

Article

# Improving our travel and tourism statistics: August 2025 update

An article outlining our progress towards planned improvements to our travel and tourism statistics, including official statistics in development.

Contact: Travel and Tourism team pop.info@ons.gov.uk +44 1329 444661 Release date: 26 August 2025

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#### 1. Main points

- This article outlines our progress in developing new methods underpinning our travel and tourism statistics since June 2025.
- We have updated how we calculate spend of overseas and GB residents, and made progress developing confidence intervals to accompany regional estimates of overseas residents and spend estimates of GB residents.
- We have completed developments to produce the annual 2024 datasets, combining data from our old and new International Passenger Survey (IPS) designs.
- We will continue to develop and quality assure our new travel and tourism methods; we invite user feedback on our published estimates and developing methods.

These statistics are labelled as official statistics in development, while we continue to develop and quality assure the new methods. Users should refer to advice provided in <u>Section 5: Data considerations for quarterly and annual 2024 estimates</u>, before using these estimates. Estimates are subject to future change as we introduce further improvements to these methods.

#### 2. Development of travel and tourism statistics

This article provides an update on the data collection changes and methodological developments we are undertaking to transform our travel and tourism statistics. This work was first set out in our <a href="Improving our travel">Improving our travel</a> and tourism statistics: changes from July 2024 article, and we provided progress updates in our <a href="February 2025">February 2025</a> article and in our <a href="June 2025 article">June 2025 article</a>.

These changes follow a statistical review that concluded in May 2022 with our <u>Travel and tourism review: final report</u>. This review explained why these changes are required and discussed how they would make our statistics more accurate and coherent.

We have continued to develop and quality assure our methods since our <u>June 2025 article</u>. This article accompanies our <u>Travel trends: 2024 release</u>, which includes the release of annual 2024 estimates and revised quarterly estimates for Quarters 1 to 4 2024. These estimates are published as official statistics in development, indicating further development and quality assurance is required before we can publish them as official statistics.

Our developments since June 2025 include:

- updating how we calculate spend of overseas and GB residents
- developing confidence intervals to accompany regional estimates of overseas residents visiting GB, and spend estimates of GB residents visiting countries abroad
- investigating data quality issues reported in June 2025
- completing developments to produce the annual 2024 datasets

We continue to work on the development of these travel and tourism statistics, as set out in <u>Section 7: Future developments</u>. We will keep users informed of our progress. If you would like to receive travel and tourism updates, please<u>subscribe to our GovDelivery newsletter</u>. We also welcome feedback from users as we progress with these developments (seeSection 9: Provide feedback).

## 3. Methodological development of overseas travel and tourism estimates

Our developing methods to produce travel and tourism statistics have remained largely unchanged since we published our <u>Improving our travel and tourism statistics</u>: <u>June 2025 update</u>, with two exceptions:

- changing how we calculate estimates of overseas and GB spend
- developing confidence intervals missing in June 2025

#### Imputing missing spend values

We have updated how we calculate spend of overseas and GB residents. During data processing, visitor spend is calculated using information collected on the International Passenger Survey (IPS) where available, or imputed where missing. Previously, quarterly spend averages were used for imputation; this now uses monthly spend averages. This change gives us a clearer view of monthly fluctuations within each quarter, such as seasonal trends or pricing changes, which were previously averaged out. Both calculated and imputed estimates now reflect monthly variation, making the overall spend estimates more responsive to changes within quarters.

This has been applied to all four 2024 quarters in our revised quarterly estimates, given in our <u>Travel trends: 2024 release</u>, to improve the alignment of our 2024 spend estimates. When comparing the quarterly and monthly spend average methods for Quarter 3 and Quarter 4 2024, the difference in aggregate unweighted spend amounts each month is within 1% in either direction.

We plan to continue to investigate and assess our imputation methodology to ensure it reflects our new design, as part of our wider development and quality assurance work.

#### **Confidence intervals**

In June 2025, we published newly developed travel and tourism estimates for Quarter 3 (July to Sept) and Quarter 4 (Oct to Dec) 2024, released as official statistics in development. Owing to the need for further development work, we were not ready to provide confidence intervals that would normally accompany:

- regional estimates of overseas residents visiting GB
- spend estimates of GB residents visiting countries abroad
- estimates of GB residents for the "Fly/Cruise stay on board" category

We have completed further development work, allowing us to provide confidence intervals for the first two sets of estimates in our Travel trends: 2024 release.

To create confidence intervals for the overseas residents' regional estimates, we replicated the method used in the previous IPS design, with details updated to reflect the new survey design. We will review this method as part of our ongoing development work.

Owing to data collection changes in the new IPS design for capturing GB residents' spend overseas, a new method for calculating accompanying confidence intervals is required. As outlined in our <u>June 2025 article</u>, estimates of GB residents' total spend abroad are now produced using the IPS to capture pre-departure spend and the <u>Great Britain Tourism Survey (GBTS)</u> to model and predict IPS respondents' post-departure spend.

Treating the resulting total spend as if it were collected by a survey only would underestimate the variance because the variability of the predicted part would not be accounted for. Therefore, some variability from the residuals in the post-departure spend has been added in the calculation of the standard errors (SE) used to produce the confidence intervals. This is done for GB residents' total spend, spend by purpose and spend by continent. A similar approach is taken for spend by country, but some areas have few responses on the GBTS. This means our variance estimates may be quite unstable. To mitigate this, the survey-only SE of estimates for these countries have been increased by the average increase in SE for the other countries in the same continent.

The new confidence intervals produced using these developing methods are included in our Travel trends: 2024 release as official statistics in development. We will continue to develop these methods, including seeking review from methodological experts, and will update on progress in our <u>Improving our travel and tourism statistics article series</u>.

#### 4. Creating the annual 2024 datasets

The methodological developments shared in our <u>Improving our travel and tourism statistics article series</u> outline our ongoing development of overseas travel and tourism data, from which we publish quarterly and annual estimates. Some additional steps were required to produce our 2024 annual estimates.

#### Combining data produced from two different methods

As set out in our <u>June 2024 article</u>, we implemented data collection and methodology changes from 1 July 2024. As such, data and estimates from Quarter 1 (Jan to Mar) and Quarter 2 (Apr to June) 2024 were collected and produced under our previous International Passenger Survey (IPS) design. Data and estimates from Quarter 3 (July to Sept) and Quarter 4 (Oct to Dec) 2024 were collected and produced under our new design.

The previous IPS design captured information from overseas and GB residents at the end of their visits. The new IPS design captures information from overseas residents at the end of their visit to GB, and captures information from GB residents as they depart GB, using the <u>Great Britain Tourism Survey (GBTS)</u> to model post-departure spend for these residents.

We have combined data from these four quarters to create our annual 2024 datasets published in our <u>Travel trends: 2024 release</u>, which means 2024 estimates are produced under two different designs. We consider it appropriate to merge these datasets as survey weights were calculated independently for each quarter, with quarterly estimates aggregated to create the annual estimates. Confidence intervals were calculated separately for each quarter, accounting for the differences in survey design.

This situation is unique to the Travel trends: 2024 release, reflecting the data collection and methodological changes occurring during the 2024 calendar year. These annual 2024 estimates are published as official statistics in development to reflect the ongoing development and quality assurance of these new methods. Future annual releases will be produced using data and estimates collected and produced solely using the new design.

#### **Incorporating Northern Ireland data**

As announced in our <u>June 2024 article</u>, from 1 April 2024, IPS data collection in Northern Ireland (NI) stopped, and provision of data on travel and tourism to and from NI by the <u>Northern Ireland Statistics and Research Agency (NISRA)</u> started.

The <u>Travel trends: 2024 annual datasets</u> incorporate these NISRA NI data for the first time, combining aggregate NI data with GB data produced using our new IPS design. From this, we have produced UK-level estimates for visits, spend, and nights headline estimates for overseas residents visiting the UK, and UK residents visiting countries abroad. These are for the world totals only, with the remaining estimates and breakdowns in the annual 2024 datasets representing GB-level estimates from our IPS design. We will explore the feasibility of incorporating NI data into more of our travel and tourism estimates as our development work continues.

### 5. Data considerations for quarterly and annual 2024 estimates

In our <u>June 2025 article</u>, we reported several data quality issues present in the <u>provisional Quarter 3 (July to Sept)</u> and <u>Quarter 4 (Oct to Dec) 2024 estimates</u>. Three of these data quality issues have been resolved in the <u>Travel trends: 2024</u> quarterly and annual estimates. These resolved issues relate to incorrectly assigning a Northern Ireland postcode to GB, incorrectly grouping total fares and spend across variables, and incorrectly including some non-tourists in Quarter 4 data. The following issues remain in the Travel trends: 2024 estimates:

- assigning an incorrect airport code to a small proportion of International Passenger Survey (IPS) cases
- incorrectly reporting some GB residents' overseas pre-departure accommodation spend as post-departure accommodation spend
- differences in the proportion of visits via sea transport being attributed to overseas residents
- missing "Fly/Cruise stay on board" spend information for GB residents

These issues affect Quarter 3 (July to Sept) and Quarter 4 (Oct to Dec) 2024 estimates, and therefore are present in the annual 2024 estimates.

International airport codes were incorrectly assigned for 7% to 7.5% of Quarter 3 and Quarter 4 2024 data because of changes in IPS sampling methodology and survey questions. We have retained these data in our estimates as the issue does not affect most other travel information collected. Caution should be taken when interpreting country-level estimates for visits, spend, and nights for GB and overseas residents, because some estimates may be underestimated or overestimated. This is because incorrect flight information has affected weighting and the estimates. We have implemented improvements to our code and interviewer checks in the questionnaire. The issue will be resolved for Quarter 2 (Apr to June) 2025 estimates onwards.

Some Great Britain Tourism Survey (GBTS) respondents may be including their pre-departure accommodation spend in their reported post-departure accommodation spend. We have removed all post-departure accommodation spend from our data while we investigate this issue. Therefore, it is likely that GB residents overseas spend estimates are underestimated in Quarter 3 and Quarter 4 2024 in our Travel trends: 2024 release. To investigate this issue, we have begun cognitive interviewing to understand why GBTS respondents may report pre-departure spend when asked about post-departure spend. This will help to identify and implement improvements where appropriate, such as improved question wording. We are conducting this work in collaboration with internal qualitative experts.

Our new approach is attributing a lower proportion of total visits via sea transport to overseas residents, and consequently attributing a higher proportion to GB residents in Quarter 3 and Quarter 4 2024, compared with our previous approach. As such, estimates of overseas resident visits via sea transport are likely smaller than they would have been under the previous approach. We will continue to investigate the survey design and administrative data used for calibration to better understand this difference.

As part of our investigation into confidence intervals for GB residents estimates for the "Fly/Cruise stay on board" category, we have identified that we do not ask GBTS respondents about their transport method to join a cruise. As such, the spend estimate for this category will be underestimated, as it will not include post-departure spend. We therefore will not be publishing "Fly/Cruise stay on board" spend estimates or confidence intervals for GB residents in our Travel trends: 2024 release. We recommend the provisional estimates published in our Overseas travel and tourism, provisional: July to September and October to December 2024 bulletin are not used, as they will also be underestimated. We will investigate the feasibility of capturing this information as part of our ongoing development work.

We have identified that spend information captured on the IPS for the "holiday – inclusive tours" category was not correctly assigned for some respondents. This occurred in our provisional Quarter 1 (Jan to Mar) and Quarter 2 2024 estimates, published in our <u>July 2024 Overseas travel and tourism</u>, <u>provisional bulletin</u> and in our <u>October 2024 Overseas travel and tourism</u>, <u>provisional bulletin</u>, respectively. As a result, "holiday – inclusive tours" spend was underestimated. We have corrected this in our Travel trends: 2024 release, resulting in a noticeable increase in inclusive tour holidays spend estimates in the revised Quarter 1 and Quarter 2 2024 estimates.

We are sharing our developing estimates as official statistics in development to support the release of timely and relevant statistics while we continue to resolve these issues. We are confident that the developing estimates published in our Travel trends: 2024 release are relevant and provide useful insights into travel and tourism in 2024. However, they should not be directly compared with estimates produced from our old design while we continue to develop them. When interpreting these estimates, users should be aware of the potential effects of these data issues on the estimates. These include:

- the underestimation or overestimation of some country-level estimates for visits, spend, and nights for GB and overseas residents
- the underestimation of GB residents overseas spend estimates
- smaller visit estimates for overseas residents travelling via sea transport, compared with our previous approach

Where estimates are accompanied by confidence intervals, these can be used to help understand the uncertainty around the estimates. Caution should be taken when interpreting estimates where confidence intervals are not currently provided.

#### 6. Understanding comparability of estimates over time

As part of the continuing development of our new methodology, there are several areas that require further investigation to fully understand the effects of our data collection changes (see Section 5: Data considerations for quarterly and annual 2024 estimates). These investigations could lead to changes to our methodology, meaning estimates produced from these methods could also change. In this section, we provide some early insights into the use of time series analysis to understand the comparability of our new estimates over time. However, we will need to wait until we have completed these investigations, and our methods and estimates are more stable, before we can draw conclusions on how these new estimates compare with those produced using our old design.

#### **Background**

In our <u>June 2025 article</u>, we outlined our plans to use time series analysis to investigate how estimates produced using our old and new methods compare over time, to understand the possible effects of these methods changes. As we did not conduct a parallel run of our old and new data collection methods, it is not possible to fully isolate the effects of these methods changes. This means any estimates changes could be caused by real-world changes in international travel patterns, as well as the methods changes. However, in the absence of a parallel run, we aim to use this time series analysis alongside other evidence to help identify and investigate any time series breaks since we implemented our methods changes in July 2024.

#### Initial time series analysis

We have used time series modelling to produce travel and tourism estimate projections for Quarter 3 (July to Sept) 2024 onwards, assuming previous travel trends and methods continued unchanged. These projections are approximated using a forecasting model fitted to the published back series.

Having investigated several possible time series modelling approaches, we chose State Space Models (SSM) to use in our analyses. The SSMs use data from Quarter 1 (Jan to Mar) 2009 to Quarter 2 (Apr to June) 2024, but exclude Quarter 1 2020 to Quarter 4 (Oct to Dec) 2022, because of the COVID-19 impact on the historical series. This includes the planned update of these SSMs as set out in our <u>June 2025 article</u>, to include final estimates for Quarter 1 and Quarter 2 2024, published in our <u>Travel trends: 2024 release</u>.

We have used SSMs to model 73 time series representing different travel and tourism breakdowns, with one of these time series shared in Figure 1.

Figure 1 illustrates how, once our methods and estimates are more stable, these SSMs can be used to compare our new estimates against estimates projected using the assumption that methods and travel patterns remained unchanged. It shows the historical time series for total overseas residents' visits to the UK (GB from Quarter 1 2024) and the equivalent SSM-projected estimates for Quarter 3 2024 to Quarter 2 2025. Our revised estimates for Quarter 3 and Quarter 4 2024, produced using our developing methodology and published in our Travel trends: 2024 release, are plotted against these projected estimates for illustrative purposes.

These new estimates may change in the future, as we continue to develop our new methodology and complete the outstanding developments in <u>Section 7: Future developments</u>. Therefore, conclusions on how these new estimates compare with those produced using our old design should not be drawn until methods and estimates are more stable, as they may be misleading. We also need to collect data for additional time periods using our new design, to build a picture of trends over time.

We will provide a further update on this time series work once we have progressed with these further investigations.

### Figure 1: Overseas residents' visits to the UK or GB, shown as a historical series and State Space Model (SSM) fitted projection

Number of visits to the UK (2009 to 2023) or GB (2024 onwards) by overseas residents

#### 7. Future developments

#### Method development and quality assurance

We have outlined the methodological developments made since our <u>June 2025 article</u> to transform our travel and tourism statistics. These estimates are published as "official statistics in development", indicating further development and quality assurance is required before we can publish these estimates as "official statistics". This may result in changes to our estimates as we refine our methods.

To continue with this development, we plan to:

- conduct further review and quality assurance of our weighting and estimation approaches, including evaluation using Quarter 1 (Jan to Mar) and Quarter 2 (Apr to Jun) 2025 data
- further develop and test the modelling approach used to estimate Great Britain (GB) residents' overseas spending
- resolve outstanding data quality issues outlined in <u>Section 5: Data considerations for quarterly and annual</u> 2024 estimates
- · review our sampling processes to ensure data collection is statistically robust and operationally feasible

#### **Development of data sources**

We have incorporated Northern Ireland (NI) travel and tourism data, provided by the Northern Ireland Statistics and Research Agency (NISRA), in our <u>Travel trends: 2024 headline annual estimates</u>, (see Section 4: Creating the annual 2024 datasets for more detail). We are exploring the feasibility of incorporating NI data into more of our travel and tourism estimates in future. We will update users as we progress with these investigations.

Since July 2024, we have been working with the Civil Aviation Authority (CAA) to harmonise the International Passenger Survey (IPS) and CAA departing passenger survey data collection methods. We continue to monitor and improve these through response rates and quality of the responses. We plan to start developing new methods to incorporate CAA data with IPS data in our estimates in late 2025 to early 2026, and will implement these methods into our travel and tourism estimates once complete. We will explore revising the back series from Quarter 1 2025, and will update users with expected release dates for this implementation as we progress with the required development work.

#### 8. Glossary

#### **Discontinuity**

Changes in time series resulting from a sudden change in the average level of the series or a complete shift in periodic effects, such as seasonal patterns.

#### Overseas residents

An overseas resident is a person who permanently resides outside the UK.

#### **Visits**

The figures for visits relate to the number of completed visits, not the number of visitors. Anyone entering or leaving more than once in the same period would be counted on each visit.

#### Visits by overseas residents to Great Britain or UK

A visit by an overseas resident is a visit for a period of less than 12 months. GB or UK citizens residing overseas for 12 months or more coming home on leave are included in this category.

#### Visits outside the UK by residents of Great Britain or UK

Visits for a period of less than 12 months by people permanently residing in Great Britain or UK, who may be of foreign nationality.

#### Weighting

A method used to make the responding sample of passengers representative of all passenger trips. The final weight includes components that represent the sample design, non-response and calibration to known passenger totals to improve consistency.

#### 9. Provide feedback

If you have any feedback or suggestions on the work we are doing to develop our travel and tourism statistics, please contact us at <a href="mailto:travel.and.tourism@ons.gov.uk">travel.and.tourism@ons.gov.uk</a>.

#### 10. Related links

#### Travel trends: 2024

Article | Released 26 August 2025

Annual estimates for overseas travel and tourism, including visits, spending, number of nights, and purpose of visit. These are official statistics in development.

#### Overseas travel and tourism, provisional: July to September and October to December 2024

Bulletin | Released 13 June 2025

Estimates for overseas travel and tourism, including visits, spending, number of nights, and purpose of visit. These are official statistics in development.

#### Travel and tourism review: final report

Article | Released 16 May 2022

Final report of the travel and tourism review, including the findings of the review and the next steps for this work.

#### 11. Cite this article

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