Department for Transport

Journey Time Statistics 2015 (Revised)

Revisions: This release was originally published on 27 April 2017. It was withdrawn due to missing rail data in the public transport network which is used in the journey times model and has now been republished with minor revisions. The revisions affect a small number of journey times using the public transport/walk mode. In the majority of cases the quickest journey is made by walking or taking the bus, and therefore will be unaffected by changes to rail data.

Across a range of 8 key local services in England, the average minimum journey times to access the services from where people live were 17 minutes by public transport/walking, 15 minutes by cycle, and 10 minutes by car.

About this release

This Statistical Release presents estimates of travel times from where people live to key local services for England for 2015.

Statistics are published at national, regional, local authority and small area (Lower Super Output Area) level, for 8 key local services and three modes of transport.

This is the second release in the new Journey Time Statistics series. This edition applies the new methods to connectivity analysis for the first time.

In this publication

Average minimum travel times to key services:

Public transport / walking   **17** minutes

Cycle   **15** minutes

Car   **10** minutes

The average minimum travel times across the range of 8 key services by public transport/ walking were 15 minutes for urban areas and 29 minutes for rural areas.
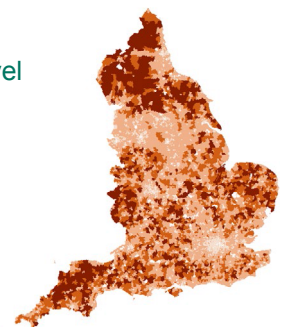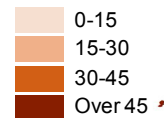
The key services are:

centres of employment

primary schools

secondary schools

further education colleges

GPs

hospitals

foodstores

town centres

Average minimum travel time for 8 key local services (minutes)

- 0-15
- 15-30
- 30-45
- Over 45

About 22% of people in England lived within an hour of a major airport by public transport, and 63% within an hour by car. For major rail stations, about 70% of people lived within an hour by public transport, and 91% within an hour by car.

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Minimum journey times - the national picture

For England as a whole in 2015, the average minimum travel time across eight key services was 17 minutes by public transport / walking, 15 minutes by cycle and 10 minutes by car.

Average travel time to reach nearest key services, England, 2015
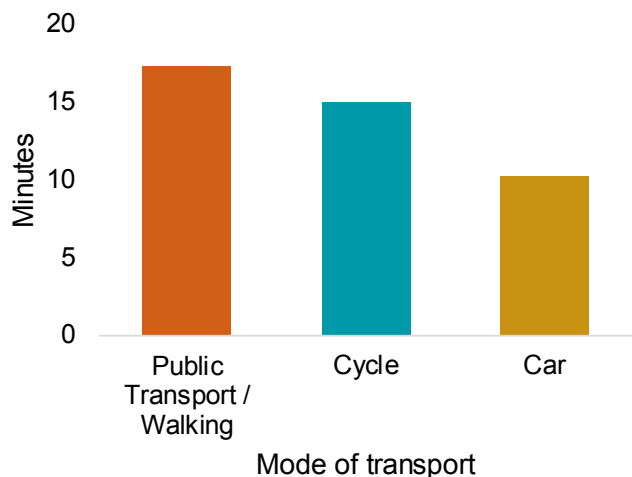
The average minimum travel time to the nearest service by public transport/walking was lowest for primary schools and food stores (9 minutes) and highest for hospitals (39 minutes). The pattern for travel by bicycle was similar, but with slightly less variation, from 9 minutes for primary schools and food stores to 35 minutes for hospitals. For cars there was even less variation, from 7-8 minutes for food stores and primary schools to 19 minutes for hospitals.

The main reasons for the differences in travel times between the service types are the number of locations at which the services are available, how these are distributed throughout England, and how these locations relate to where people live.

Average travel time to reach nearest key services, England, 2015
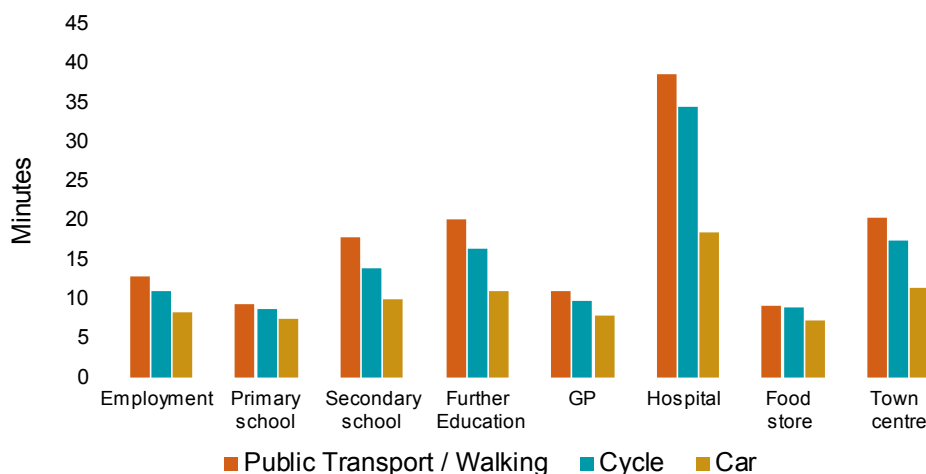
Minimum journey times

The average minimum travel time is the shortest travel times to a given type of service by a particular mode of transport, averaged over a given area.

For cycle and car modes the minimum journey time will always be at least 5 minutes, because 5 minutes is added to the actual travelling time to make some allowance for parking times.

For public transport / walking journeys, 5 minutes is added to those journeys where a public transport service is used, to allow a margin for catching the service, but if a quicker walking journey is available this will be used, with nothing added.

Data tables

Travel time tables:

JTS0101 to JTS0104

Key services

The 8 key services for which average travel times are sometimes quoted are those shown in the chart to the left.

The data tables include results for employment centres of 3 different sizes - that used in the key services average is the medium one (500-4,999 jobs).

Urban and rural patterns

Average minimum access times were higher for users in rural areas compared with urban areas. In 2015 the average travel times to the range of 8 key services by public transport were 15 minutes for urban areas and 29 minutes across all rural areas.

There was also a marked difference between urban and rural access times by bicycle (13 and 26 minutes respectively), but less so for cars (10 and 13 minutes).

Average minimum travel times to a range of key services, urban and rural areas, England, 2015


Legend: Public Transport / Walking, Cycle, Car
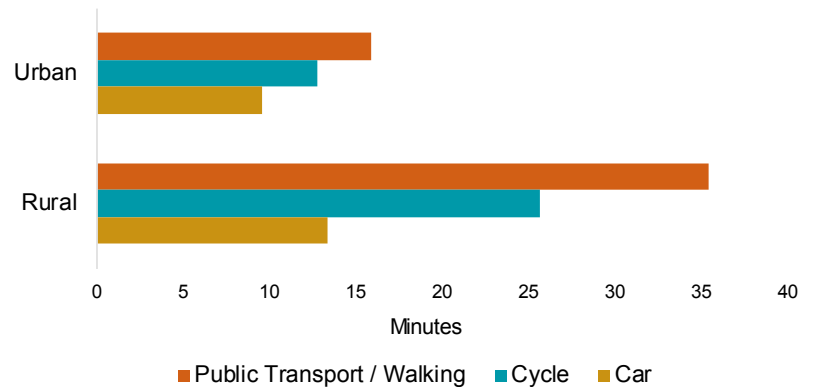
Average minimum travel times to a range of key services, by urban/rural area type, England, 2015

Legend: Public Transport / Walking, Cycle, Car
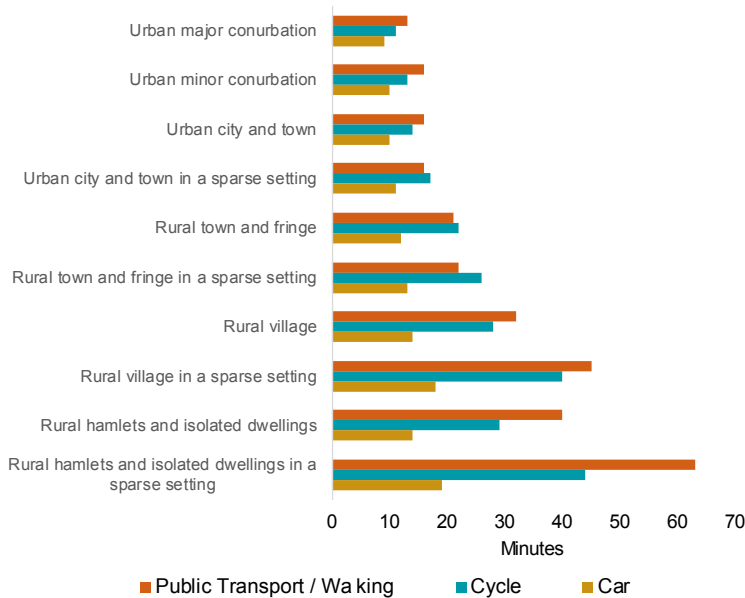
The chart to the left shows that within rural areas the average minimum access times ranged from 21 minutes for 'town and fringe' areas up to 63 minutes for hamlets and isolated dwellings in sparsely populated areas. There was rather less variation for travel by car.

For the public transport / walking mode, minimum journey times in rural areas were usually roughly double those of urban areas for most destination types, although this differential was less marked for primary schools.

Average travel time by public transport / walking to reach nearest key services, urban and rural areas, England, 2015

Legend: All Urban, All Rural
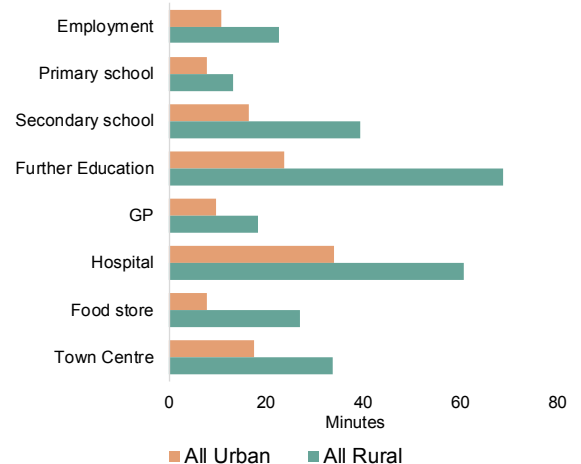
Urban and rural definition

This report uses the Defra Rural-Urban Classification, based on 2011 Output Areas.

See https://www.gov.uk/government/collections/rural-urban-definition for more details.

Local authorities

The results in the previous section were averages for England as a whole. Statistics are also produced for local authority areas, as well as smaller areas.

The charts to the right show how the average minimum travel times to the range of 8 key services varies between local authorities.

For public transport, the most common average minimum journey time was 15 minutes, with just under a third of authorities over 20 minutes. Very few authorities had average minimum public transport access times under 13 minutes.

For travel by bicycle the most common average minimum travel time was 12 minutes, but the spread was much wider, with average minimum times over 20 minutes for about 20% of local authorities.

The average minimum travel times by car were almost never more than 15 minutes, with the most common time being 9 minutes.

Most local authorities are quite diverse and so access times often vary considerably within them, usually strongly influenced by the rural or urban nature of the locality. This variability is captured in these statistics by calculating results for small neighbourhood-sized areas within local authorities. Some of these results are illustrated in the next section.

Travel time to reach nearest key services, local authority averages by transport mode, England, 2015

Number of local authorities

Average travel time (minutes)
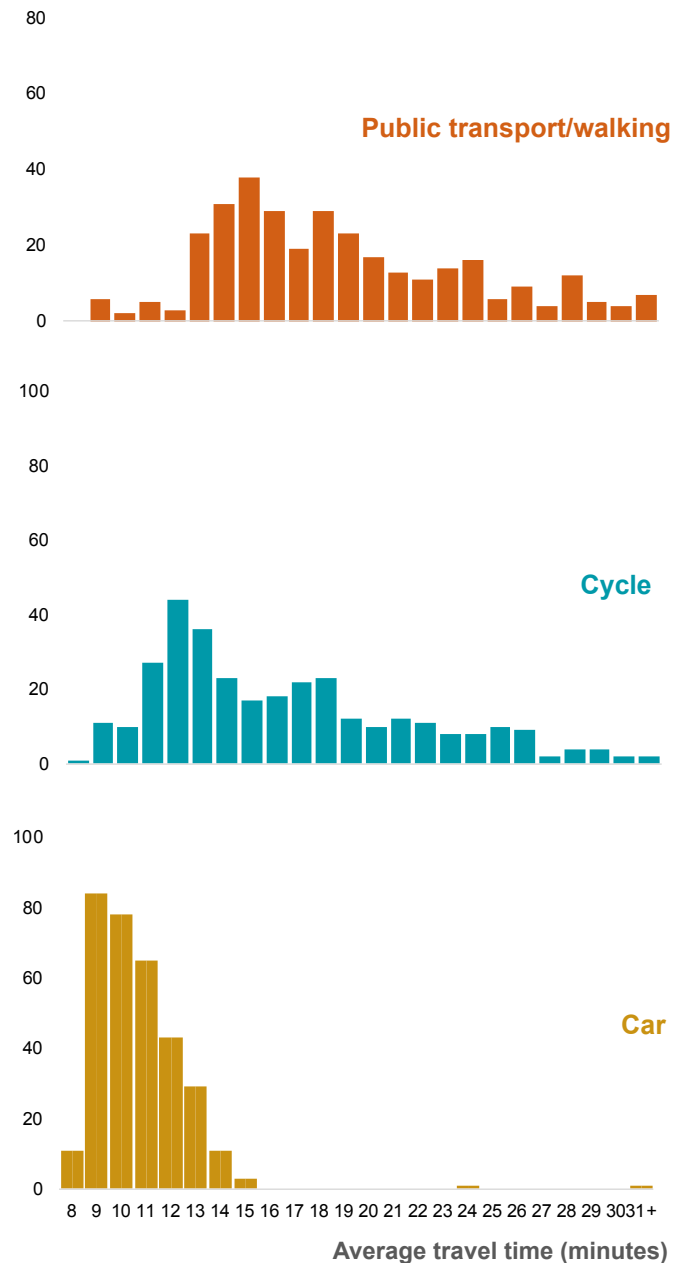
Local authorities

In some parts of England there are two tiers of local authorities, and in others a single unitary authority. Statistics have been calculated for both types of authority - around 360 in all. These vary considerably in size, from a population of a few tens of thousands, to over a million.

Lower layer Super Output Areas (LSOA)

These are the basis of the small area statistics published here. There are 32,844 LSOA in England, designed for use with the 2011 Census. They were defined so that they usually have a population of between 1,000 and 3,000.
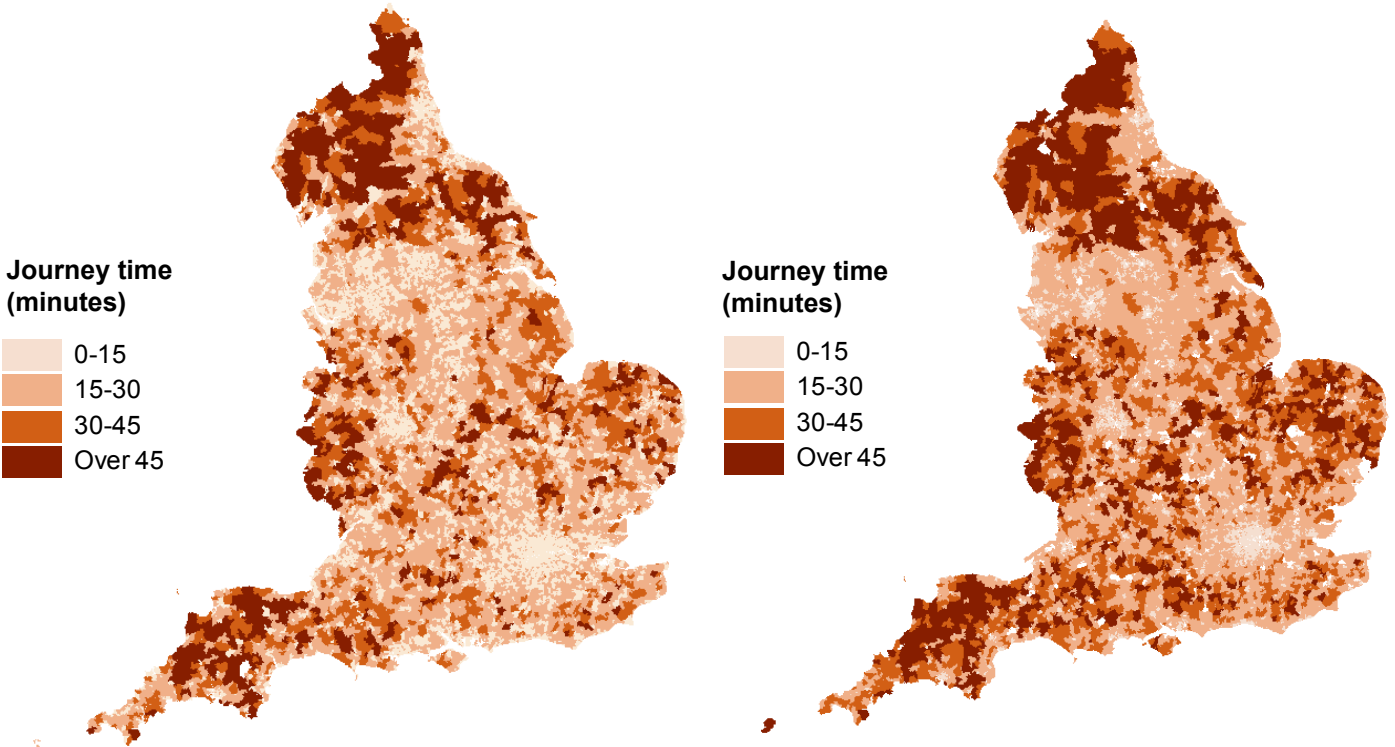
The following maps illustrate some of the local variation in access times, using results which have been calculated for over 32,000 local neighbourhoods (Lower Layer Super Output Areas, or LSOAs) across the country. The map on the left shows minimum travel times for medium sized centres of employment, while the right hand map shows average minimum travel times across the range of 8 key local services. In both cases, major urban areas can clearly be made out with the lowest travel times.

Average minimum travel time to nearest medium centre of employment (500-4,999 jobs), by public transport/walking

Average minimum travel time for 8 key local services by public transport/walking

Journey time (minutes)

- 0-15
- 15-30
- 30-45
- Over 45

Journey time (minutes)

- 0-15
- 15-30
- 30-45
- Over 45

What are 'employment centres'?

For these statistics, NOMIS data has been obtained on the number of jobs available within each LSOA. The LSOAs containing more than 100 jobs have then been classified as small, medium and large employment centres as below, with journey times being calculated to the centre of the LSOA.

Type	Jobs	No. in England
Small	100-499	16,625
Medium	500-4,999	9,460
Large	5,000+	676

Based on the above LSOA map, the public transport travel time to the nearest area with 500 or more jobs is less than 15 minutes for about 71% of the working age population, and under 30 minutes for about 96%.

The average minimum journey time across the 8 key services is 15 minutes or less for about 45% of the population, and 30 minutes or less for around 95%.

Data tables

Tables for small areas (LSOAs):

JTS0501 to JTS0508

Destination indicators

For each of the different key services (e.g. employment centres, primary schools etc.) statistics have been produced showing the percentage of the service user population that can reach the nearest location providing that service within 15, 30, 45 or 60 minutes.

For example, 44% of the population of 11-15 year olds is within 15 minutes of at least one secondary school by walking or public transport.

Percentage of service users able to access each service within 15 minutes, England, 2015

	Public transport / walking	Cycle	Car
Employment (100-499 jobs)	85	93	99
Employment (500-4,999 jobs)	70	87	98
Employment (5,000+ jobs)	13	29	56
Primary school	91	98	100
Secondary school	44	75	94
Further Education	36	66	90
GP	81	90	97
Hospital	5	16	39
Food store	90	91	97
Town Centre	33	55	82
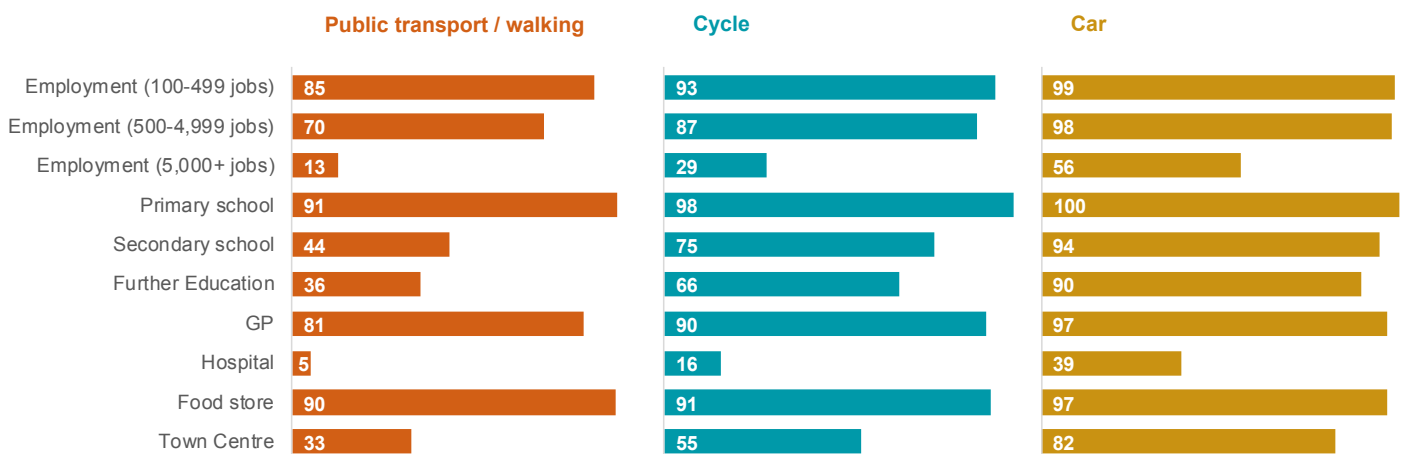
For those key services which are 'delivered' at fewer locations (e.g. hospitals, large employment centres, town centres), the proportion of the population able to access them in less than 15 minutes is clearly relatively low. For these, the longer journey time thresholds may be more useful.

For example, while only 13% of working age people live within 15 minutes of a large employment centre by public transport, about 80% live within 45 minutes of one.

Percentage of service users able to access selected services by public transport / walking within given times, England, 2015

Employment (500-4,999 jobs)		
Employment (5,000+ jobs)		
GP		
Hospital		

Percentage of service users

■ Up to 15 minutes ■ Up to 30 minutes ■ Up to 45 minutes
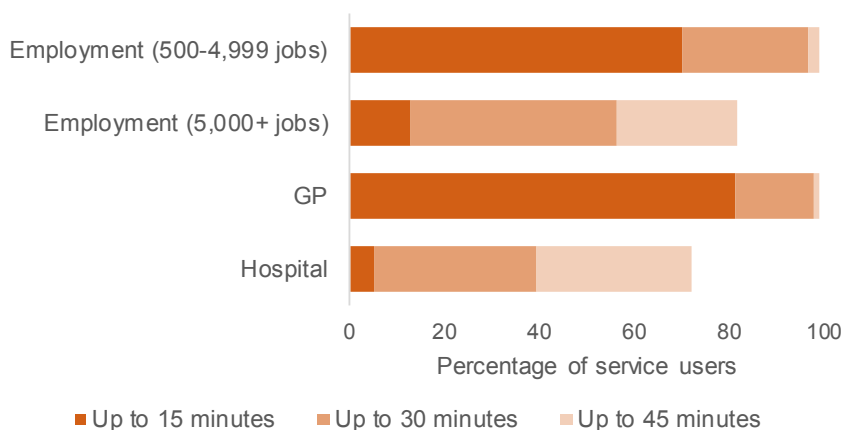
Destination indicators

The 'user' populations used for each service in the destination indicators are:

|	
Employment	16-74 year olds
Primary schools	5-10 year olds
Secondary schools	11-15 year olds
Further education	16-19 year olds
All other services	All households

Origin indicators

Large employment centres rarely exist outside large towns, but larger towns and cities may contain several together.

The chart to the right shows the average number of large employment locations (areas with 5,000 or more jobs) that can be reached within a range of journey times (up to a maximum of 10 locations).

The average number of such locations which can be reached by car within a given time is always higher than for the other two transport modes. However, the average number of locations that can be reached by public transport increases from a relatively low 1.5 within 30 minutes to 3.9 within 45 minutes and 6.2 within 60 minutes, probably reflecting the reach of relatively fast commuter services around cities.
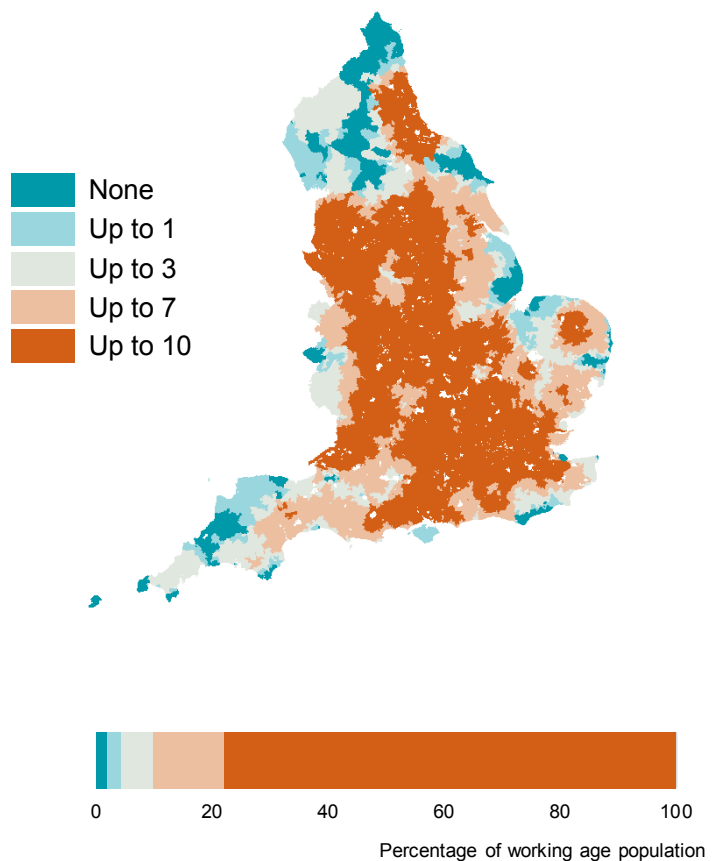
These contrasting patterns for the larger employment locations are also explored in the maps below. The accompanying bars show that while 82% of the working age population can reach 7 or more large employment centres by car, this is true of only 23% by public transport.

Average number of large employment centres within selected journey times, England, 2015

Accessible within...

■ Public Transport / Walking   ■ Cycle   ■ Car
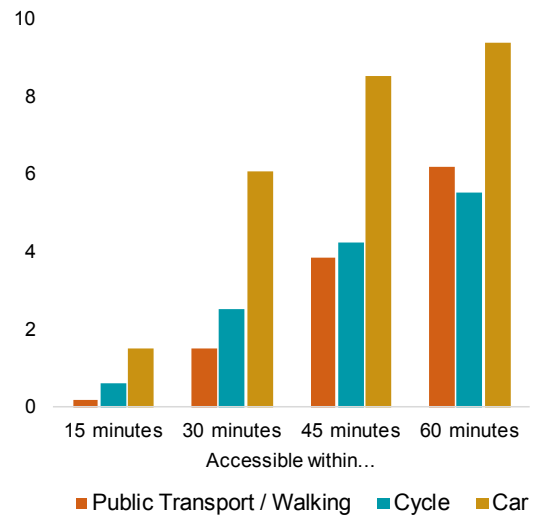
Average number of large employment centres accessible within 45 minutes by...

...public transport / walking

None
Up to 1
Up to 3
Up to 7
Up to 10

None
Up to 1
Up to 3
Up to 7
Up to 10

0   20   40   60   80   100

Percentage of working age population

0   20   40   60   80   100

Percentage of working age population
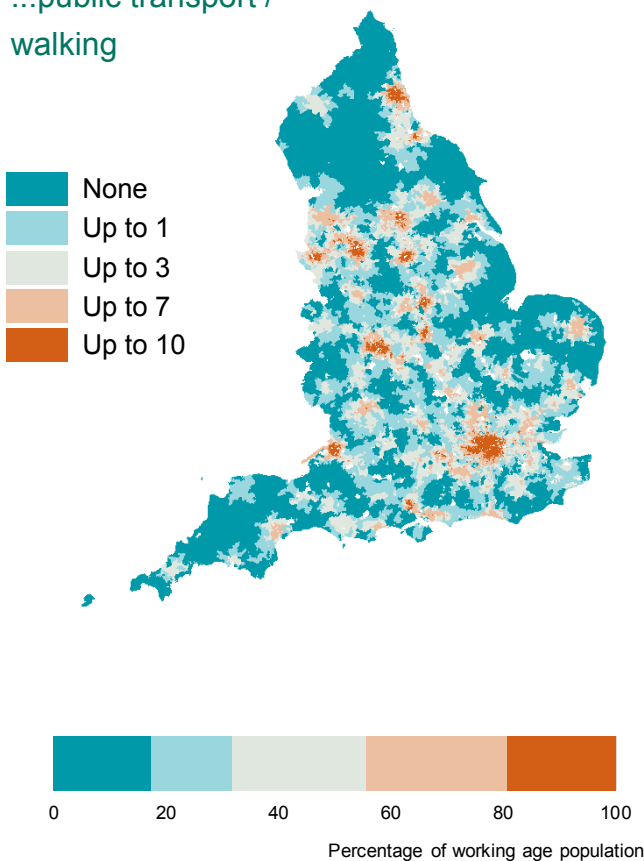
About these statistics

This release is the second in the series of Journey Time Statistics, based on modelling theoretical journey times from local neighbourhoods to a range of destination types.

In addition to updating journey times to key services, this release also includes journey times to some of the destinations previously published as connectivity statistics, using the same new model as the journey time statistics. These are described in the following section.

The main features of the journey times model are:

- The journey times are produced on a nationally consistent basis, allowing variations in transport access across the country to be seen, and different areas to be compared. However, it may be that more specialised local knowledge or more detailed data can provide a more accurate picture for any given area.

- Changes in journey times over time may result from changes in the number and/or locations of key service destinations from year to year, or from changes to the road network or to public transport service timetables and coverage.

- Although a consistent method has been used to produce these statistics for 2014 and 2015, it is also still possible that changes to underlying data sets (for example how timetable data is compiled, or work to refine destination sets) could affect the results. It is therefore not considered that robust conclusions can be drawn about changes over time at this stage.

What's next?

It is intended that additional results for other destinations will be released later in 2017. Please watch the web site for further information.
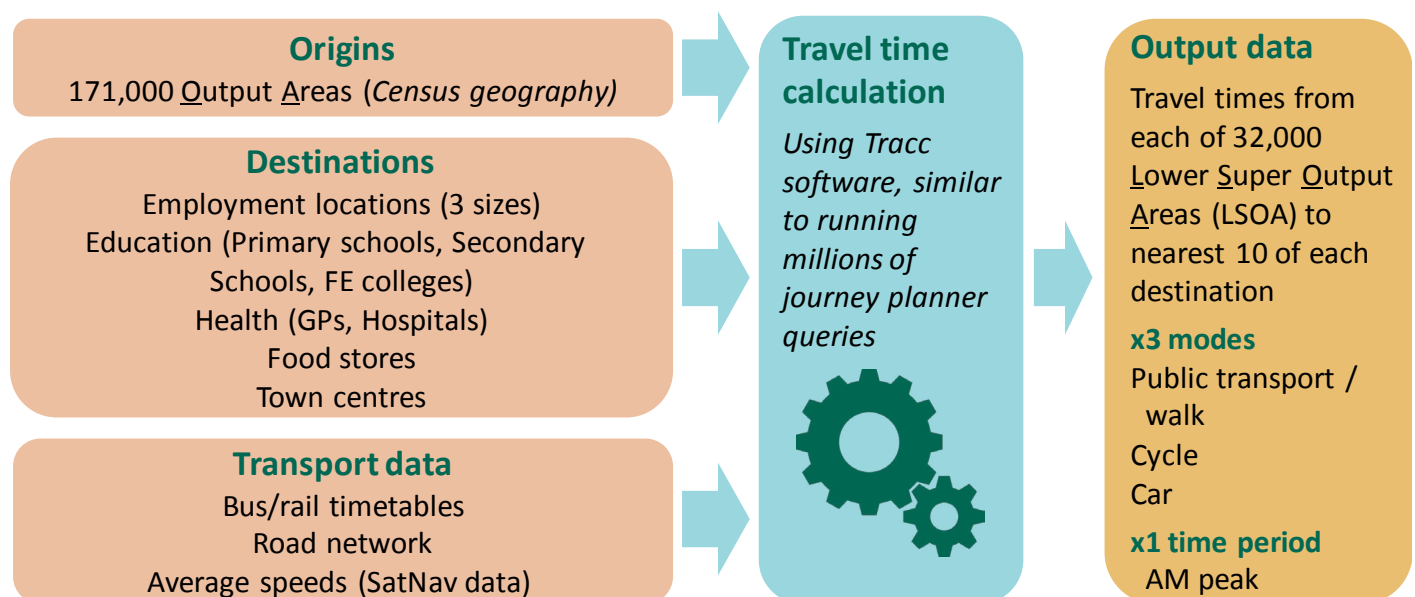
What do you think?

We are very interested in users views of these statistics and their future development. If you have comments or queries, please contact subnational. stats@dft.gsi.gov.uk.

Find out more

For more information on methods and data used, please see https://www.gov. uk/government/publications/ journey-time-statistics- guidance

Outline of Journey Time Statistics: Access to Services calculation process

Origins
171,000 Output Areas (*Census geography*)

Destinations
Employment locations (3 sizes)
Education (Primary schools, Secondary Schools, FE colleges)
Health (GPs, Hospitals)
Food stores
Town centres

Transport data
Bus/rail timetables
Road network
Average speeds (SatNav data)

Travel time calculation

Using Tracc software, similar to running millions of journey planner queries

Output data

Travel times from each of 32,000 Lower Super Output Areas (LSOA) to nearest 10 of each destination

x3 modes
Public transport / walk
Cycle
Car

x1 time period
AM peak

Connectivity analyses

In 2014, the DfT started to produce a new type of experimental statistics, called connectivity statistics, which extended the methods then used for modelling travel times to local services to new sets of economically significant destinations such as transport hubs. With this release the new Journey Time Statistics modelling methods introduced last year have been applied to two of the 'connectivity' data sets for the first time (airports and rail stations).

These experimental analyses will now be organised as part of the overarching Journey Time Statistics series, but the term 'connectivity' will continue to be used to distinguish this slightly different type of analysis from the Access to Services measures described above. The methodological differences from the Access to Services methods described above are quite minor, and are described fully in the Technical Guidance.

It is important to note however, that because of the adoption of the new calculation method, the new connectivity statistics for 2015 are not at all comparable with any produced previously.

The chart below shows the percentage of the population of England who can access a major airport or rail station within a given time. For example 22% of people could reach a major airport within an hour by public transport, while 70% could reach a major rail station within the same time. The equivalent figures for travelling by car are 63% and 91% respectively.

The accompanying data tables include statistics on average minimum journey times, and origin and destination indicators similar to those for Access to Services. There are also statistics for particular destinations - i.e. specific airports and rail stations.
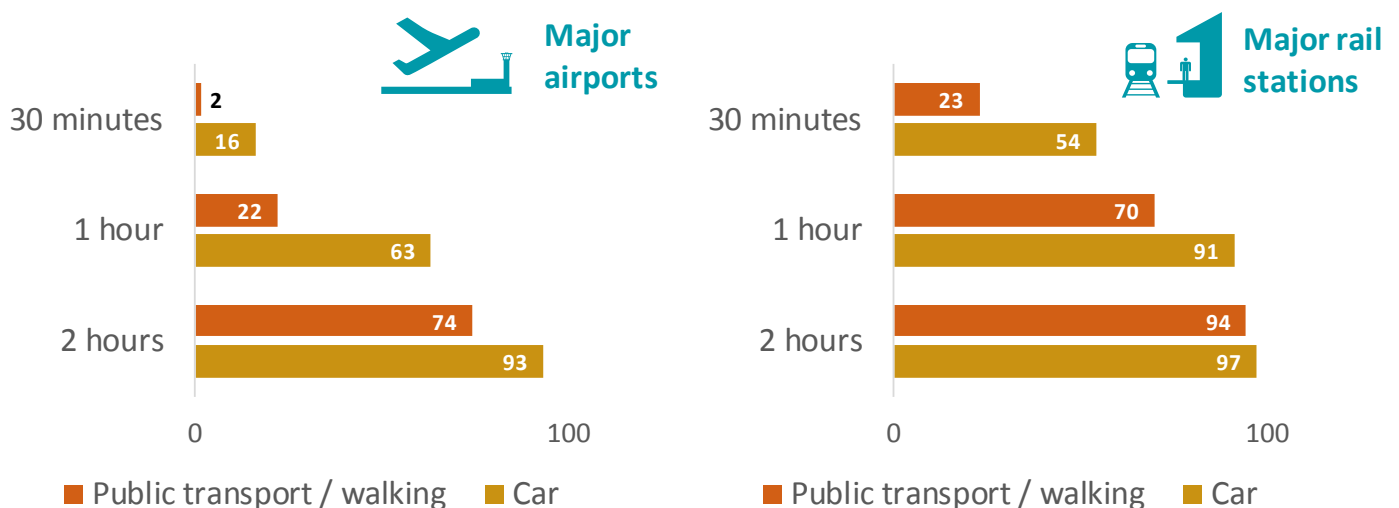
Connectivity destinations

For the purposes of these statistics 'major' airports are defined as the 12 English airports with more than 1% of UK terminal passengers in 2015, and 'major' rail stations as the 79 English stations classified as national hubs or regional interchanges in the *Network Route Utilisation Strategy* published in 2011.

In some data tables longer lists of destinations are also used.

These definitions are used purely for convenience and have no statutory or operational basis. Full listings can be found with the Technical Guidance.

Percentage of population able to access major airports and rail stations within given times, England, 2015

Major airports

	Public transport / walking	Car
30 minutes	2	16
1 hour	22	63
2 hours	74	93

Major rail stations

	Public transport / walking	Car
30 minutes	23	54
1 hour	70	91
2 hours	94	97

■ Public transport / walking ■ Car

Background information

Further information

Further information on the data sources, calculation methodology and strengths and weaknesses of these statistics can be found in the separate Technical Documentation. It is important to note that due to the methodological changes introduced for this report, the results are not directly comparable with those in previous editions of Accessibility Statistics or Connectivity Statistics.

The full set of journey time statistics tables are available to download from the Journey Time Statistics home page.

Where contractual conditions permit, the locations of services used in the calculation of these statistics will be available to download at https://www.data.gov.uk in due course.

Other DfT statistics containing information on the use of public transport include the National Travel Survey and Bus Statistics.

Strengths and weaknesses of the data

The key strengths and weaknesses of these statistics are discussed in the guidance note available from the Technical Information section of the web site. In summary however, the following points should be kept in mind:

- The statistics are based on the calculation of theoretical journey times, they are not based on real journeys

- They are however based on actual public transport times, and average traffic speeds on the road network

- They are compiled on a consistent basis across the country

- Although the statistics are calculated to a high level of geographical detail, some assumptions and simplifications are necessary in the modelling (for example assigning the start point of journeys to a single point in each Output Area, road speeds, interchange times for public transport)

- For particular areas, local authorities and other experts may have more detailed information allowing them to produce more accurate or detailed models of the local situation

- In particular, the list of hospital destinations has been refined this year so that the types of hospital included are more consistent, removing some smaller hospitals with fewer services. This should be kept in mind when comparing times with 2014 in those areas affected.

- Demand responsive services (e.g. bus services which have to be booked) are only included to the extent that they are included, and can be plausibly modelled, in the Traveline National Data Set.

National Statistics

These statistics are outside the scope of National Statistics. However, as official statistics they are produced in accordance with the Code of Practice for Official Statistics.

Details of ministers and officials who received pre-release access to these statistics up to 24 hours before release can be found at the Journey Time Statistics home page.

Feedback

The Department is always keen to hear comments and feedback on its statistics, and these may be sent to subnational.stats@dft.gsi.gov.uk.