



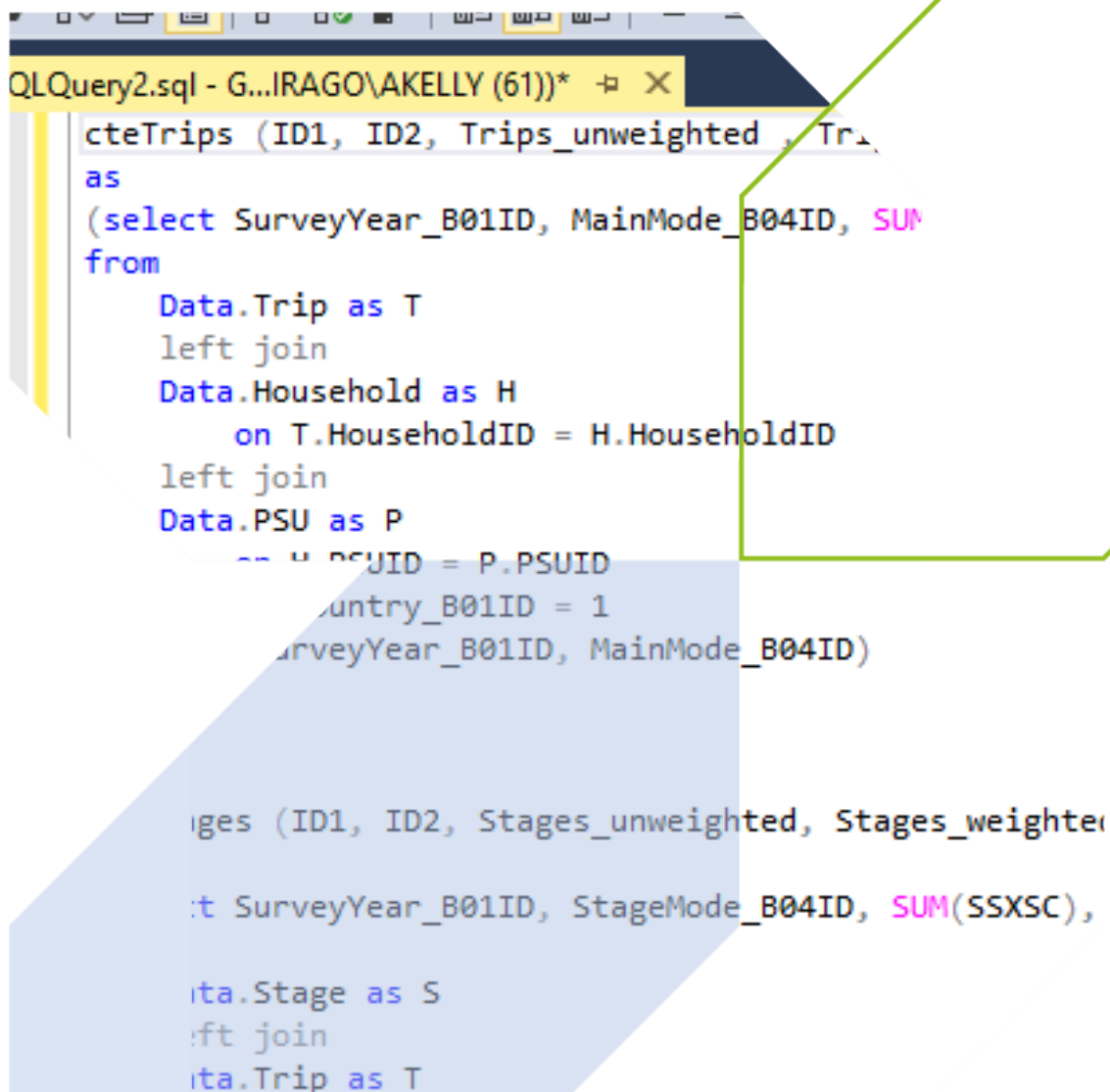
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Department
for Transport

UK Data Archive Study Number 5340 - National Travel Survey

Data Extract User Guide

A guide to the National Travel Survey data extracts



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October 2025

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Executive summary

Introduction

1. This document is intended to assist you with analysing the data of the National Travel Survey (NTS). It aims to do so by covering the following topics:
 - An introduction to the survey.
 - A summary of survey changes since 2002.
 - Where to access the data.
 - Describing the structure of the data contained within the NTS extract files.
 - A list of ONS standard variables and geographies that are available.
 - Important points to consider when analysing NTS data.
 - How to handle NTS weighting variables.
 - How to calculate key metrics in line with our published tables (such as “Trips per person per year”).
2. There are other documents published with regards to the National Travel Survey. We will include links to these documents throughout to avoid duplicating information, and to ensure that updates to those documents do not have to be replicated here.

1. A summary of the survey

Introduction to the fieldwork method

- 1.1 The National Travel Survey is a continuous longitudinal survey of personal travel at a household level, providing up-to-date and regular information about personal travel and monitoring trends in travel behaviour over time.
- 1.2 Postcode areas are randomly selected, and then a random sample of households is taken, all of whom receive a letter inviting them to take part. For those households that take part, information is gathered in the following ways:

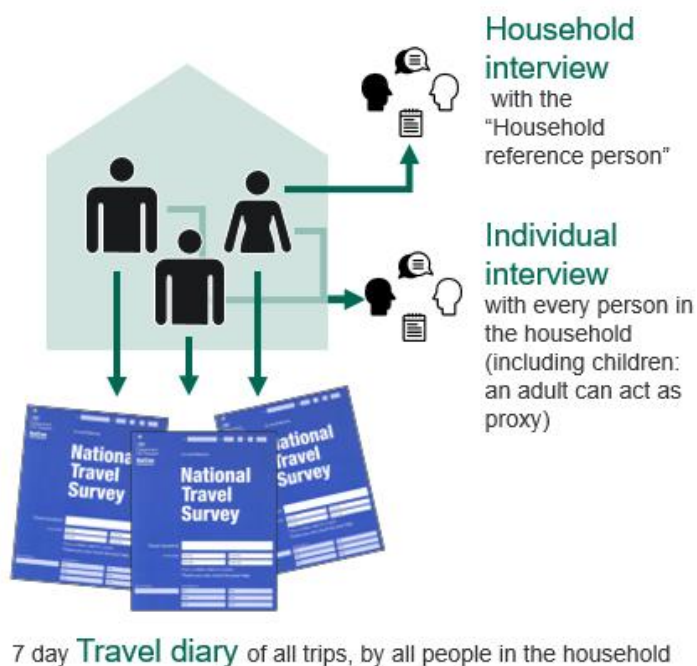


Figure 1 Methods of data capture in the National Travel Survey

- 1.3 A **Household** interview with the "household reference person" who has the highest income, or their spouse/partner, which includes questions relating to the entire household (such as information on the type of accommodation and tenancy, combined household income etc.). This also gathers information on the household vehicles and who the main drivers are.
- 1.4 An **Individual** interview with every person in the household (including children, where adults proxy for children under 11), asking questions specifically about them (such as educational attainment, their views on local public transport etc.). Individuals are also asked for some of their **Attitudes** to transport in this survey, which they can do via a self-completion method. Further, if the individual is a main driver of a household vehicle, they are also asked questions in the **Vehicle** questionnaire at this stage. In addition, the details any travel **Tickets** such as concessionary travel passes are collected at this stage.

- 1.5 Every individual in the household also completes a seven-day **Travel Diary**. Each household has a set start date during the month, this ensures an even spread of start dates across the month as well as an even distribution of start days across the week. In the diary they record information on all their trips for the next seven days, short walks (less than 1 mile) are recorded only on one day to reduce burden. Currently short walks are recorded on day 1 of the travel diary.
- 1.6 Because of the manner in which data is gathered, different weights are generated for interview data and for travel diary data. What these weights are will be explained in more detail in the chapter on weighting, and the practical application of these will be shown in the Analysis of the NTS Data Extract chapter.
- 1.7 Further information on sample selection and fieldwork, weighting methodology, imputation, and the impact of the coronavirus pandemic (COVID-19) on the NTS, can be found in the NTS Technical Report, which is published with the new release each summer. The most recent release can be found below:

<https://www.gov.uk/government/collections/national-travel-survey-statistics>

Summary of changes to the survey since 2002

- 1.8 The Ministry of Transport commissioned the first NTS in 1965/1966, and it was repeated on an ad-hoc basis in 1972/1973, 1975/1976, 1978/1979 and 1985/1986.
- 1.9 In July 1988 the NTS became a continuous survey (i.e., fieldwork was conducted on a monthly basis) with an annual set sample size of 5,040 addresses. This increased to 5,796 by 2001. In 2002 the annual set sample size increased to 15,048 addresses. Data is readily available to users from 2002 onwards.
- 1.10 In 2012 the NTS, which had covered Great Britain since 1965, was changed to only cover England. This was in response to increasing devolution.
- 1.11 In 2016, the day of the travel diary where short walks were recorded was changed. Between 2002 and 2015, short walks were recorded on the last day of the travel diary (day 7), but this was changed in 2016 to the first day (day 1). The effect on weighting was backdated and corrected in the 2016 release to maintain the time series, so in practice this effect can be ignored when analysing the data.
- 1.12 From January 2023 the number of households invited to take part in the National Travel Survey was increased, resulting in an increase to the sample size. For more information please see the NTS Technical Report.

Interview sample, and Diary sample

- 1.13 There are some households where all the interviews were completed, but not all travel diaries. In this instance, the interview data is still useful, but if the diary data were to be used for the remaining individuals, it would give an under-estimation of the travel behaviour for those households. These households are known as **partially productive** households.

- 1.14 A household where everyone completes the interview as well as everyone completing the travel diary, is called a **fully productive** household. For these households, weighting W1 is equal to one (please see chapter 3 – Data Structure – for a discussion of weighting).
- 1.15 There are no instances where a household has partial completion of the interviews. These households are removed from the data during the data cleaning stage following fieldwork.
- 1.16 The variable OutCom_B02ID on the Household table also describes whether the household is fully- or partially-productive.
- 1.17 Because of this distinction between fully- and partially-productive households, as well as different weights applied for data obtained from the interviews and the travel diaries, it is important to understand what sample you are using.
- Data gathered from the interview is called the **Interview Sample**. If you are considering a problem which only requires information from the interview (Household, Individual, Ticket, Vehicle tables only), then you are using the interview sample. This sample also includes partially-productive households.
 - Data gathered from the travel diaries is called the **Diary Sample**. If you are considering a problem which requires information from the travel diary (Trip, Stage, LDJ tables), then you are using the diary sample, no matter how little data you use for these tables. This sample only includes fully-productive households.
- 1.18 The diary sample is therefore smaller than the interview sample. Published table NTS0001 lists the sizes of each sample. This can be found online at <https://www.gov.uk/government/collections/national-travel-survey-statistics> under the most recent release.

2. Key definitions and concepts

England, and Great Britain

- 2.1 Since 2012, interviews have been conducted of households in England, but this is still a survey of trips undertaken within Great Britain.
- 2.2 This means that data is still collected when a member of an English household makes trips that end in Scotland or Wales, or one of the inshore islands by boat (such as the Isle of Man or the Channel Islands), but not if a person leaves Great Britain.
- 2.3 If a journey involves leaving the country by sea, air or Eurostar then only that part of the journey up to the airport/seaport or ticket control point at which the respondent boards the boat, plane or train, is included.

Trip

- 2.4 A trip is defined as a one-way course of travel having a single main purpose, e.g. a walk to school or a trip to work without any break in travel.
- 2.5 Usually, the respondent is clear what the single main purpose of a particular trip is. However, sometimes people go out for several reasons, or go out for one main reason but carry out a number of different activities, perhaps at different places. Complex travel like this is broken into separate trips so that the data can be analysed.
- 2.6 A trip is made up of a number of individual stages, or separate modes that are used to complete the course of travel.

Trips excluded from the NTS

- 2.7 Not every trip is included in the survey.
- 2.8 The NTS is the Department for Transport's main source of information about personal travel. Commercial travel is collected from other data sources.
- 2.9 The NTS is concerned with travel within Great Britain only, and by households in England. The survey is focused on journeys made using the transport network, and as such "off road" journeys are not included. For example, if an interviewed household in England goes on holiday to Wales and makes day trips in Wales, these trips are included in our travel diary.
- 2.10 Where a stop is entirely secondary to the main purpose (such as a stop to buy a newspaper on the way to work), the stop is disregarded.

- 2.11 Travel by air and boat is included where this mode is being used to get from one place to another within Great Britain.
- 2.12 Walks of under 50 yards are excluded to reduce the burden on respondent. Further, walks of under one mile are only recorded on one day of the travel diary for the same reason.
- 2.13 Not all trips in the course of work are recorded. Jobs requiring moving or delivery goods such as postal services are not included as this is not classed as “personal” travel. Similarly, crew of specially-equipped vehicles (such as fire engines), people paid to walk or cycle (such as police and cycle couriers), and many of trips made by taxi drivers and driving instructors, are not included. A general rule is that respondents whose job involves the movement of goods or people are advised to exclude “in the course of work” from their travel diary.

Stage

- 2.14 A trip consists of one or more stages. A new stage is defined when there is a change in the form of transport or when there is a change of vehicle requiring a separate ticket.
- 2.15 For example, A trip to work might involve walking to a bus stop, taking a bus journey to a rail station, travel on national rail, and then walk to work. This is 4 stages (depending on the length of the walking stages and what day of the travel diary it is... see the section on “Short Walks” further in this list).
- 2.16 To reduce the burden on respondents, travel involving a number of stops for the same main purpose and using the same form of transport are treated as one continuous ‘series of calls’ trip from the first such call to the last one. Only shopping and ‘in course of work’ travel can be treated in this way. For example a doctor’s house call round could therefore consist of one trip to the first patient, one series of calls trip to the other patients and one trip from the last patient back to the surgery or home.

Boardings

- 2.17 If a person makes a trip that involves using multiple bus journeys or train journeys all on the same ticket, with no break in between, then this is counted as a single stage of that mode rather than separate ones, but each time the vehicle is changed it counts as a “boarding”. Boardings are only recorded for public transport.
- 2.18 Here is an example: Let us say you needed to travel from London to Grimsby Port. You leave the house and walk to the bus stop and need to take three buses to get to Kings Cross Rail Station. You board a train which has a change at Lincoln and get on a new train to Grimsby Town. Once there, you call a taxi to the port. Here is how the trip would look in the final data:

Stage	Stage Mode	Boardings
1	Walk	Nothing (this is a private mode, so boardings isn't measured here)

Stage	Stage Mode	Boardings
2	Bus in London	3
3	Surface Rail	2
4	Taxi/Minicab	1

Table 1 Example of a trip using boardings.

2.19 As the longest stage of this trip was surface rail, this trip would have a Main Mode of “Surface Rail”.

Round Trips

2.20 A normal trip involves a travel from an origin to a destination, with the two being distinct. A “Round trip” on the other hand has the same destination as the origin, for example if a person goes for a pedal cycle ride and just comes straight home.

2.21 These are split by the coding team at NatCen into two trips, with a location chosen approximately half-way as the “destination”.

2.22 When we consider walking it then gets more complicated, as for the round trip to be included in the travel diary both “sides” need to be of 1 mile or more unless it is Day 1 of the travel diary, meaning only walking round trips of 2 miles or more are recorded on Days 2 to 7.

Series of Calls

2.23 In order to reduce the burden on respondents, travel involving a number of stops for the same main purpose and using the same form of transport can be treated as one continuous series of calls from the first such call to the last one unless there is a significant break at any stop. Only shopping and travel in the course of work are treated in this way.

2.24 As an example, consider a shopping trip (with shop names chosen at random!) where the person leaves Tesco having shopped there, then goes to Argos, then Holland and Barrett, then Superdrug, and finally Iceland, shopping at all of them. We do not record this as 5 separate shopping trips: Instead, we consider this a single shopping trip. The travel diary as recorded by the responded would be as follows:

Trip	Trip from	Trip to	Series of calls?	Distance (miles)	Duration (minutes)
1	Home	Tesco	No	2.5	7
2	Tesco	Argos	Yes	0.3	4
3	Argos	Holland and Barrett	Yes	0.1	2
4	Holland and Barrett	Superdrug	Yes	0.1	2
5	Superdrug	Iceland	Yes	0.3	4
6	Iceland	Home	No	2.0	7

Table 2 Example of a series of calls in a travel diary, as recorded by the respondent.

2.25 The above would be coded as follows, assuming there was no change in mode between shops (e.g. all walking), and there was no significant break at any stop:

Trip	Trip purpose from	Trip purpose to	Series of calls?	Distance (miles)	Duration (minutes)
1	Home	Shopping	No	2.5	7
2	Shopping	Shopping	Yes	0.8	12
3	Shopping	Home	No	2.0	7

Table 3 The above trips following coding as "series of calls"

2.26 Please consider the usual short walk restrictions: if any of the trips above were walked and the total distance less than 1 mile, then we would only record it on Day 1.

2.27 In practice we exclude trips which are a series of calls using variables in the travel diary (see the "Weightings" section below), but we still keep these in the database as they can be useful data.

"Missing" data within the NTS data extract

2.28 For many questions that were asked in the interview, there was the possibility to not answer the question, or for the question to not be appropriate. Within the data, there is also the added complexity of having questions not be asked in certain years. To account for this, within the data there is a consistent coding used for all variables for these options:

Response level	Meaning
-8	Not applicable – Question not asked, mostly due to question routing.
-9	Did not answer – Question was asked, but the respondent did not answer, or response could not be coded.
-10	"Dead" variable – Question was not asked in this year of the survey.

Table 4 Coding of missing data in the NTS data extracts

2.29 As an example, a variable which was only asked in the years 2010 to 2012 will have "-10" in all rows outside of this period, to indicate that it was not asked in those years.

2.30 Not all questions are asked for all individuals. Due to question routing some questions are skipped where they aren't relevant, and in this case the response is coded as -8.

2.31 Additionally, in the NTS data extract, NA values indicate missing data for variables that were not parameterized (variables without suffixes such as _B01ID, _B02ID,

etc.) or for cases where weights could not be calculated. Some parameterised variables also contain NA values, which we are aware of, and ongoing work is being carried out to address this.

Methods of travel included in the NTS

2.32 The various modes contained within the NTS are described below.

2.33 For some variables these modes are aggregated, for example *MainMode_B03ID* contains 32 separate modes, whereas *MainMode_B04ID* (which is used in our published table NTS0303) contains 13 modes. Please consult the lookup tables to see which modes are contained within each variable and how they are aggregated.

Stage Mode

2.34 In the stage table, the mode is given by the variable StageMode, of which there are numerous versions (such as StageMode_B01ID, StageMode_B04ID) which are just different ways to aggregate the same data.

“Main” mode or Trip mode

2.35 Whilst a trip can be made up of multiple stages each potentially with a different mode of transport, only one mode can be counted as the “main mode”, as a way of classifying the entire trip. The stage with the longest distance is used to define the “main mode”. If two stages have the same length, the latest stage in the series of stages is considered the main mode.

Walk

2.36 Walking includes all travel on foot. It is also used when respondents ride in non-motorised wheelchairs, prams or pushchairs, as well as when they ride on toy pedal cycles, roller-skates, skateboards, non-motorised scooters, or when they jog. For example, children who accompany their parents on a visit to the shops on toy pedal cycles (where the parents are walking).

Short walk

2.37 In the travel diary we ask respondents to record all of the journeys we make, but we only ask them to record walks of under 1 mile on Day 1 of their diary. This is to reduce the burden. These are referred to as short walks.

2.38 Prior to 2016, the short walks were recorded on Day 7 of the travel diary, but there were some concerns that this was poorly recording the trips as there was a noticeable drop in the average number of trips recorded on a day. So, in 2016 there was a trial of changing the date with half of the sample recording short walks on Day 1, which was rolled out to the entire sample in 2016. The weightings between 2002

and 2016 were recalculated and these are what are used in throughout the NTS data extracts.

- 2.39 The key metrics that count measures such as numbers of stages/trips, distance and time, are calculated to take account of this effect of short walks. Please see the chapter on “Weightings and Key Measures”.

Cycle

- 2.40 This includes all forms of pedal cycle, with the exception of children's toy pedal cycles not primarily intended for use as a means of transport.
- 2.41 This mode includes electric pedal cycles.

Car

- 2.42 This includes all three- and four-wheeled cars, as well as estate cars, people carriers/MPVs (multi-person vehicles or minivan), and four-wheel drive passenger cars (such as Range Rovers and the Toyota Rav4).
- 2.43 This also includes vans which have windows rather than panels to the rear of the driver's seat, and which have seats where rear passengers can sit.
- 2.44 Hire cars are also included under this mode, as would be a taxi or minicab when it is used by its owner for private purposes rather than as part of their work. If a driver is provided, the car is classified as public transport and coded as a taxi or minicab.
- 2.45 Motorised caravans or dormobiles, and motorised wheelchairs are not coded as 'cars', but as 'other private transport'

Motorcycle, or motorcycle combination

- 2.46 This category comprises all two-wheeled motorised vehicles used for private transport, which are capable of carrying only one or two persons including the driver.
- 2.47 Motorcycle or scooter combinations (i.e. with a sidecar) also fall into this category.
- 2.48 Electric pedal cycles do not count as “motorcycle”, and are instead counted as “Pedal cycles” within the NTS.

Van or lorry

- 2.49 A van or lorry is a three- or four-wheeled motorised vehicle with panels to the rear of the driver's seat. Farm vehicles are included in this category, but motorised caravans and dormobiles are included as “Other private” transport.

2.50 If respondents travel in a van or lorry to deliver goods as part of their work, then their travel is outside the scope of the survey and should not be included. However, if they use a van or lorry for personal travel, their trips should be included.

Private (hire) bus

2.51 This includes buses, coaches and minibuses which are owned or hired (for example by clubs, employers or schools) and are not available for use by members of the general public except when hired for a particular occasion. If someone goes on an excursion or coach tour, their mode will almost certainly be counted as “Private (hire) bus”. Details of any money paid towards hiring the bus are not required.

Other private transport

2.52 “Other private” methods of transport include motorised wheelchairs, electric scooters, ambulances, hospital cars, caravans, dormobiles, quad bikes and minibuses (unless used as private hire).

Ordinary bus: Local bus, and “Bus in London”

2.53 This covers regular bus services which provide short distance travel within a locality and which serve every place on the route. Local public service buses generally operate over fairly short routes within urban or suburban areas or link nearby towns with outlying villages. The intervals between stops are relatively short, and the speed of the bus is relatively slow.

2.54 The mode subdivided according to the area where the bus was used:

- Bus in London – an area broadly representative of the area of Greater London
- Other local bus – all other areas

2.55 If the origin of the bus trip is in a county outside of London, and the destination of the bus trip is in a county inside London, then each stage of the bus trip might be coded differently. If there is only a single stage then it will be coded as a “Bus in London”. If the bus trip is made up of multiple stages then only the final stage is coded as “Bus in London”, with the other stages being coded “Other local bus”.

2.56 If the origin of the bus trip is in a county inside London, and the destination of the bus trip is in a county outside of London, then how it is coded depends on the number of stages: If it is a single-stage trip it is coded as “Bus in London”, and multiple stages are all counted as “Other local bus”.

Coach/Express bus

2.57 Coaches and express buses usually operate from town centres and connect only with a limited number of places enroute. They are characterised by long intervals between a limited number of stops. The minimum fare is generally high and coaches will generally have a higher standard of comfort than ordinary buses. For example,

this code applies to National Express services, and express buses to and from airports.

- 2.58 Some bus companies run what they call 'express buses', which do not run between town centres and are essentially 'ordinary buses'. Such buses should be coded as ordinary buses

Excursion/Tour bus

- 2.59 This category covers vehicles (usually coaches) used for excursions or tours for fare-paying passengers. They are usually arranged and publicly advertised for specified times and days. Normally these services are run for summer holiday trips, but they may also be used for trips to sports fixtures, exhibitions, or festivals. Excursion/tour buses are generally accessible to all members of the public. In contrast, if they have been arranged by and are restricted to a particular group of people, they are classed as "Private (hire) bus"

Surface Rail

- 2.60 This includes all train services operated by National Rail companies and the underground service in the Merseyside conurbation which operates like a regular train line. This also includes the London Overground service, operated by Transport for London.
- 2.61 It excludes services operated by London Transport, the services listed under "light rail" (which are classed as "Light Rail") and other railway services such as steam trains (such as the Bluebell Line, Romney, Hythe & Dymchurch, which are classed "Other Public Transport"). Travel at fun fairs is excluded from the survey.
- 2.62 The London Underground is also excluded and has its own category.

Light rail

- 2.63 With the exception of steam trains (which are classed as "Other Public Transport"), all rail services not included in the 'LT underground' or 'train' categories are counted as "light rail"

- 2.64 The following list shows examples of light rail:

- Docklands Light Railway
- Manchester Metro Link
- Tyne and Wear Metro
- Glasgow Underground System
- Sheffield Supertram
- Blackpool Tramway
- Croydon Tramlink
- Nottingham Express Transit
- Midland Metro

London Underground

- 2.65 This covers only those services operated by Transport for London. Though most of these trains operate exclusively underground, there are some lines where trains travel both underground and on the surface. These are categorised as “London Underground” all the same.
- 2.66 London Overground journeys should be coded as “Train”.

Aircraft (public)

- 2.67 This covers all domestic public air travel where the trip begins and ends within the area covered by the survey (i.e. Great Britain). This means that flights with an origin or destination outside Great Britain are excluded. For example, flights to or from Ireland, the Channel Islands or the Isle of Man are excluded, whereas flights to the Orkney and Shetland Islands are included.
- 2.68 This excludes private air travel, which is coded “Other private travel”. Trips made simply for the pleasure of going in a plane, rather than in order to get to a particular destination, are excluded from the survey altogether.

Taxi/minicab/private hire vehicle

- 2.69 This includes taxis hailed in the street or hired from a taxi rank, and minicabs which can be booked in advance and may or may not have a meter. also includes all hire vehicles where a driver is provided, with the exception of buses hired for private use.

Other public transport

- 2.70 This code covers means of public transport which are not specified elsewhere.
- 2.71 Travel by water or trains other than those covered by “London Underground”, “Train” or “Light Rail” (such as steam trains like the Bluebell Line, Romney, Hythe & Dymchurch) are coded as “Other public transport”. Travel by 'Dial-a-Ride' schemes (door-to-door community transport service for people with a permanent or long term disability or health problem who are unable, or virtually unable to use public transport) is also included in this category.

New modes of transport Other public transport

- 2.72 In 2022, two new modes of transport, ferries and mobility scooters were added to the list. Prior to 2022, trips and trip stages using ferries were coded at data entry stage as ‘other - public transport’ and mobility scooters as ‘other - private transport’. In 2021, two modes of transport were added to the list, e-scooters and e-bikes. Prior to 2021, trips and trip stages using e-scooters were coded at data entry stage as ‘other – private transport’ and e-bikes were coded as ‘pedal cycle’. DfT has reviewed the data gathered in 2022 for these new mode codes. A low number of trips using these modes were detected in all cases, however there are few data sources against which

to validate this data. DfT will keep data for the new modes under review with the intention of presenting these separately when we have confidence in the quality of this data. In 2022, trips for these modes remain categorised under their previous categories.

Trip purposes included in the NTS

2.73 “Trip Purpose” is the main reason why people made the trips they make.

Escort and Non-Escort trips

2.74 Escort trips are those made in order to accompany someone else. Examples include taking children to school, taking someone shopping etc.

2.75 A non-escort trip is one where the individual travels on their own behalf, although not necessarily alone.

2.76 There are also a few cases where an escort purpose is used when a person is travelling alone. For example, if a mother were to collect her child from a friend's house then the outward journey would still have an escort code (in this case, “Other escort”).

2.77 If a non-household member is being escorted, the escort purpose is the equivalent of the non-household member's purpose, for example “Escort home” will be used when a person the trip is to the home of the person being escorted, and not the address of the sampled household.

2.78 Where it is not clear whether an escort or non-escort code should be assigned, a non-escort code takes precedence. For example, if a person were to drive their partner to the shops and then stay with them, the journey purpose would be “Shopping” because it would be difficult to ascertain if they were escorting their partner, or shopping in their own right.

Trip purpose from, and Trip purpose to

2.79 The purpose of a trip is defined in terms of what respondents do at the end of it. For example, if a person goes to a corner shop and buys some milk then the purpose of his trip will be categorised as “food/grocery shopping”.

2.80 People who analyse trip data need to know two things. The first the reason why respondents made each trip (the “purpose to” i.e. the reason the respondent went to somewhere). The second is the reason why respondents were at the place where each trip started (the “purpose from” i.e. the reason the respondent was at the place where they are travelling from).

2.81 An example sequence of trips from home to work, to the supermarket to buy food and then home is recorded in the NTS data as:

Trip	Trip Purpose From	Trip Purpose To
1	Home	Work
2	Work	Food/grocery shopping
3	Food/grocery shopping	Home

Table 5 An example series of trips, demonstrating "Trip purpose to" and "Trip purpose from"

2.82 Where multiple purposes can explain the trip, then the purpose which took the longest time takes precedence, followed by the purpose which takes place first.

2.83 "Trip purpose from" and "Trip purpose from" are both available as variables in the NTS data extract.

Home

2.84 A respondent's home is the sampled address at which they were living at the time of the Placement Interview. If a student is sampled at their student address, this would be classified as their home.

2.85 "Home" should only be used when a respondent leaves (the "purpose from") or returns to (the "purpose to") the sampled address. It does not apply to trips to other people's homes, which are classified as "Visiting friends/relatives at home".

2.86 There will be instances when respondents are temporarily away from the sampled address, for example if they are staying with friends on in a hotel. In such instances the trips to and from that temporary residence would not be allocated "Home". Instead they would be allocated "Holiday: base" if staying at a hotel or holiday home or staying with friends for four or more days. (If they were staying with friends for fewer than four days "Visiting friends", would be used). Similarly, if someone goes to their second home at weekends (for leisure purposes) this is counted as "Holiday: base".

2.87 If a respondent moves home between the placement interview and the end of the travel week the sampled address should remain as their "Home" and their new address is counted as "Holiday: base".

Escort home (not own)

2.88 This is used when a respondent takes a non-household member to that person's home rather than to the respondent's home.

2.89 When a respondent goes to their own home, whether they are travelling alone or someone else is travelling with them, their purpose is always coded as "Home".

Work

2.90 This applies to trips to the respondent's main place of work. When adults take part in paid work experience, their purpose is classed as "Work". For people who have no

usual place of work (such as construction workers), or people who work mainly or exclusively from home, the purpose code “In the course of work” is instead used.

- 2.91 When children take part in work experience (whether paid or unpaid), their purpose is categorised as “Education”.
- 2.92 People who do unpaid voluntary work or adults taking part in unpaid work experience have the purpose code “Entertainment/public social activities”.

Escort work

- 2.93 This is used when a respondent makes a trip specifically to accompany someone else who is commuting to or from their usual place of work. For example, a woman might drive her husband to work. Equally, a man might drive from home to the station to collect his wife who is coming home from work.

In the course of work

- 2.94 This applies to work-related trips respondents make to places other than their main place of work. All work-related journeys of people without a usual place of work or who work from home are coded 'in course of work'.
- 2.95 Trips made during working hours but which are not related to a respondent's job (such as shopping during their lunch break) are not included.
- 2.96 Work-related trips are still defined as “in the course of work” even if they are not made during office hours (such as travelling to a conference at a weekend).
- 2.97 Sometimes respondents may use a hotel or even a second home as a base for business trips (in the case of a second home it may be that respondents live there near their office during the week and then return to the sampled address at the weekend). All trips to a hotel or second home should be coded as “in the course of work”. If a respondent is living in a second home and travels from it to their main place of work, the trip's purpose would be counted as “work”.
- 2.98 Childminders should have any trips they make where they take children (not their own) coded as “in the course of work”. All walking trips made by debt collectors in the course of their work are excluded, and all others assigned “in the course of work”.

Escort in the course of work

- 2.99 This purpose is used when a respondent accompanies someone else who is making trips in the course of their work. For example, if a boy were to accompany his GP mother on her rounds, his trip would be coded as “Escort in the course of work”. Her purpose though would be coded as “In the course of work”.

Education

- 2.100 This applies to trips made by schoolchildren or students to the place where they are studying, including college lodgings. It applies to students whether they are full-time, on day release or following part-time vocational qualifications. However it does not include someone attending a training course as part of their paid employment.
- 2.101 If a child takes part in work experience then their associated trips are also coded as “education”.
- 2.102 If a child is on a school trip which does not involve an overnight stay then as long as they visit something educational (such as a museum or art gallery) then their trip is coded as “education”. However, if there is an overnight stay at a hotel, their trip to the hotel is assigned “holiday base”.
- 2.103 Just because someone is travelling to an educational establishment, their trip purpose will not necessarily be “education”. For example, trips made by teachers to the school or college where they normally work are coded as “work”. Trips to schools or colleges made by people attending meetings (such as PTA meetings) or following leisure pursuits (such as evening classes) are not assigned “education”; instead they are coded as “other personal business” or one of the recreation-related codes (most likely “entertainment/public social activities” or “sport (participate)”.

Escort Education

- 2.104 If a respondent drops off a child or other household member at school, college or university, the purpose of the respondent’s trip is coded as “Escort education”.

Food/Grocery shopping

- 2.105 Shopping is divided into “food/grocery shopping” and “all other types of shopping”. It is not always easy to distinguish between these two sorts of shopping. Where it is not clear, NTS interviewers ask respondents to decide which was the main purpose. Where respondents cannot do this, the purpose is listed as “all other types of shopping”.
- 2.106 “Food/Grocery shopping” is applied to all trips where the main purpose was to buy food or groceries. In addition to shopping at supermarkets or corner shops, this is used when people make a trip in order to buy a take-away meal or go to a ‘pick-your-own fruit’ or vegetables farm.

Non-Food shopping

- 2.107 All trips to shops other than supermarkets and grocery stores are assigned this purpose whether or not anything was bought, and even when respondents were simply window-shopping and had no intention to buy anything on that occasion.
- 2.108 Shopping trips will often consist of three trips (see earlier section entitled “series of calls”). In such cases, if the middle trip is a short walk it should be excluded. There

will be no middle trip when respondents only go to one shop or when all the shops they go to are in a precinct off the public highway. This is to reduce respondent burden and to simplify the data, as the individual shops visited are not of interest.

Personal business: medical

- 2.109 As with shopping, personal business is divided into two categories. The first is “medical personal business” which is used for trips respondents make in order to consult about or receive treatment on their own behalf. It includes trips to the doctor, dentist, optician, chiropodist, hospital, and to donate blood. It also includes trips to the chemist but only where the respondent’s purpose is to collect a prescription for their own use.
- 2.110 Where the purpose of a trip is related to the health of other people, (e.g. collecting someone else’s medicine from the chemist), it is coded as “other personal business”. If the respondent is accompanying someone to a hospital, doctors or other medical practitioners, “Escort shopping/personal business” is instead used.
- 2.111 There are a small number of occasions where respondents might use medical services for non-medical reasons, such as asking a doctor to sign a passport photograph. Such trips are coded as “other personal business”. If it is unclear whether the reason for a trip to a medical establishment was medical or other personal business, it is assigned “medical personal business”.

Other personal business

- 2.112 This applies to visits to services such as hairdressers, launderettes, dry cleaners, betting shops, vets, solicitors, banks, the post office and estate agents.
- 2.113 Attendance at funerals, weddings and general church services should also be assigned “other personal business”, as should visiting friends or relatives at the hospital, viewing a house for sale, or attending a day centre. Travelling to and from an airfield for flying lessons, and trips to a court for the purpose of doing jury service are included in this category.
- 2.114 Trips to the library for the purpose of borrowing or returning books are assigned. However trips to the library solely for the purpose of browsing is counted as “entertainment/public social activities”. However, if it is unclear whether the purpose of a library trip was to browse or borrow/return books, “other personal business” is used.
- 2.115 If a parent takes their child to a child-minder, nursery or playschool, the purpose of the parent’s trip is counted as “escort personal business” because the main reason the parent is making that trip is to escort someone else. (The child’s journey would be coded as “other personal business”).

Escort shopping/personal business

- 2.116 This purpose used when a respondent accompanies someone else who is shopping or conducting some sort of personal business, but where the respondent is not doing any such thing. For example, a mother taking her daughter to a childminder would be coded as “Escort shopping/personal business”, whereas the daughter would be coded as “Other personal business”.
- 2.117 It is worth emphasising here that which respondent is classed as the escort depends on the purpose of their individual trips. For example, if a young girl were to go with her father when he goes shopping and had no reason of her own for being at the shops, she would be classed as the escort. However, if the father were to accompany his daughter when she goes to buy a coat and that were his only reason for being at the shops, he would be classed as the escort. Of course, if he wanted to go food shopping and she went with him because she wanted to buy a coat, his main purpose would be coded as “Food/grocery shopping” and hers as “All other types of shopping”.

Personal business: eat/drink

- 2.118 The eat and drink purposes are used where the following three conditions are all satisfied:
- The main purpose of the trip was to go somewhere specifically to eat or drink
 - The trip was made to a place which sells food or drink
 - The respondent sits down to consume the food or drink
- 2.119 These conditions mean that if a respondent were to make a trip to collect a take-away meal, it is not coded using either of the eat and drink codes. Such a trip would actually be coded as “food/grocery shopping” .
- 2.120 The conditions also mean that the eat and drink codes are not used if a respondent were to go to a place where they may eat or drink, but where the main purpose is something else, such as to dance, meet friends, watch a show, or attend a formal dinner. Such cases are actually classed either as “entertainment/public social activities” or as “other social”.
- 2.121 Finally, the conditions mean that having a picnic or packed lunch whilst on a day trip would not be classed under the eat and drink codes. Such trips are instead classified as “day trip/just walk”.
- 2.122 There are two eat and drink codes so that a distinction can be made between social eating and drinking, and other eating and drinking. “Eat or drink: alone or at work” is used when respondents eat or drink alone, at work or in the course of work.

Eat/Drink with friends

- 2.123 This is used for all trips to somewhere to eat or drink where respondents do not eat or drink alone, are not at work, and are not travelling in the course of work.

- 2.124 If it is unclear whether the respondent was eating alone/at work or for some other occasion, and the meal took place during their lunchtime while they were at work, the code “eat or drink: alone or at work” takes priority. Otherwise, the trip is coded as “eat or drink: all other occasions”.
- 2.125 If it is unclear whether a trip’s purpose should be classified as “eat or drink: all other occasions” or “other social”, “eat or drink: all other occasions” takes priority.

Visit friends/relatives at home

- 2.126 This purpose is used for trips made to visit friends, relatives or acquaintances whether for pleasure or out of social obligation.
- 2.127 If the trip is to a private home for a period of not more than three nights, the trip is coded as “visit friends/relatives at home”. If it is clear that the visit lasted four or more nights, the code “holiday base” is used.
- 2.128 An institution or hospital is counted as a private home only if it is the usual long-term residence of the person being visited.
- 2.129 If it is unclear whether the trip purpose was to visit friends at home or to go with friends to an entertainment/public social activity, “visiting friends/relatives at home” takes priority for coding purposes i.e. we assume that the respondent visited friends at home.

Other social

- 2.130 This is used if the purpose of a trip is to socialise, but where none of the other purpose codes appear more appropriate.

Entertainment/public social activities

- 2.131 This is a wide category which includes all types of entertainment, public social activities and unpaid voluntary work. It includes:
- Going to cinemas, theatres, dances and bingo
 - Visiting art galleries, museums and libraries (browsing)
 - Attending political meetings, trade union meetings etc
 - Taking part in club activities including those connected with voluntary work
 - Attending non-vocational evening classes and keep-fit classes
 - Going to the gym, singing lessons, music lessons
 - Attending an armed forces reserve drill night
- 2.132 It applies to trips whose purpose was to watch sport, but also to trips to take part in indoor sports and games like table tennis, darts and snooker.

- 2.133 If an adult takes part in unpaid work experience, this is coded as “entertainment/public social activities”. Where children do so, it is classified as “education”.
- 2.134 If a respondent gives their trip purpose as being “to go to a meeting” but does not include any further information, and if the trip takes place outside working hours, then we assume it was a public social activity such as voluntary work etc and use “entertainment/public social activities”. If it was during working hours, we assume that it was “in course of work”.

Sport (participate)

- 2.135 This purpose applies to all outdoor sports and some indoor sports. It includes sports which can take place indoors but often take place outdoors, such as tennis and athletics; other sports included are (but not limited to):

- Badminton
- Boxing
- Fishing
- Hunting
- Judo
- Karate
- Refereeing
- Shooting
- Squash
- Swimming
- Weight training
- Wrestling

- 2.136 If a trip involves both watching and participating in sport, then participation takes priority for assigning a purpose.

Holiday base

- 2.137 This purpose is assigned to trips to any holiday base in Great Britain. If a respondent is going to a holiday base outside Great Britain, then this purpose is used for their trip to the ticket control point at which they boarded a plane, boat or international train.
- 2.138 “Holiday base” applies to a stay of at least one night in a hotel, boarding house, caravan or holiday cottage where the overall purpose of the trip is leisure or recreation as opposed to work. This includes staying at a second home or weekend home for leisure purposes.
- 2.139 This is also used for a stay of four nights or more with friends or relatives.
- 2.140 If a respondent is away on holiday and goes on a day trip, then the purpose code of their return journey to their holiday accommodation is coded as “holiday base”.

Day trip/just walk

2.141 This purpose is assigned to trips which have the following characteristics:

- It is for the purpose of pleasure
- It happens happen within a single day (i.e. there should be no overnight stay)
- The journey itself should be pleasurable (e.g. a scenic drive or general sight-seeing)

2.142 Where a trip meets the criteria for “entertainment/public social activities”, that takes precedence over “Day trip/just walk”.

2.143 Because we are using the term “day trip” here to refer to pleasurable journeys with no particular destination, they will often need to be treated as though they are a round trip (see earlier section entitled “round trips”).

2.144 If a respondent stops to have a picnic/packed lunch in the course of a day trip, the purpose of the trip will still be coded as “Day Trip”.

2.145 This purpose is also used when people simply go for a walk. Other activities which should be assigned this trip purpose include:

- Taking a dog for a walk
- Jogging
- Exercising a horse
- Horse riding lessons
- Mucking out horses
- Cycling for pleasure
- Tending an allotment

2.146 If a respondent goes on a boat, train or plane just for the pleasure of doing so, their trip would be excluded from the survey as discussed earlier. However, it would be included if this were how they were travelling to a specific destination for a particular purpose, such as crossing a lake in order to go shopping.

2.147 Walking trips (of the appropriate length) by children on public roads whilst going to play are coded with this purpose.

Other non-escort

2.148 There are very few trips that cannot be classified into one of the purposes listed above, however exceptions include:

- People who are learning to drive
- People taking part in community service

Escort other

2.149 This is used when the respondent escorts someone to any of the activities in the following list:

- Eat or drink: alone or at work
- Eat or drink: all other occasions
- Visit friends/relatives at home
- Other social
- Entertainment/public social activities
- Sport (participate)
- Holiday base
- Day trip/just walk

3. Data structure

Structure of the NTS data extract

- 3.1 Due to the differing data that is collected, there are a number of tables, all of which have their own ID variable. To assist joining between the tables, these ID variables are repeated at lower levels. How each table relates to each other, as well as which part of the survey the data is gathered from, is shown in the chart below.

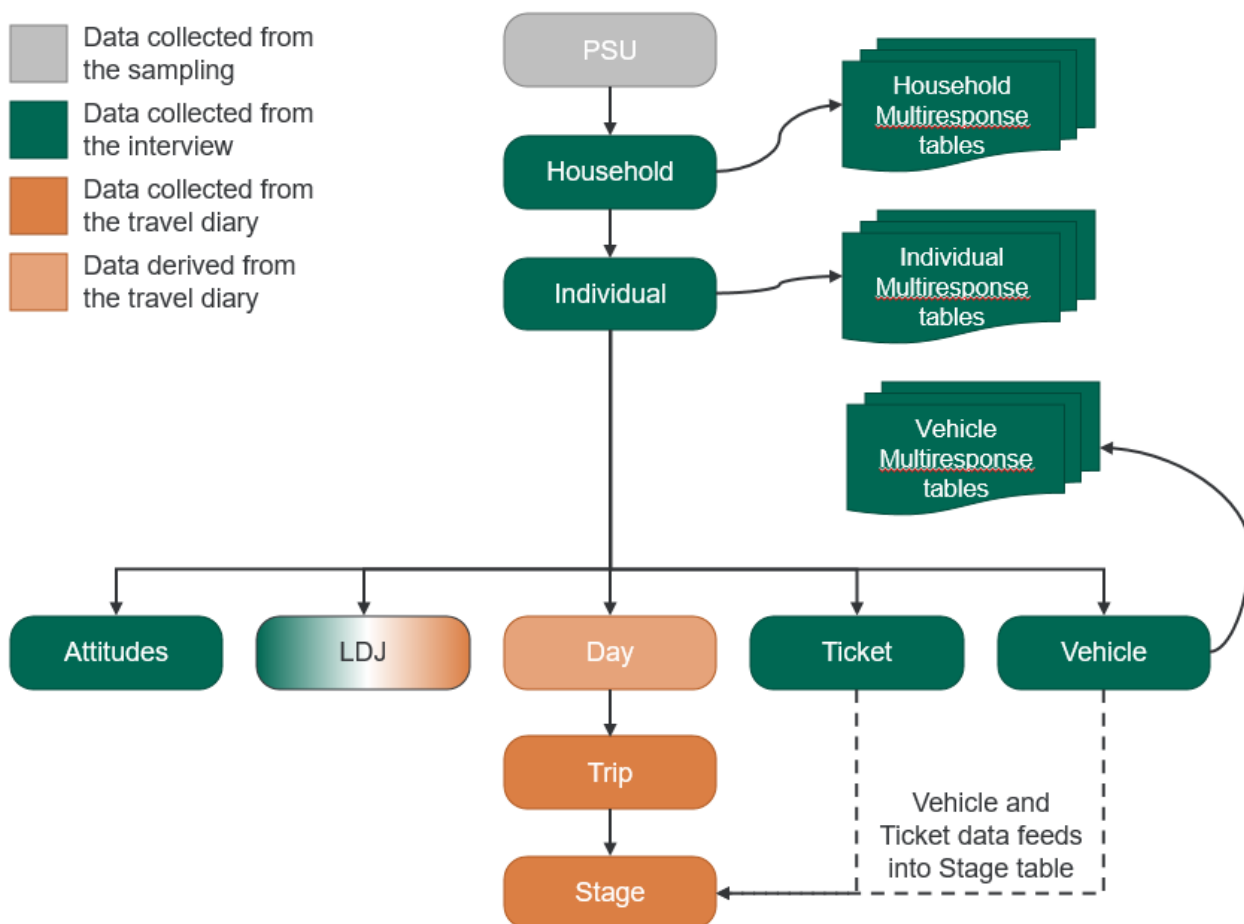


Figure 2 Relation between NTS Data Extract tables

PSU (Primary Sampling Unit)

- 3.2 Data on the postcode area that the household was selected from. This includes selected geographical and ONS Census information. The key ID variable for this table is *PSUID*.

Household

- 3.3 Data on the household itself collected from the household interview, as well as selected geographical and ONS Census information. The key ID variable for this table is *HouseholdID*.
- 3.4 This table also holds the weighting variables for information collected in the interview (variables W0, W1, W2, W3)
- 3.5 The Household table contains the ID variable for the PSU table, PSUID.

Household multiresponse tables

- 3.6 Some questions presented on the household questionnaire allow for multiple responses. To ensure that the main household table has one row per household, these multi-response questions are each given their own table.
- 3.7 All of these tables contain the ID variable for the PSU table, PSUID

Individual

- 3.8 Data on the individuals within the household, gathered from the individual interview . The key ID variable for this table is *IndividualID*.
- 3.9 Some questions asked in the interview about the individual allowed for multiple responses. All answers given are in the Individual table, and the chapter on “Analysing the NTS Data Extract” will go into more detail about how these are stored within this table.
- 3.10 The Individual table contains the ID variables for the household that the individual belongs to (HouseholdID), as well as the PSU for that household (PSUID)

Individual multiresponse tables

- 3.11 Some questions presented on the individual questionnaire allow for multiple responses. To ensure that the main individual table has one row per individual, these multi-response questions are each given their own table.
- 3.12 All of these tables contain the ID variables for the household that the individual belongs to (HouseholdID), as well as the PSU for that household (PSUID)

Attitudes

- 3.13 An individual from the household is selected at random to complete an additional short set of attitudinal questions via self-completion (entering their answers directly into the laptop, as opposed to responding to the interviewer). The responses are stored in their own table. Due to the slight change in method, these questions have their own associated weighting variable (W6).

- 3.14 The key ID variable for this table is *AttitudesID*.
- 3.15 The attitudes table contains the IndividualID of the person who completed these extra questions, the HouseholdID for the household they belong to, and the PSUID for where the household sits.

LDJ (Long Distance Journeys)

- 3.16 This table contains information on any trips with a distance of 50 miles or more. There are two sources to this:
- 3.17 **Interview:** Respondents are asked in their individual interview for the details of all journeys of 50 miles or more, in the week prior to their travel diary. This is intended to increase the sample size of these uncommon journeys.
- 3.18 **Diary:** Data from the travel diary of journeys which have a distance of 50 miles or more are duplicated in this table.
- 3.19 Because of this approach, Long Distance Journeys (LDJ) in this table have data from both the Interview sample and the Diary sample, and as such this table has its own weighting variable (variable W4). If you are using this table to analyse long distance journeys, as opposed to taking data from just the trip/stage table, then please use W4 to weight your calculations, as opposed to W5.
- 3.20 The key ID variable for this table is *LDJID*.
- 3.21 This table contains the IndividualID of the person who made the trip, the HouseholdID for the household they belong to, and the PSUID of where the household is geographically. If the long distance journey relates to a trip in the travel diary, a TripID is also provided, but if this is from the interview questionnaire then this will be blank.

Vehicle

- 3.22 Data on the vehicles that are owned by the household is stored in this table. Where the main driver is identified, their IndividualID is given. The key ID variable for this table is *VehicleID*.
- 3.23 This table contains the HouseholdID where the car is used, and PSUID of where the household lies geographically. If the vehicle has a main driver, the IndividualID is provided, and will be blank otherwise.

Vehicle multiresponse tables

- 3.24 Some questions presented on the vehicle questionnaire allow for multiple responses. To ensure that the main vehicle table has one row per vehicle, these multi-response questions are each given their own table.

3.25 All of these tables contain the HouseholdID where the car is used, and PSUID of where the household lies geographically. If the vehicle has a main driver, the IndividualID is provided, and will be blank otherwise.

Ticket

3.26 Data on the tickets being used by the individual, including concessionary travel, employee discount tickets, junior railcards etc. are stored in this table. Multiple cards can be recorded for each individual. The key ID variable for this table is *IndTicketID*.

3.27 The IndividualID of the person who owns the ticket is given, as well as the HouseholdID of the household they belong to, and the PSUID where the household sits geographically.

Day

3.28 For each household, their seven-day travel diaries all begin on different days. The Day table contains information on the travel diary days for everyone in the diary sample, such as what actual day, week and month of that day on the travel diary. This is recorded in the Day table even if no trips were taken by an individual on that day of the diary.

3.29 The Day table is best used you want to analyse using measures such as specific months or days of the week, this is where you will find that information.

3.30 The key ID variable for this table is *DayID*.

3.31 Every row in this table is one day in an individual's travel diary. As such, all rows have the IndividualID of the person, the HouseholdID of the household they belong to, and the PSUID where the household lies geographically.

Trip

3.32 Each trip recorded in the travel diary is recorded in this table. This includes all information pertaining to the trip such as purpose, mode, origin and destination. This does not include information on the vehicles or tickets used, this can be found in the Stage table.

3.33 This table also contains the weighting variable for trips/stages, i.e. for the data collected in the travel diary (variable W5).

3.34 The key ID variable for this table is *TripID*.

3.35 This table contains the IndividualID of the person making the trip, the DayID for the day on their travel diary, the HouseholdID of the household they belong to, and the PSUID for where the household sits geographically.

Stage

- 3.36 Each trip is composed of a number of individual stages. Each of the stages making up the trip are stored in this table, with the TripID variable given saying what trip this stage is a part of.
- 3.37 If a ticket or household vehicle was used as part of this stage, the relevant ID variable (IndTicketID, VehicleID) is provided here.
- 3.38 The key ID variable for this table is *StageID*.
- 3.39 This table contains the TripID of the trip that this stage is a part of, the IndividualID of the person making the trip, the DayID for the day on their travel diary, the HouseholdID of the household they belong to, and the PSUID for where the household sits geographically. If the person used a ticket, the IndTicketID of that ticket is given, and is blank otherwise.

Linking NTS tables using ID variables

To link tables together, you simply need to perform a join (in whatever software you use) on the ID variable of the higher table.

- 3.40 Here is an example joining the Individual and Stage tables. Here the individual table is above the stage table (think of this as one individual can have multiple stages, but one stage cannot have multiple individuals), and so we join using the ID variable of the higher table: IndividualID

Individual.IndividualID = Stage.IndividualID

- 3.41 Please also remember to consider which ID variable you reference first: for some software, if you are making a LEFT join you will need to reference this variable first. Please consult the help files for your software if you get unexpected results when linking NTS tables.

NTS weighting

- 3.42 The National Travel Survey is a weighted survey. Once fieldwork concludes, the data is passed through statistical methods to aggregate the totals to be representative of England as a whole (the detailed method can be found in the NTS Technical Report, [published with the most recent release](#)).
- 3.43 As an example, if a simple survey was asked of a sample of people in a population where men and women are in an exact 50:50 proportion, but the survey data had a balance of 30:70 men:women, then this means that men have been under-sampled and women over-sampled. To correct for this in the final data, men would have a higher weight value, and women a lower weight value, so that when you look at the sample as whole, the weighted totals match what is seen in the population.
- 3.44 This is what happens with the NTS, where weightings are used so that the total of the entire sample are close to what is expected to be seen with England as a whole. This

does however mean that the weightings might not be appropriate if you are taking very small geographical subsets. Please exercise caution when reporting on a geographical breakdown smaller than Country, and please caveat this fact when you report your final figures.

- 3.45 The weighting also takes account of the method of the survey, and as such there are different weights used for data obtained from the Interview, and data obtained from the Travel Diary. There are also further weights for the Long Distance Journey (LDJ) data table due to this being a combination of the two, and for the Attitudes table (as this is self-completed as opposed to being recorded by the interviewer).
- 3.46 Weights which apply to the travel diary also take account of the drop-off effect, where fewer trips are recorded in later days compared to the first.
- 3.47 Here are the weights used within the NTS dataset, as well as the table where they can be found. The top section are the most used weights, and the second section weights which are only applicable when using certain tables.

Variable ID	Description	Stored in this table	Sample
W0	Unweighted interview sample	Household	Interview
W3	Interview sample household weight	Household	Interview
W1	Unweighted diary sample	Household	Diary
W2	Diary sample household weight	Household	Diary
W5	Trip/Stage weight	Trip	Diary
W4	LDJ weight	LDJ	Both Interview and Diary (see below)
W6	Attitudes weight	Attitudes	Interview (self-completion subset)

Table 6 NTS weightings, what sample they relate to, and what table they are stored in

W0 – Unweighted Interview Sample

- 3.48 As every individual who is recorded in the data has completed an interview, this is always 1. Therefore, the W0 weight is used to calculate the unweighted sample size when using the interview sample.

W1 – Unweighted Diary Sample

- 3.49 The diary sample only includes fully-productive households, so any partially-productive households have a W1 of zero. In contrast all fully-productive households have a W1 of one. In this way, the W1 weight is used to calculate the unweighted sample size when using the diary sample.

W2 – Diary sample Household weight

- 3.50 This weight is for measures on the household or individual table when using the diary sample (only fully-productive households).
- 3.51 For example, determining the number of individuals who made certain trips, you will want to use W2 to count the weighted number of individuals.

W3 – Interview sample Household weight

- 3.52 This weight is for measures on the household or individual table when using the interview sample (both fully- and partially-productive households, and no calculations being done using data in the Trip, Stage or LDJ tables).
- 3.53 For example, calculating the percentage of individuals by educational attainment (stored on the individual table) would require you to use weight W3.

W5 – Trip/Stage weight

- 3.54 This weight is used on the trips that are recorded on the travel diary. This weight also accounts for the household of the individual that made the trip, so there is no need to multiply weights together. This is to be used when performing calculations or counting trips and stages. As such it will only ever be used for the diary sample and is found on the Trip table.

Other weights

- 3.55 There are two special weights, only used with regards their own tables. More detail on how these weight have been calculated can be found in the NTS Technical Report, which is [published with the most recent release](#).

W4 – LDJ weight

- 3.56 This weight is used for the data stored within the Long-Distance Journey (LDJ) table only. As this table contains information from both the interview and the travel diaries (as explained above in more detail), it is not appropriate to use the Trip weight (W5) when performing calculations on this table. It has its own weight (W4) which accounts for the fact that data has come from two different sources.

W6 – Attitudes weight

- 3.57 This weight is used for the attitude questions that one individual at random in the household is asked. As these are completed via a different method, namely individuals entering their responses to questions directly into the laptop for anonymity, the standard interview sample weight (W2) is not appropriate, and so a new weight has been calculated (W6) which takes this mode change into account.

Key trip/stage measures

- 3.58 As explained in earlier sections, the National Travel Survey is a complicated survey. Because of its peculiarities it would be easy to forget effects such as short walks only being collected on one day, and some trips being series of calls (and thus zero-weighted). To aid analysis, a series of measures have been created which account for these two main effects, meaning that you only need to call these new measures rather than having to spend time carefully filtering cases.

3.59 These key measures for each table are given below, as well as the method of how they were constructed in case this is useful for your specific analysis:

Stage table key measures

Variable	Description
SSXSC	The number of stages to be counted, grossed for short walks and excluding "Series of Calls" trips.
SD	The distance of the stage (miles), grossed for short walks.
STTXSC	The total travelling time of the stage (in minutes), grossed for short walks and excluding "Series of Calls" trips.

Table 7 Key measures on the Stage table

SSxSC (Number of stages, excluding series of calls)

Situation	Construction
If stage is a "series of calls"	SSXSC = 0
If stage is not a "series of calls", and is a "short walk" stage (Walking stage, diary day 1)	SSXSC = 7
If stage is not a "series of calls", and is also not a "short walk" stage (Walking stage, diary days 2 to 7)	SSXSC = 1

Table 8 Construction of the variable SSxSC

SD (Stage distance in miles)

Situation	Construction
If stage is a "short walk" stage (Walking stage, diary day 1)	SD = 7 * StageDistance
If stage is not a "short walk" stage (Walking stage, diary days 2 to 7)	SD = 1 * StageDistance

Table 9 Construction of the variable SD

STTxSC (Stage total time in minutes, excluding series of calls)

Situation	Construction
If stage is a "series of calls"	STTXSC = 0 * StageTime
If stage is not a "series of calls", and is a "short walk" stage (Walking stage, diary day 1)	STTXSC = 7 * StageTime
If stage is not a "series of calls", and is also not a "short walk" stage (Walking stage, diary days 2 to 7)	STTXSC = 1 * StageTime

Table 10 Construction of the variable STTxSC

Trip table key measures

Variable	Description
JJXSC	The number of trips to be counted, grossed for short walks and excluding "Series of Calls" trips.
JD	The distance of the trip (miles), grossed for short walks.
JTTXSC	The total travelling time of the trip (in minutes), grossed for short walks and excluding "Series of Calls" trips.
JOTXSC	The overall duration of the trip (in minutes), meaning that it includes both the travelling and waiting times between stages, grossed for short walks and excluding "Series of Calls" trips.

Table 11 Key measures on the Stage table

JJxSC (Number of trips, excluding series of calls)

Situation	Construction
If trip is a "series of calls"	SSXSC = 0
If trip is not a "series of calls", and is a "short walk" trip (Walking trip, diary day 1)	SSXSC = 7
If trip is not a "series of calls", and is also not a "short walk" trip (Walking trip, diary days 2 to 7)	SSXSC = 1

Table 12 Construction of the variable JJxSC

JD (Trip distance in miles)

Situation	Construction
All cases	$JD = \text{SUM}(SD)$ <i>(sum up all the individual stage distances using the key measure SD)</i>

Table 13 Construction of the variable JD

JTTxSC (Total trip travelling time in minutes, excluding series of calls)

Situation	Construction
If trip is a "series of calls"	$JTTXSC = 0 * \text{TripTravTime}$
If trip is not a "series of calls", and is a "short walk" trip (Walking trip, diary day 1)	$JTTXSC = 7 * \text{TripTravTime}$
If trip is not a "series of calls", and is also not a "short walk" trip (Walking trip, diary days 2 to 7)	$JTTXSC = 1 * \text{TripTravTime}$

Table 14 Construction of the variable JTTxSC

JOTxSC (Overall trip time (both travel time, and waiting time between stages) in minutes, excluding series of calls)

Situation	Construction
If trip is a "series of calls"	$JOTXSC = 0 * \text{TripTotalTime}$
If trip is not a "series of calls", and is a "short walk" trip (Walking trip, diary day 1)	$JOTXSC = 7 * \text{TripTotalTime}$
If trip is not a "series of calls", and is also not a "short walk" trip (Walking trip, diary days 2 to 7)	$JOTXSC = 1 * \text{TripTotalTime}$

Table 15 Construction of the variable JOTxSC

Household income variables

3.60 Household income is included with the Household table in two groups:

3.61 First, if you want to see household income in terms of bands such as "between £30,000 and £39,999" then the variable you want is HHIncome2002_B01ID (which has 23 categories but is only available in Secure or Special licence levels) or HHIncome2002_B02ID (which has 3 categories, available for all).

3.62 Secondly, if you want to see quintiles (households classified into five groups based upon household income) or semi-deciles (twenty groups), you will see there are a lot of variables which are specific to individual years (such as

HHIncQIS2006Eng_B01ID, or the household income quintiles of the interview sample, for English households, in 2006). There are also time series variables which aggregate all of these years together, and we advise you use these in the first instance.

Variable	Households	Sample	Type	Licence available
HHIncQDSEngTS_B01ID	England	Diary	Quintile	All
HHIncQISEngTS_B01ID	England	Interview	Quintile	All
HHIncSDDSEngTS_B01ID	England	Diary	Semi-Decile	Special, Secure
HHIncSDISEngTS_B01ID	England	Interview	Semi-Decile	Special, Secure
HHIncQDSTS_B01ID	Great Britain (2002-2012)	Diary	Quintile	All
HHIncQISTSTS_B01ID	Great Britain (2002-2012)	Interview	Quintile	All
HHIncSDDSTS_B01ID	Great Britain (2002-2012)	Diary	Semi-Decile	Special, Secure
HHIncSDISTSTS_B01ID	Great Britain (2002-2012)	Interview	Semi-Decile	Special, Secure

Table 16 Household income time series variables

4. Using NTS Lookup tables

4.1 Lookup tables are provided with all data extracts, specific to the licence level.

4.2 There are two tables provided in all instances:

NTS Lookup Table

4.3 The first worksheet of this table contains information on the variables present in the main database tables, including what years the variable is present for and any notes around changes.

	A	B	C	D	E	F	G	H	I	J	K
1	Table	Variable	Data Type	Description	2002	2003	2004	2005	2006	2007	2008
2	PSU	PSUID	int	PSU unique ID - Created in SQL	1	1	1	1	1	1	1
3	PSU	SurveyYear	int	Survey Year - actual year	1	1	1	1	1	1	1
4	PSU	SurveyYear_B01ID	int	Survey Year - coded year	1	1	1	1	1	1	1
5	PSU	PSUGOR_B02ID	int	PSU Region	1	1	1	1	1	1	1
6	PSU	PSUStatsReg_B01ID	int	Statistical Region - regional / Metropolitan area breakdown	1	1	1	1	1	1	1
7	PSU	PSUCountry_B01ID	int	PSU Country	1	1	1	1	1	1	1
8	Household	HouseholdID	int	Household unique ID - Created in SQL	1	1	1	1	1	1	1
9	Household	PSUID	int	PSU unique ID - Created in SQL	1	1	1	1	1	1	1
10	Household	TWSDay	int	Travel Week Start - Day of Month	1	1	1	1	1	1	1
11	Household	TWSMonth	int	Travel Week Start - Month - actual month	1	1	1	1	1	1	1
12	Household	TWSMonth_B01ID	int	Travel Week Start - Month - coded month	1	1	1	1	1	1	1
13	Household	TWSYear	int	Travel Week Start - Year	1	1	1	1	1	1	1
14	Household	TWSDate	datetime	Travel Week Start - Date travel week commences	1	1	1	1	1	1	1
15	Household	TWSWeek	int	Travel Week Start - Week number in calendar year	1	1	1	1	1	1	1
16	Household	TWSWeekday_B01ID	int	Travel Week Start - Weekday travel week commences on	1	1	1	1	1	1	1
17	Household	TWEDay	int	Travel Week End - Day of Month	1	1	1	1	1	1	1

Figure 3 NTS Lookup Table – Main Table Variables worksheet

4.4 The second worksheet of this table contains information on the multi-response tables, such as what base table this relates to (Household, Individual or Vehicle) and again what years the table is available.

	A	B	C	D	E	F	G	H	I	J	K
1	Base Table	Table Name	Variable	Description	2002	2003	2004	2005	2006	2007	2008
2	Household	Order	Order_B01ID	Types of goods ordered by phone, post or internet	1	1	1	0	0	0	1
3	Household	LastD	LastD_B01ID	Goods in last delivery	1	1	1	0	0	0	1
4	Household	WhoShop	WhoShop_B01ID	Who does main food shopping	1	1	1	1	1	1	1
5	Household	YNoShop	YNoShop_B01ID	Reasons for no main food shopping	1	1	1	1	1	1	1
6	Household	WhoBlu	WhoBlu_B01ID	Who in household has a blue badge	0	0	0	0	0	0	1
7	Household	LastDN	LastDN_B01ID	Goods in last delivery	0	0	0	0	0	0	0
8	Household	OrderN	OrderN_B01ID	Types of goods ordered by phone, post or internet	0	0	0	0	0	0	0
9	Household	AnyComAN	AnyComAN_B01ID	Comments on general travel issues	0	0	0	0	0	0	0
10	Household	TrShFo	TrShFo_B01ID	Reasons the main food shopper walks when doing the food shopping	0	0	0	0	0	0	0
11	Household	TrShBi	TrShBi_B01ID	Reasons the main food shopper cycles when doing the food shopping	0	0	0	0	0	0	0
12	Household	OrderA	OrderA_B01ID	Whether order over phone, by post or on internet nowadays	0	0	0	0	0	0	0
13	Vehicle	SatNav3	SatNav3_B01ID	Whether vehicle has Sat Nav	0	0	0	0	0	0	0
14	Individual	CarS	CarS_B01ID	Difficulties with using car for main food shopping trips	1	1	1	1	1	1	1
15	Individual	CarM	CarM_B01ID	Difficulties with using car for journeys to work	1	1	1	1	1	1	1

Figure 4 NTS Lookup table – Multicoded Tables worksheet

NTS Lookup Table – Response Levels

4.5 This table contains the individual response level codings for all variables in one worksheet, including all of the multicoded response levels.

	A	B	C	D	E	F	G
1	Table	Variable	Description	ID	Desc	Order	Part
288	Household	BusRail_B01ID	Bus time from household to railway station -	1	No bus / quicker to walk	1	1
289	Household	BusRail_B01ID	Bus time from household to railway station -	2	6 mins or less	2	1
290	Household	BusRail_B01ID	Bus time from household to railway station -	3	7-13 mins	3	1
291	Household	BusRail_B01ID	Bus time from household to railway station -	4	14-26 mins	4	1
292	Household	BusRail_B01ID	Bus time from household to railway station -	5	27-43 mins	5	1
293	Household	BusRail_B01ID	Bus time from household to railway station -	6	44 mins +	6	1
294	Household	BusRail_B01ID	Bus time from household to railway station -	-8	Don't know / NA	7	2
295	Household	BusRail_B01ID	Bus time from household to railway station -	-9	DNA	8	2
296	Household	BusRail_B01ID	Bus time from household to railway station -	-10	DEAD	9	2
297	Household	DescTa_B01ID	Frequency of rail service at nearest railway station -	1	Freq service all day	1	1
298	Household	DescTa_B01ID	Frequency of rail service at nearest railway station -	2	Freq service rush hour only	2	1

Figure 5 NTS Lookup Table – Response Levels Workbook

- 4.6 “ID” is the code that is presented in the data files. This includes the “missing values” (paragraph 2.19) such as -8 (Not applicable), -9 (Did not answer).
- 4.7 “Desc” is the description for the particular ID variables
- 4.8 “Order” is a helpful variable to present the various response levels in a consistent ordering, for you to use if you wish
- 4.9 “Part” is something that will let you distinguish between missing values (Part = 2) and substantive responses (Part = 1).

5. Analysing the NTS data extract

- 5.1 In this section we will present examples of how the NTS data extracts can be analysed showing good practice, as well as highlighting common errors.
- 5.2 The examples will be given using T-SQL, which is the standard analytical language used within the Department for Transport, as well as being simple to read as if it were “pseudocode”. In all cases, the logic of the code will be explained to assist you writing the equivalent in your own statistical software.
- 5.3 The examples assume you have the extract tables stored in the same database.

Example 1: Total trips, by mode

- 5.4 In this example, we will calculate the total number of trips recorded by mode, with no other criteria.
- 5.5 This will need information from the TRIP table, and so we are using the DIARY sample (those who completed the travel diary: please see 1.16 for more information), meaning that the weight for the number of trips will be W5 (Table 6). We will use the key measure JJXSC to count the number of trips (Table 12).
- 5.6 The SQL code for this query is:

```
SELECT MainMode_B04ID,
       SUM(JJXSC) 'Unweighted Trips',
       SUM(JJXSC * W5) 'Weighted Trips'
FROM Data.Trip
GROUP BY MainMode_B04ID
```

- 5.7 JJXSC is the number of trips, accounting for short walk days (see para 2.25) and series of calls (see para 2.14), so summing with `SUM(JJXSC)` is adding up all the trips without any weighting. To add the weighting, we use `SUM(JJXSC * W5)` which applies the W5 weight to all the trips.
- 5.8 The most commonly used Main Mode (see para 2.23) variable is MainMode_B04ID. This is used on our published table NTS0303. Other MainMode variables might have splits that better meet your own requirements.
- 5.9 This query returns just the trips recorded in the travel diary, and not with reference to any metric. In our published tables we instead commonly refer to another metric such as “Trips per person” and “Trip Distance (Miles per Trip)”.

Example 2: Trips per person year, 2019, by trip purpose

- 5.10 In this example we will calculate the average trips per person per year, for the survey year of 2019, by trip purpose.
- 5.11 Once again this takes information from the TRIP table, and will again use JJXSC as the key measure, and W5 as the trip weight.

- 5.12 We will need to join onto the INDIVIDUAL table, so that we can match trips to the individuals. Individuals share the same weight as their household, and consulting table 6 we can see that the correct household weights for the diary sample are W1 (unweighted) and W2 (weighted). We thus need to join onto the HOUSEHOLD table to be able to access these weights.
- 5.13 We also need to join onto the PSU table, as this contains the SurveyYear variable, which we will filter to 2019. An alternative to this that you might consider is to take the first four digits of the relevant ID variable, which are always the survey year.
- 5.14 This query requires three parts: One query for the trips (per trip purpose, per year), one query for the individuals (per year), and one query to join these two together into the final table. The example will use “temporary tables” which in T-SQL uses the # prefix. Please use the appropriate method for your statistical software, such as saving the first two outputs as their own tables. This is a general approach when analysing NTS data: form different tables for each part of the query, and then combine together at the end.
- 5.15 The SQL code for this example is:

```
-- Make the trip temporary table
SELECT SurveyYear,
       TripPurpose_B02ID,
       SUM(JJXSC) 'Unweighted_Trips',
       SUM(JJXSC * W5) 'Weighted_Trips'
INTO #TripTemporaryTable
FROM Data.Trip as T
      LEFT JOIN Data.PSU P
            ON T.PSUID = P.PSUID
WHERE SurveyYear = 2019
GROUP BY SurveyYear, TripPurpose_B02ID

-- Make the individual temporary table
SELECT SurveyYear,
       SUM(W1) 'Unweighted_Individuals',
       SUM(W2) 'Weighted_Individuals'
INTO #IndividualTemporaryTable
FROM Data.Individual I
      LEFT JOIN Data.PSU P
            ON I.PSUID = P.PSUID
      LEFT JOIN Data.Household H
            ON I.HouseholdID = H.HouseholdID
WHERE SurveyYear = 2019
GROUP BY SurveyYear

-- Bring the two together to finish the query
SELECT T1.SurveyYear,
       T1.TripPurpose_B02ID,
       52.14*Weighted_Trips/Weighted_Individuals 'Trips per person per year',
       Unweighted_Trips,
       Unweighted_Individuals
FROM #TripTemporaryTable T1
      LEFT JOIN #IndividualTemporaryTable T2
            ON T1.SurveyYear = T2.SurveyYear
```

- 5.16 The first few rows of the data is the following, to allow you to check your results. You will find that the “Trips per person per year” value matches that in the published table NTS0403, which can be found [online here](#).

SurveyYear	TripPurpose_B02ID	Trips per person per year	Unweighted_Trips	Unweighted_Individuals
2019	1	140.084768	34549	14356
2019	2	27.963473	7393	14356
2019	3	67.694412	17277	14356
2019	4	57.541428	15209	14356
2019	5	180.601037	45136	14356

5.17 As the travel diary is for seven days, if we had just taken “Weighted_Trips/Weighted_Individuals” this would give us “Trips per person per week”. To scale this up to a year, we multiply by 52.14.

5.18 If you instead wanted to calculate trips for different time periods, you can use the following multipliers:

- Trips per person per week: 1 (the travel diary is a week long)
- Trip per person per day: $52.14/365.25 = 0.1428$
- Trip per person per month: you can either calculate for each month (join onto the Day table and use the variable [TravelMonth] to get the exact amount considering the number of days differing, or you can take an average using $52.14/12 = 4.345$.

Example 3: Average stage distance and time by mode, by age and sex of individual

5.19 In this example we will determine the average stage length and the average stage time, by mode used, and by the age and sex of the person who travelled.

5.20 This time we are taking data from the STAGE table. This is also derived from the diary. We no longer use JJXSC but instead SSXSC. This allows us to count the number of stages whilst accounting for short walk days and series of calls.

5.21 To count stage distance, we again consult “Key Trip/Stage Measures” from paragraph 3.58 onwards and observe that SD will count this. Similarly, STTXSC will count the time spent travelling on that stage. Both will need to be weighted by multiplying by W5.

5.22 Stages still use the Trip weight W5.

5.23 The SQL code for this analysis is in two parts. Firstly we pull the stage information including all the distances and times, grouped by age, sex and mode, and then in the second part the averages are calculated. Whilst it might seem like this could be done in one query, it is often easier to do in two parts setting up the temporary tables with each core part, and then bringing them together. This is also easier for someone else to understand if you are getting someone to quality assure your work.

5.24 The SQL code is below:

```
SELECT SurveyYear,
       StageMode_B06ID,
       Age_B06ID,
       Sex_B01ID,
       SUM(SSXSC) 'Stages_unweighted',
       SUM(SSXSC * W5) 'Stages_weighted',
       SUM(SD * W5) 'StageDistance_weighted',
       SUM(STTXSC * W5) 'StageTime_weighted'
INTO #StageTempTable
FROM Data.Stage S
     LEFT JOIN Data.PSU P
         ON S.PSUID = P.PSUID
     LEFT JOIN Data.Trip T
         ON S.TripID = T.TripID
     LEFT JOIN Data.Individual I
         ON S.IndividualID = I.IndividualID
WHERE SurveyYear = 2019
GROUP BY SurveyYear,
         StageMode_B06ID,
         Age_B06ID,
         Sex_B01ID

SELECT SurveyYear,
       StageMode_B06ID,
       Age_B06ID,
       Sex_B01ID,
       [StageDistance_weighted]/[Stages_weighted] 'AvgStageDistance',
       [StageTime_weighted]/[Stages_weighted] 'AvgStageTime'
FROM #StageTempTable
```

SurveyYear	StageMode_B06ID	Age_B06ID	Sex_B01ID	AvgStageDistance	AvgStageTime
2019	3	2	2	7.322395	19.515581
2019	3	3	1	8.988885	21.392336
2019	4	2	2	10.850154	24.0171
2019	4	3	1	9.969256	23.503609
2019	6	1	2	4.356604	28.833361

Example 4 - Proportion of respondents that have made an international flight between 2015 and 2019, by English region and household income quintile

5.25 This example uses a question from the individual interview, and as such we are no longer using the diary sample, but the INTERVIEW sample.

5.26 The relevant variable is IntPlane_B01ID on the INDIVIDUAL table. As we are using the interview sample, our weights (see table 6) are W0 (unweighted) and W3 (weighted).

5.27 Please consult table 16 to select an appropriate household time series variable. We will use HHIncQISEngTS_B01ID because we want quintiles for the interview sample.

5.28 In this instance we are not having to combine variables together as in the previous examples (e.g. having to further calculate trips per person per year). We can therefore do this query in a single statement.

5.29 The SQL code for this is below:

```
SELECT IntPlane_B01ID,
       HHoldGOR_B02ID,
       HHIncQISEngTS_B01ID,
       SUM(W0) 'Individuals_unweighted',
       SUM(W3) 'Individuals_weighted'
FROM Data.Individual I
     LEFT JOIN Data.PSU P
           ON I.PSUID = P.PSUID
     LEFT JOIN Data.Household H
           ON I.HouseholdID = H.HouseholdID
WHERE SurveyYear >= 2015 AND SurveyYear <= 2019
     AND IntPlane_B01ID >=0
GROUP BY IntPlane_B01ID,
         HHoldGOR_B02ID,
         HHIncQISEngTS_B01ID
ORDER BY IntPlane_B01ID,
         HHoldGOR_B02ID,
         HHIncQISEngTS_B01ID
```

IntPlane_B01ID	HHoldGOR_B02ID	HHIncQISEngTS_B01ID	Individuals_unweighted	Individuals_weighted
0	1	1	816	771.2226087
0	1	2	615	571.0238834
0	1	3	394	370.6067052
0	1	4	336	316.5612989
0	1	5	233	211.8055607

5.30 In the above code, the selection of years was given by `WHERE SurveyYear >= 2015 AND SurveyYear <= 2019`. This could also have been achieved with the use of `WHERE SurveyYear in (2015,2016,2017,2018,2019)`.

The code above also removed the “missing values” which are present in all variables (see paragraph 2.19) by `WHERE ... AND IntPlane_B01ID >=0`. It is generally best to retain all values so that you can see how many people either did not see the question due to survey routing, or did not answer, but in some situations you may wish to remove these at the query stage.

5.31 Furthermore, in this example we used `ORDER BY` to order the data. Please consult the help files of your statistical software to find the equivalent.