of airport being closed temporarily or permanently or in case an airport does not exceed the threshold of 15 000 passenger unit per year (and may be excluded from air transport data provisions). The detailed information on eventual breaks in the time series is provided in the Country Specific Notes (CSNs) available at Eurostat's metadata page (https://ec.europa.eu/eurostat/cache/metadata/en/avia_pa_esms.htm).
The data transmitted to Eurostat before 2004 consisted only of aggregates on passenger transport.

17.2.1. Length of Comparable Time series

19 years. As from 2004 the statistics on air transport are comparable over time, as they are collected following fully the provisions of the legal act. Time series checks are regularly made to detect inconsistencies in the data.

17.3. Coherence – cross domain

Comparisons with other transport statistics are only partially and to a limited extent possible with regard to freight transport and passenger transport, since data are currently not available or are not collected at the same level of detail and also different methods and underlying objectives.

When comparing transported freight with foreign trade statistics it has to be kept in mind, that foreign trade statistics exchange goods and their value between individuals while aviation statistics show the performance of the transport mode air.

The statistics in this release are not fully coherent with the Air and Sea Travel statistics. The differences in passenger numbers which are typically less than 0.5%, arise because the Air and Sea Travel statistics exclude transit passengers, domestic air travel and flights to Northern Ireland. It should be noted that

passenger numbers for Shannon and Dublin airports exclude transit passengers on technical transit flights as these are fuel stop only flights.

17.3.1. Coherence – Sub annual and annual statistics

Not applicable.

17.3.2. Coherence with National Accounts

Not applicable

17.4. Coherence – internal

Not applicable.

18. Cost and Burden

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

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

The response burden is put on the airports but is reduced to a minimum – the data users provide the data automatically via a data interface or email. The data providers are only contacted if minor errors cannot be solved by the CSO.

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

Air transport statistics for quarters one, two and three are published three months after the reference period. Quarter four and annual publication is published four months after the reference period. Revision may be required if for example information was received later than publication date. Mainly, those revisions would only concern a small amount of data and generally do not change the overall results of the already published quarterly data. In the case of any changes after the annual results have been published, then the public is informed in the form of footnotes to the revised PxStat tables on the CSO website.

19.2.1. Data Revision – Average size

Not calculated.

20. Statistical processing

20.1. Source Data

Aviation statistics are compiled from data supplied by all Irish airports. The following Irish airports provide data to the Central Statistics Office: Dublin, Cork, Shannon, Kerry, Knock, Connemara, Donegal and Inishmore. Galway and Sligo airports ceased operations in 2011. There have been no commercial flights in Waterford Airport since June 2016.

Data for the five main Irish airports (Cork, Dublin, Kerry, Knock and Shannon) is supplied on a monthly basis. Data for regional airports (Connemara, Donegal and Inishmore) is supplied annually to the Central Statistics Office.

The data file that is received monthly/quarterly from the main Irish airports contains the following variables for each airport:
- Reporting airport
- Partner airport
- Direction
- Scheduled or non-scheduled
- Passenger or Freight/mail flight
- Airline
- Aircraft
- Passenger numbers
- Freight/mail loaded and unloaded
- Number of commercial flights
- Seat numbers
- Total number of aircraft movements.

With regards the datasets disseminated to Eurostat, the data collected for each of them is as follows:

Dataset A1 – Data Suppliers (Passengers on board/Freight and mail on board):

Details supplied directly by the main Irish airports to the CSO. (Dublin, Cork, Shannon, Knock and Kerry).

Aircraft Information in A1:

The original information source that we use is the ICAO aircraft codes as available from Eurostat. These codes are also made available to the airports.

Seats information in A1:

The original information source that we use is the file from Eurostat which details aircraft type and seat availability summary tables. These codes are also made available to the airports. Where a return is made by an airline/airport where the passenger seats aboard figure is less than the maximum seat capacity we do not make any changes. However if the return shows that the passenger seats aboard is greater than the maximum and the number of passengers is less than the maximum we adjust the seat capacity to the maximum as detailed in the file from Eurostat.

Dataset B1 –Data Suppliers (Passengers carried/Freight and mail loaded/unloaded):
Details supplied directly by the main Irish airports to the CSO. (Dublin, Cork, Shannon, Knock and Kerry).
Dataset C1 - Details supplied directly by all Irish airports to the CSO. (Dublin, Cork, Shannon, Knock, Kerry, Connemara Donegal, and Inishmore).

20.1.1. Population and sampling frame

The population is all Irish airports. The results are based on a full census i.e. all variables are fully reported by each airport to the Central Statistics Office.

20.1.2. Sampling design

The results are based on a full census therefore, no sampling takes place.

20.1.3. Survey size

Not applicable.

20.1.4. Survey technique

The data is emailed by each airport to a specific email account in the CSO each month.

20.2. Frequency of data collection

The information is collected monthly from the main Irish Airports: Cork, Dublin, Kerry, Knock and Shannon for the national release and for Eurostat Datasets A1 and B1.

Information for Eurostat's C1 dataset is collected from all airports annually (main Irish airports supply total passenger numbers, freight, flights etc.) for each month for this table.

Regional (Donegal, Connemara, Inishmore) airports supply totals for the year to the CSO.

20.3. Data Collection

Implementation of the data collection and compilation process:
The level of aviation data collected prior to the Regulation was very limited so a new data collection and compilation process was required to be put in place.
Airports: The Regulation had required an extension of an existing process
The data for the purpose of the Regulation 437/2003 is collected monthly with a xls/dat-file from the airports. The transmission is possible via a SFTP interface or via e-mail.

20.3.1. Type of Survey/Process

Compilation is based on administrative data.

20.3.2. Questionnaire (including explanations)

Not applicable.

20.3.3. Survey Participation

All airport and airport authorities are legally obliged to participate in the survey

20.3.4. Data Capture

Data is received monthly from the five main Irish airports via email. The data is received in Excel or flat file format. In some cases, this data must be manually formatted. Once formatted, the data is processed using the statistical software tool SAS. This processing essentially involves writing the data to data (.DAT) files in the format required by Eurostat.

20.4. Data Validation

Data editing and validation is carried out using SAS to ensure that all codes used are valid and that there is consistency in the data.

The CSO runs the following checks on the data files received from the airports:
- Seating capacity – look to see if there are more passengers than seats available.
- Zero Returns – look to see if a return has been made for a passenger flight with zero passengers or a freight flight with zero freight.
- Origin/Destination – run a check to see if flights included where origin is equal to destination.

Any errors that are found with the validations checks are queried, if necessary, with the airports by phone or email.

20.5. Data Compilation

Data codification practices :
The Regulation codes are used by all airports.

After various checks, the data received from the airports are compiled into monthly data following the structure of the data sets which are pre-set by regulation (EC) 1358/2003. Data is transmitted to Eurostat via eDAMIS using SDMX files.

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

Non-response does not apply as the response rate is 100%

20.5.1.1. A7. Imputation rate

0%

20.5.2. Grossing and Weighting

Not applicable.

20.6. Adjustment

The only adjustment made to the Aviation Statistics refers to seasonal adjustment and is explained below.

20.6.1. Seasonal Adjustment

For the national release seasonal adjustment for passenger numbers is conducted using a direct seasonal adjustment approach. However, the overall passenger totals are estimated using the indirect approach, i.e. the 'Total passengers' is derived by adding the monthly seasonally adjusted passenger numbers for each airport. The main reason for adopting the indirect approach is to attribute the monthly and annual changes in passenger numbers to each airport.

Seasonal adjustment models are developed for each airport based on unadjusted data spanning from January 2012 to the current period. These models are reviewed on an annual basis; however seasonal factors are updated each quarter.

The adjustments are completed by applying the X-13-ARIMA(https://www.census.gov/data/software/x13as.X-13ARIMA-SEATS.html) model, developed by the U.S. Census Bureau to the unadjusted data. This methodology estimates seasonal factors while also taking into consideration factors that impact on the quality of the seasonal adjustment such as:

- Calendar effects, e.g. the timing of Easter,
- Outliers, temporary changes and level shifts in the series.

Seasonally adjusting the Aviation data series during the COVID-19 crisis period will be challenging until the scale and shape of its impact on the time series is better understood. The initial seasonally adjusted results might be revised for some months ahead as future observations become available. Users should be aware that there is increased uncertainty around the seasonally adjusted figures during this period.

21. Comment