International passenger survey QMI

Quality and Methodology Information for the International Passenger Survey detailing the strengths and limitations of the data, methods used, and data uses and users.

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1 . Output information

- National Statistic: no

- Frequency: monthly, quarterly and annually

- How compiled: sampled-based survey

- Geographic coverage: UK

- Last revised: 10 May 2023

2 . About this Quality and Methodology Information report

This quality and methodology report contains information on the quality characteristics of the data (including the European Statistical System's five dimensions of quality) as well as the methods used to create it.

The information in this report will help you to:

- understand the strengths and limitations of the data

- learn about existing uses and users of the data

- understand the methods used to create the data

- help you to decide suitable uses for the data

- reduce the risk of misusing data

3 . Important points

- The International Passenger Survey (IPS) is a continuous survey (conducted on 362 days a year) at major ports of entry to, or exit from the UK.

- The IPS is used to produce estimates of visits to the UK by visitors from overseas, and visits overseas by UK residents, and the amounts spent on visits.

- Methodological improvements relating to the survey's weighting were introduced for the 2019 estimates, and a revised series was published in May 2019 for the years 2009 to 2018.

- The IPS was suspended because of the Coronavirus (COVID-19) pandemic between 16 March 2020 and 18 January 2021. Therefore, high-level estimates of travel and tourism have been produced for April to December 2020 using alternative sources.

4 . Quality summary

Overview

The International Passenger Survey (IPS) estimates provide information on international travel and tourism (that is, visits between the UK and abroad of less than 12 months), as well as long- and short-term migrants. This report provides users with information on the usability and fitness for purpose of overseas travel and tourism estimates only; migration estimates are not addressed.

Published estimates are based on voluntary face-to-face interviews with a random sample of passengers as they enter or leave the UK by the principal air, sea and tunnel routes. Just under 285,000 passengers responded in 2022, representing about 0.15% of travellers. Interviewers establish whether respondents are at the start or end of their visits to or from the UK. Full interviews are conducted with passengers who are at the end of their visits; this approach ensures that actual information is recorded relating to their visits, including spend and length of stay.

IPS data are published on the Office for National Statistics (ONS) website. Monthly and quarterly provisional releases, and final annual results are published in Travel Trends. Further information about the IPS revisions policy can be found in the ONS Revisions Policy. We recommend that a single quarter is the minimum period over which detailed analysis of the data should be made because of the sample sizes achieved. The IPS datasets are also available through the UK Data Service and the Stakeholder Engagement Team.

Uses and users

The survey is sponsored by the following government departments:

- the Office for National Statistics (ONS)

- the Department for Digital, Culture, Media and Sport (DCMS)

- the Department for Transport (DfT)

- HM Revenue and Customs (HMRC)

Additional sponsorship for the survey comes from VisitBritain, VisitScotland and VisitWales, the organisations responsible for marketing tourism in Great Britain, Scotland and Wales, respectively.

These data are required by the Home Office, Bank of England, including the Monetary Policy Committee, His Majesty's Treasury (HMT) and the Office for Budget Responsibility (OBR). Travel and tourism operators are among our regular users along with academics, students, researchers, consultants, the media, business organisations and the general public.

The estimates from the survey provide figures for the UK Balance of Payments travel account, as well as for planning, monitoring, benchmarking, analysis and decision-making for travel and tourism policy.

Strengths and limitations

Strengths

The main strengths of the survey include that it is the main source of information in the UK for international travel and tourism, and associated earnings and expenditure. As the survey has been running since 1961, it provides a comprehensive time series that can be used for identifying long-term trends and patterns, or undertaking a time series analysis and forecasting. It is also the only continuous survey providing official statistics that operates at the principal air, sea and tunnel routes and with a dedicated field force.

Limitations

The main limitations of the survey include that the number of survey interviews on some routes can be small, and therefore attract higher sampling errors. This includes people whose main reason for visiting are to play sports or get married. The sampling errors also apply to visits to or from countries with low visit numbers.

Additionally, about 90% of passengers entering and leaving the UK have a chance of being sampled in the survey. The remainder are either passengers travelling at night, when interviewing is suspended, or on those routes too small in volume, or too expensive, to be covered.

Recent improvements

In April 2018, the IPS moved to data collection using tablet computers, rather than paper-based questionnaires. More information is available about the rollout of data collection changes. The changes have improved efficiency and translations to different languages. They have allowed for greater flexibility when updating the survey, and there is evidence that survey respondents relate better to the "one-question-per-screen" layout. Time series analysis has been conducted and no discontinuities have been identified as a result of this change.

In 2019 we introduced methodological improvements to the survey-weighting process for the imbalance (that is, large differences in numbers) in the estimates of visitors arriving and departing for some nationalities, notably China (see Section 6: Methods used to produce the International Passenger Survey data).

5 . Quality characteristics of the International Passenger Survey data

This section provides information that describes the quality and characteristics of the data and identifies issues that should be noted when using the output.

Relevance

Relevance is the degree to which the statistical outputs meet users' needs.

The International Passenger Survey (IPS) is a rich source of data on travel and tourism, enabling analysis on the numbers of visitors, where they come from or go, length of stay and how much they spend. This makes the IPS relevant and valuable for monitoring tourism and developing tourism strategy. The data are also required by Balance of Payments; this is part of the Travel Account of UK National Accounts.

Our main users are consulted regularly through the IPS steering group to ensure our data remain suitable for its intended use.

Accuracy and reliability

Accuracy and reliability relate to the degree of closeness between an estimate and the true value.

Total Error

The total error in a survey estimate is the difference between the estimate derived from the sample and the true population value. It is made up of two types: non-sampling error and sampling error.

Non-sampling error

Within non-sampling error there is systematic and random error. Systematic error occurs when data are biased in a certain direction. Random error is the variation in sample data from the true values of the population that occurs by chance. Substantial efforts have been made to avoid errors, for example, through annual piloting of the survey, extensive and consistent interviewer training and by weighting the data collected for non-response.

Sampling error

Sampling error (the difference between the estimates derived from the sample and the true population) arises because the variable estimates are based on a sample rather than a census of the population.

The IPS sample design is complex. The design incorporates both clustering (that typically increases sampling error) and stratification (that reduces it). Examples of clustering used on the IPS are the selection of only a subset of airports (although ports covering approximately 99% of international traffic to and from the UK are sampled) and the inclusion of all possible shifts (a shift being a time slot on a given day). This is because of economic factors making a complete coverage unrealistic. Shifts are stratified so that all days of the week are equally represented.

Standard errors are calculated for the main IPS variables, as well as absolute and relative confidence intervals.

Response rates are generally high for all modes (air, sea and Channel Tunnel); around 68% of the sampled passengers respond to the survey in January 2023. About 90% of all passenger traffic flow is covered.

In the event of a large error being detected with the data, the overview report and datasets will be revised in line with the Code of Practice for Official Statistics.

More information on revisions can be found in our ONS Revisions Policy.

Coherence and comparability

Coherence is the degree to which data that are derived from different sources or methods, but refer to the same topic, are similar. Comparability is the degree to which data can be compared over time and domain, for example, geographic level.

The IPS has been conducted annually since its inception in 1961 (then known as the Passenger Survey). Improvements have been conducted regularly throughout the lifetime of the survey, for example, expanding the number of ports and routes covered.

There are no other similar surveys that compare international tourism affecting the UK. TheCivil Aviation Authority conducts a survey that collects some similar details at airports on departing passengers only. Estimates from other National Statistical institutes, tourism agencies, the Department for Transport, and travel and tourism operators, such as Eurostar, may differ as a result of the methodology used. For example, IPS data relate to the number of visits and not the number of visitors.

Accessibility and clarity

Accessibility is the ease with which users are able to access the data, also reflecting the format in which the data are available and the availability of supporting information. Clarity refers to the quality and sufficiency of the release details, illustrations and accompanying advice.

Overseas travel and tourism publications are available, such as ourstatistical bulletin,Travel trends articleand Travelpac dataset, along with main estimates. TheUK Data Service also offers free access to IPS datasets for genuine researchers.

We can produce tables that are not already available within Overseas travel and tourism publications, dependent upon the work involved, for a fee. Requests for additional work should be emailed to the Stakeholder Engagement Team at pop.info@ons.gov.uk.

Our recommended format for accessible content is a combination of HTML webpages for narrative, charts and graphs, with data being provided in usable formats such as CSV and Excel. In some instances, other software may be used, or may be available on request. Available formats for content published on our website, but not produced by us or referenced on our website but stored elsewhere, may vary. For further information please refer to the contact details at the beginning of this report.

For information regarding conditions of access to data, please refer to:

- [Terms and conditions](#)for data on the website

- [Copyright and reuse of published data](#)

- Our [Accessibility statement](#)

- Access to microdata through theSecure Research Service

- In addition to this Quality and Methodology Information report,[International Passenger Survey methodological background notes](#) outline dataset definitions, sample methodology, geography and purpose groupings relevant to each release.

General methodology information about the background, weighting and stages of the IPS can be found on our [International Passenger Survey methodology](#)page.

Timeliness and punctuality

Timeliness refers to the lapse of time between publication and the period to which the data refer. Punctuality refers to the gap between planned and actual publication dates.

For the IPS, the lapse of time between the end of the reference period and the Overseas travel and tourism publication date varies dependent upon the publication, described as follows:

- a monthly[statistical bulletin](#)containing provisional estimates of visits and expenditure on a monthly basis is published approximately six weeks after the end of the reporting month

- a quarterly[Overseas travel and tourism publication](#),containing more accurate and detailed estimates relating to the latest quarter, is published approximately three and a half months after the end of the reporting period

- an annual publication,[Travel trends](#), is published approximately four months after the end of the year

- [Travelpac](#), an aggregated dataset for users to access, including a Travelpac manual, are released on the web simultaneously with the quarterly Overseas travel and tourism and Travel trends publications

Changes to the release schedule are announced as early as possible, as set out in the[Code of Practice for Statistics](#). For more details on related releases, the[GOV.UK Release Calendar](#)provides 12 months' advance notice of release dates. If there are any changes to the pre-announced release schedule, public attention will be drawn to the change and the reasons for the change will be explained fully at the same time.

Concepts and definitions

Concepts and definitions describe the legislation governing the output and a description of the classifications used in the output.

As mentioned, IPS estimates are based on the number of visits. This means those entering or leaving the UK more than once in the same period are counted on each visit. The count of visits relates to UK residents returning to this country and to overseas residents leaving it. Other main definitions and concepts are available in our[Travel trends articles](#).

Definition of a visitor is consistent with international standards and excludes visits made for non-tourist reasons (for example, military personnel on duty and international commuters).

Other definitions and concepts are available in Section 7: Glossary of our [Travel Trends article](#).

6 . Methods used to produce the International Passenger Survey data

How we collect the data

Survey design

The International Passenger Survey (IPS) is based on short face-to-face interviews with a sample of passengers travelling via the principal airports, sea routes and the Channel Tunnel. Travellers passing through passport control, as they enter or leave the UK, are selected for interview. All interviews are voluntary and confidential. Interviewing is generally conducted between 6am and 10pm, with nighttime interviewing taking place on Dover ferries and the Eurotunnel trains.

Some questions on the survey are asked to all of the passengers interviewed, while others are restricted to specific sub-groups. Information on the spending and length of stay of UK residents abroad, and overseas residents in the UK, is collected only at the end of the visit. This is because actual spending and length of stay are required, and these may differ from the respondents' intentions when they start their visit.

A sub-set of questions is retained each year, while some questions are revised. Whenever revisions of more than minimal complexity are required, a questionnaire pilot is conducted at a sub-set of ports and routes, chosen according to the nature of the revisions.

Sampling

The IPS uses a multi-stage sample design. The sampling for air, sea and tunnel travel is carried out separately, although the underlying principle for each mode of travel is broadly similar. In the absence of a sampling frame of travellers, time periods (or sea or shuttle crossings) at selected ports and routes are chosen at the first stage and travellers are then systematically selected at fixed intervals from a random start within these shifts (or crossings) at the second stage. Details of the sampling process are published in our International Passenger Survey methodology.

How we process the data

A number of checks are built into the date entry on the tablet, that acts as the first form of data validation and reduces the number of errors.

On return of survey data to the office, a comprehensive suite of edits and validation checks are carried out to clarify (and correct where necessary) any outstanding issues with the data. These include:

- checking zero spend from the completed questionnaire

- checking high spend to ensure this has been correctly coded

- coding towns, countries and airlines that are not included on the interviewers' coding frames

- missing information to determine whether anything was noted in the program that would enable the information to be input

- internal inconsistencies that have been identified or flagged by the interviewer

Response outcome categories

There are three response outcomes (complete, partial and minimum) and non-response:

- complete interview means that all the questions applicable to the respondent are answered

- partial interview means that the core questions are answered, but responses to other questions are imputed

- minimum interview means that insufficient information is obtained, but valid answers have been provided for nationality and residency to include in the data

Non-response can take two forms:

- an interviewer attempts to make contact with the respondent, but no interview takes place, including non-contacts (where respondents could not be approached because they were speaking on a mobile phone, or for onboard ferry collection, eating in a restaurant), refusals, and ineligibles (including on-duty military or embassy personnel, merchant navy personnel, airline crew or unaccompanied school children); ideally, only those eligible for interview would be counted, but at some ports conditions lead to some who are not eligible for interview being included in the count

- no interviewer being available to contact the next identified respondent

Exclusions

The following visit information, obtained from other sources, is not included in the survey design but is taken into account when processing:

- visits across the Irish land border

- cruises taken by UK residents, originating and ending in the UK

- visits to and from the Isle of Man and Channel Islands

The following groups are excluded from overseas travel and tourism analyses:

- passengers who cross the Channel, North or Irish Sea, but do not alight from the vessel

- migrants and persons travelling to take up prearranged employment, together with military or diplomatic personnel, merchant seamen and airline personnel on duty

- overseas residents passing through the UK on the way to other destinations, but who do not stay overnight (often known as transit passengers); however, any spending by transit passengers while in the UK is included in the spending figures

Outliers

Expenditure outliers for main expenditure components are identified based on the data distribution and the number of people in the expenditure group.

Imputation

Where responses for the main items of interest are missing, for example the amount spent on a fare, values are imputed using a mean-value within class imputation procedure as detailed in ourInternational Passenger Survey methodology.

Weighting

Once responses have been collected, the survey data are weighted to produce estimates. The method involves uplifting the data at each port to match the actual number of international passengers passing through that port within the reporting period. Passenger traffic statistics are provided by the Civil Aviation Authority, Heathrow Airport Holdings Ltd (formerly British Airports Authority), Department for Transport, Eurostar, Eurotunnel and a number of individual airports. IPS weighting incorporates a number of stages to address different data accuracy requirements. Details of the weighting process is published in our International Passenger Survey methodology.

Additional sources of data

The weighting referred to is conducted based on the routes sampled in the IPS. Unfortunately, as the IPS does not cover all passenger routes, additional figures are obtained from other sources and added to the totals derived from the IPS when producing estimates of overseas travel and tourism. These additions are:

- UK residents on cruises departing from or arriving at UK shores

- Channel Islands expenditure and receipts from tourism

- estimates of travel across the land border in Ireland, provided by the Central Statistics Office in the Republic of Ireland and NISRA in Northern Ireland

Imbalance

Within the overseas travel and tourism sample, a higher percentage of people starting their visit than those ending it has been noted. This is important because the overseas travel and tourism estimates are based on the number of completed visits. An additional weighting stage, known as the "imbalance weight", was introduced in 2019 to reduce the difference in profile between the arrivals and departures samples.

The imbalance method works by applying a small uplift to the total estimates of overseas visits to the UK. This is done by comparing the proportion of arrival and departure data, among overseas residents, by country. Where this comparison provides robust statistical evidence that the departures figures for a particular country are under-estimates, an adjustment is applied to bring the departures figures in line with the proportion by country, among overseas residents, obtained in arrivals. Conversely, the comparison might reveal that the departures figure is an over-estimate, in which case it can be adjusted downwards.

This new method has ensured that published estimates of UK and overseas visitors are consistent with administrative data on total passenger numbers entering and leaving the UK, collected by the Civil Aviation Authority and the Department for Transport.

More information on the adjustment criteria will be provided in our International Passenger Survey methodology.

Seasonal adjustment

The number of travellers and their spending both have a clear seasonal pattern, with more visits and spending in the summer than in the winter. In addition, there are always additional peaks around other holiday periods such as half-term, that do not occur at exactly the same time each year.

Statistical techniques are used by the Office for National Statistics (ONS) with X-12-ARIMA software to produce seasonally adjusted figures. These figures show visits and spending with an estimate for the seasonal component removed. They allow for more meaningful comparisons to be made between months and quarters of the year and help to illustrate underlying trends.

Since June 2020, we have been unable to provide seasonally adjusted figures because of changing trends from the Coronavirus (COVID-19) pandemic. This adjustment will be re-introduced once our data have stabilised.

More details on seasonal adjustment procedures can be obtained through the Stakeholder Engagement Team via email at pop.info@ons.gov.uk.

Disclosure

The Code of Practice for Statistics sets out the principles for protecting data from being disclosed. The data governance Principle T6 states that "organisations should look after people's information securely and manage data in ways that are consistent with relevant legislation and serve the public good".

Details on the ONS statistical disclosure control methodology for social survey microdata are available.

7 . Other information

In addition to this Quality and Methodology Information, International Passenger Survey methodological information background notes outline dataset definitions, sample methodology, geography and purpose groupings relevant to each release.

General methodology information about the background, weighting and stages of the IPS can be found in our International Passenger Survey methodology.

For any further information, please contact the Stakeholder Engagement Team via email at pop.info@ons.gov.uk.

8 . Cite this methodology

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