Accessibility Statistics 2013

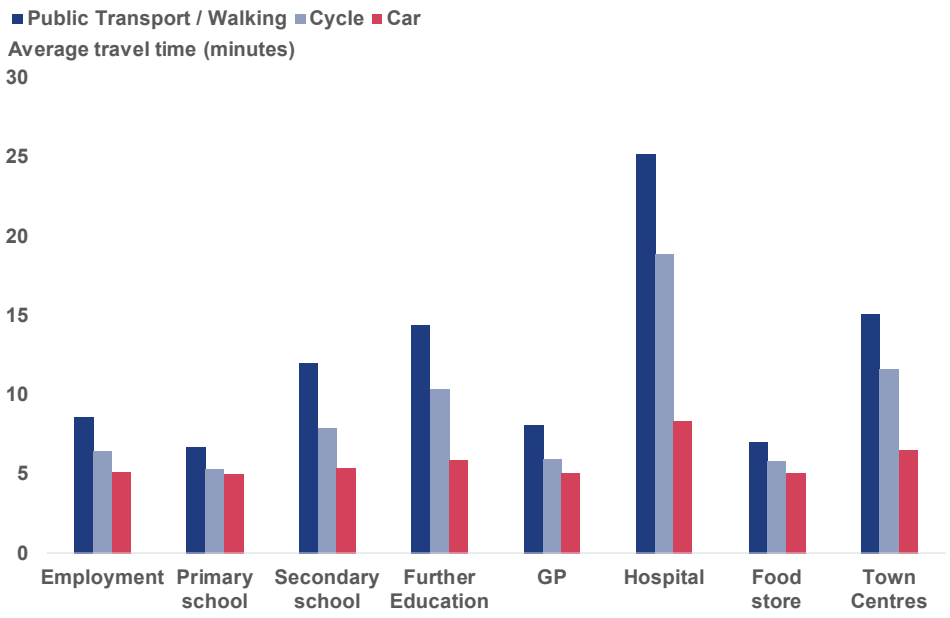
Department for Transport

Travel times to the nearest local services in 2013 showed little change on 2011.

Across a range of 7 key local services, the average minimum travel times were 12 minutes by public transport / walking, 9 minutes by cycle, and 6 minutes by car.

The average minimum travel time to the nearest service by public transport / walking was lowest for primary schools and food stores (7 minutes) and highest for hospitals (25 minutes).

Average travel time to reach nearest key services, England, 2013 [ACS0101]



The average minimum travel times across the range of 7 key services by public transport / walking were 10 minutes for urban areas and 19 minutes for rural areas.

About this release

This Statistical Release presents estimates of travel times from where people live to key local services for England for 2013.

Statistics are published at national, regional, local authority and small area (Lower Super Output Area) level.

They are produced by calculating theoretical travel times from residential neighbourhoods to the nearest services of each type, using information on public transport timetables, the road network, and information on actual average traffic speeds on the road network.

Statistics are calculated for eight services (centres of employment, primary schools, secondary schools, further education institutions, GPs, hospitals, food stores and town centres) and three main modes of transport (public transport/walking, cycle and car).

In this publication

RESPONSIBLE STATISTICIAN: Rachel Moyce 020 7944 4139
FURTHER INFORMATION: Media: 020 7944 3066 Public: 020 7944 4139 Email: subnational.stats@dft.gsi.gov.uk

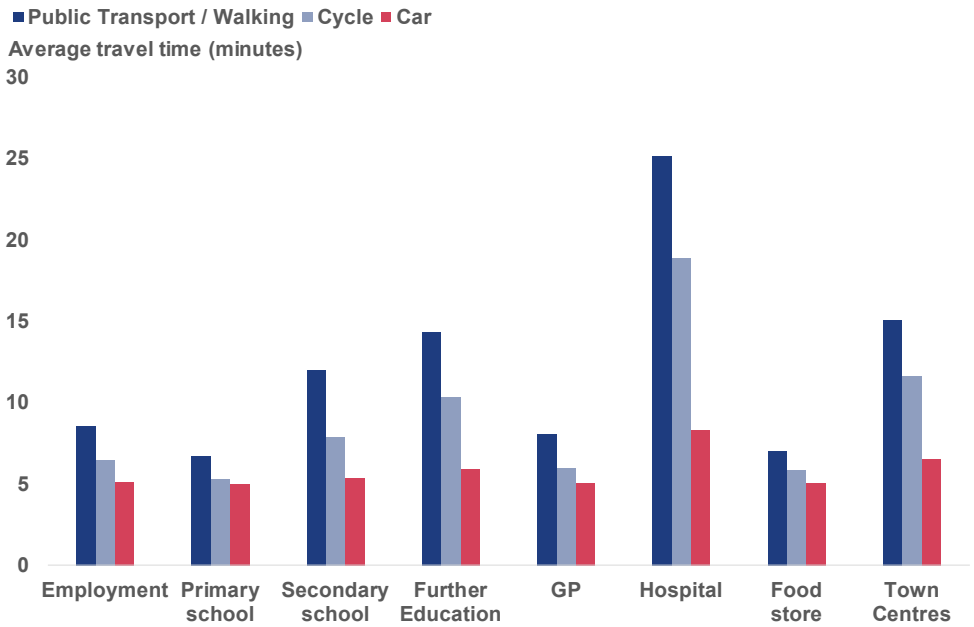
Travel time indicators - the national picture

For England as a whole, the average minimum travel time across seven key services (this measure excludes town centre destinations) was 12 minutes by public transport / walking, 9 minutes by cycling and 6 minutes by car.

The average minimum travel time (see chart 1) to the nearest service by public transport/walking was lowest for primary schools and food stores (7 minutes) and highest for hospitals (25 minutes). The pattern for travel by bicycle was similar, but with slightly less variation, from 5 minutes for primary schools, food stores, GPs and employment centres to 19 minutes for hospitals. The same general pattern has been seen since 2007.

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.

Chart 1: Average travel time to reach nearest key services, England, 2013 [ACS0101]



The statistics currently take three forms.

Travel time indicators: the travel time to the nearest service location, averaged over a given area

Destination indicators: the proportion of resident users with access to a given service within a given time

Origin indicators: the choice of locations available to the resident population within a given time, for a given service

Find out more

Tables for travel time indicators:

ACS0101 to ACS0107

Changes since 2011

The average minimum travel times changed little between 2011 and 2013.

The averages across the 7 key services for each transport mode were down very slightly (by 0.3 minutes for public transport, cycle and car). Taking into account the various uncertainties affecting the model, this does not amount to significant changes.

Any changes over time will be due to a combination of:

1. changes in the service locations
2. changes in the quality and coverage of the service location data sets
3. (for the public transport mode) changes to public transport services
4. changes to the road network, or to average traffic speeds on the network

The first two of these factors are likely to have the greatest effect. In addition, the methodological factors in the column the right must also be considered.

Important changes to note

Between 2011 and 2013 the way public transport timetable data is compiled nationally changed. It is possible that this could have had an effect on the public transport/walking statistics. Therefore any comparisons between 2011 and 2013 should be treated with caution.

There has also been a change to the method used for the public transport mode calculation with this edition. Revised figures have also been provided for 2011 using the new method, to give a basis for comparison. The 2013 and revised 2011 public transport/walking figures are not directly comparable with the old 2011 or earlier figures published previously.

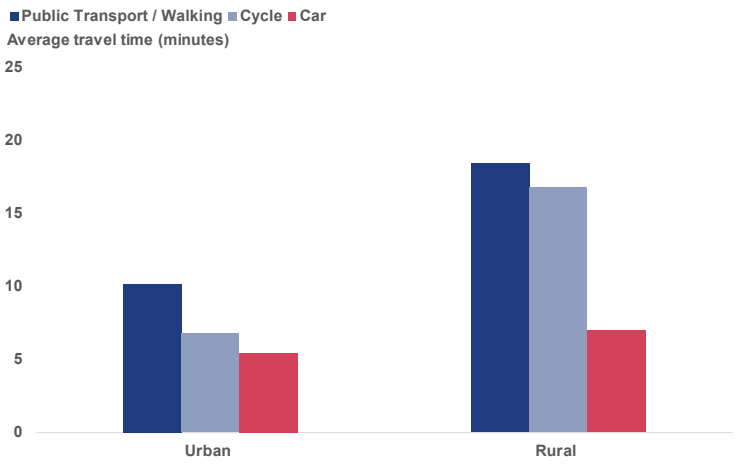
See Background Information section for more details.

Urban and rural patterns

Average minimum access times were higher for users in rural areas compared with urban areas (see chart 2). In 2013 the average travel times to the range of 7 key services by public transport were 10 minutes for urban areas and 19 minutes across all rural areas.

Within rural areas the average minimum access times ranged from 15 minutes ‘town and fringe’ areas, to 21 minutes in ‘villages’ and 23 minutes for ‘hamlets and isolated dwellings’ (see chart 3).

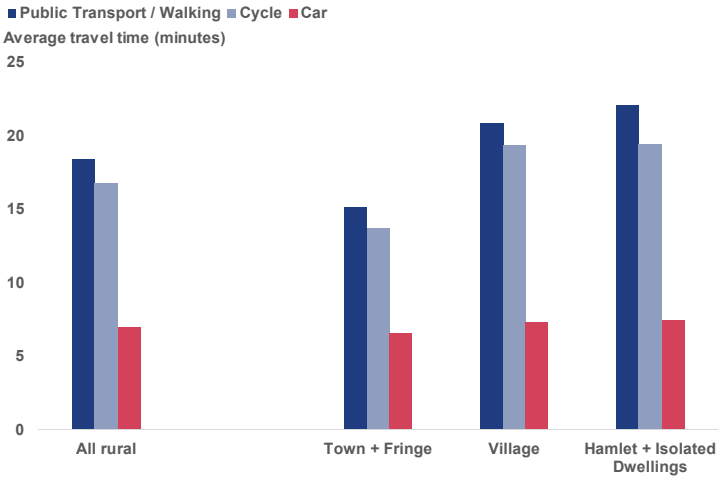
Chart 2: Average minimum travel times to a range of key services, by mode and area type, England, 2013 [ACS0102]



In urban areas, the average minimum access time by bicycle (7 minutes) was much lower than that for public transport (10 minutes). For all types of rural areas, the difference was less pronounced, although cycle access times were still slightly lower. This is because for relatively short journeys, such as those typical of urban areas, cycling is likely to be quicker than walking or waiting for a public transport service. Over the longer distances more typical of rural areas, there is more opportunity for public transport vehicles to compensate for the initial waiting time.

There was much less differentiation between urban and rural travel times for car use, ranging between 5 and 7 minutes. This will partly reflect the minimum 5 minute travel time imposed in the statistics for all journeys, without which many short car journeys would be calculated to be even shorter.

Chart 3: Average minimum travel times to a range of key services, by mode and rural area type, England, 2013 [ACS0103]

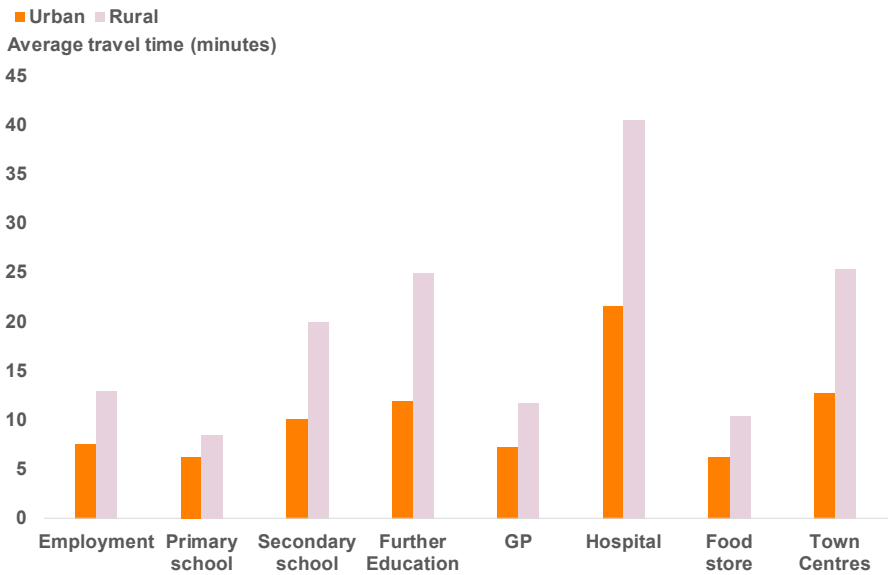


Access times and urban / rural areas

Much of the variation in access times is related to the density of population of an area, which will generally have a strong relationship with the number and density of service locations, and the density and service frequency of transport networks and services. Therefore there tends to be a strong relationship between access times and the urban or rural character of an area.

For individual service types, average minimum travel times varied relatively little between urban and rural areas for those services with a more localised delivery pattern, such as primary schools, GPs and food stores (see chart 4). The difference was more marked for those services which tend to serve larger catchments, such as further education establishments and hospitals.

Chart 4: Average travel time by public transport / walking to reach nearest key services, urban and rural areas, England, 2013 [ACS0102]



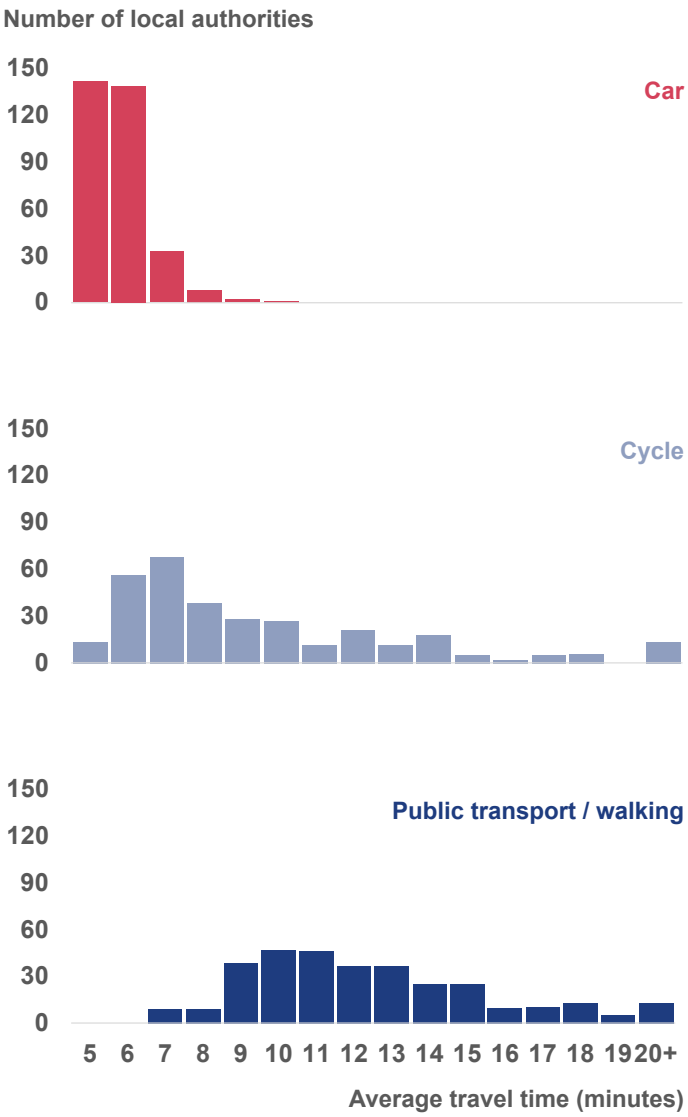
Local authorities

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

Chart 5 shows how the average minimum travel times to the range of services varies between local authorities.

The average minimum travel time by car was five or six, or occasionally seven minutes for most authorities. The local authority average minimum travel times for the cycle mode were mostly between 6 and 14 minutes, with 7 minutes being the most common. The public transport/walking mode averages were mostly between 9 and 15 minutes, with 10-11 minutes being the most common.

Chart 5: Travel time to reach nearest key services, local authority averages by transport mode, England, 2013, [ACS0102]



Find out more

Tables for local authorities:

ACS0107, ACS0401 to ACS0408

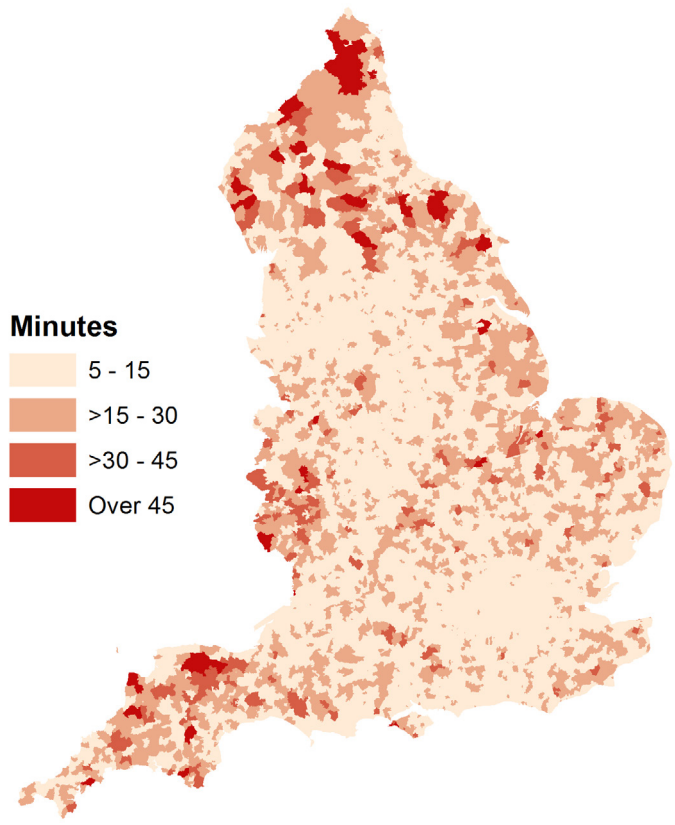
In general, there is relatively little contrast in overall average minimum travel times between regions. The set of charts on the next page shows public transport / walking times for local authorities within their respective regions. The most marked variation in the overall regional averages is for London, which is very different geographically. Within the regions, the local authorities are colour coded to show the effect of their urban/rural character.

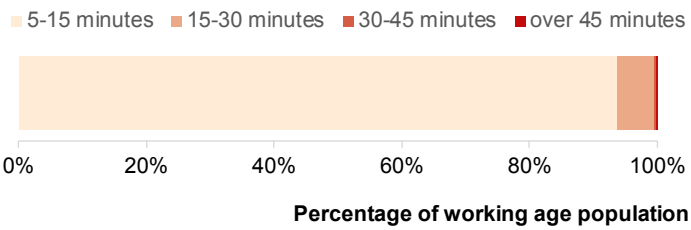
Chart 6: Travel time to reach nearest key services, local authority averages by public transport / walking, urban and rural areas, England, 2013, [ACS0107]

Most local authorities are quite diverse and so access times may vary considerably even within authorities. The following maps show the range of access times for the 32,000 local neighbourhoods across the country for which results have been produced. These examples show minimum travel times by public transport to employment centre and town centre destinations.

Average minimum travel time to nearest...

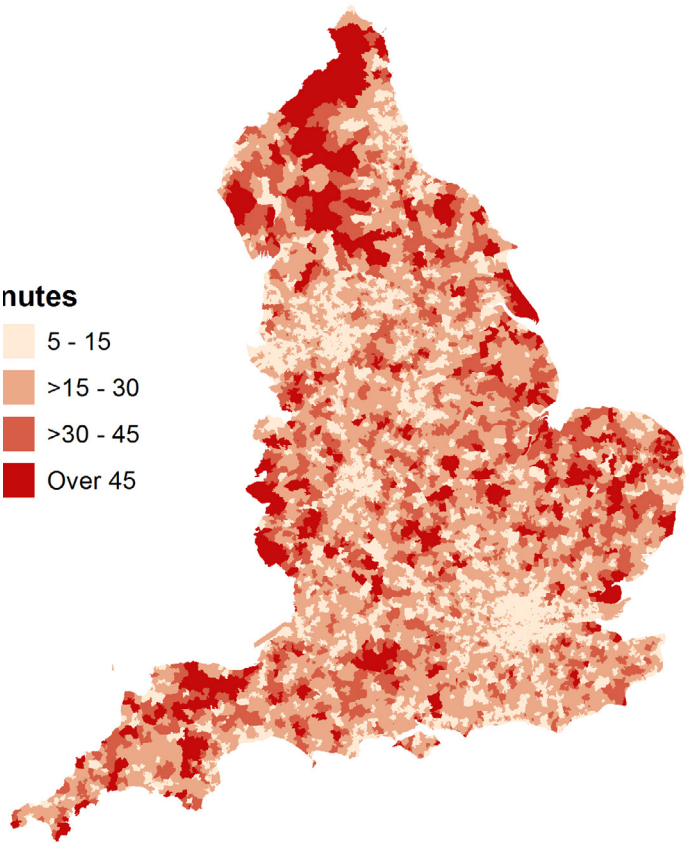
...medium centre of employment (500-4,999 jobs)

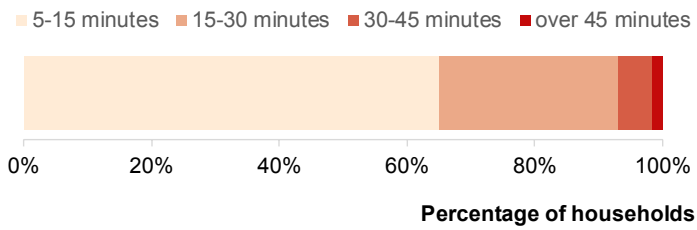




Percentage of working age population

...town centre





Percentage of households

In the above examples:

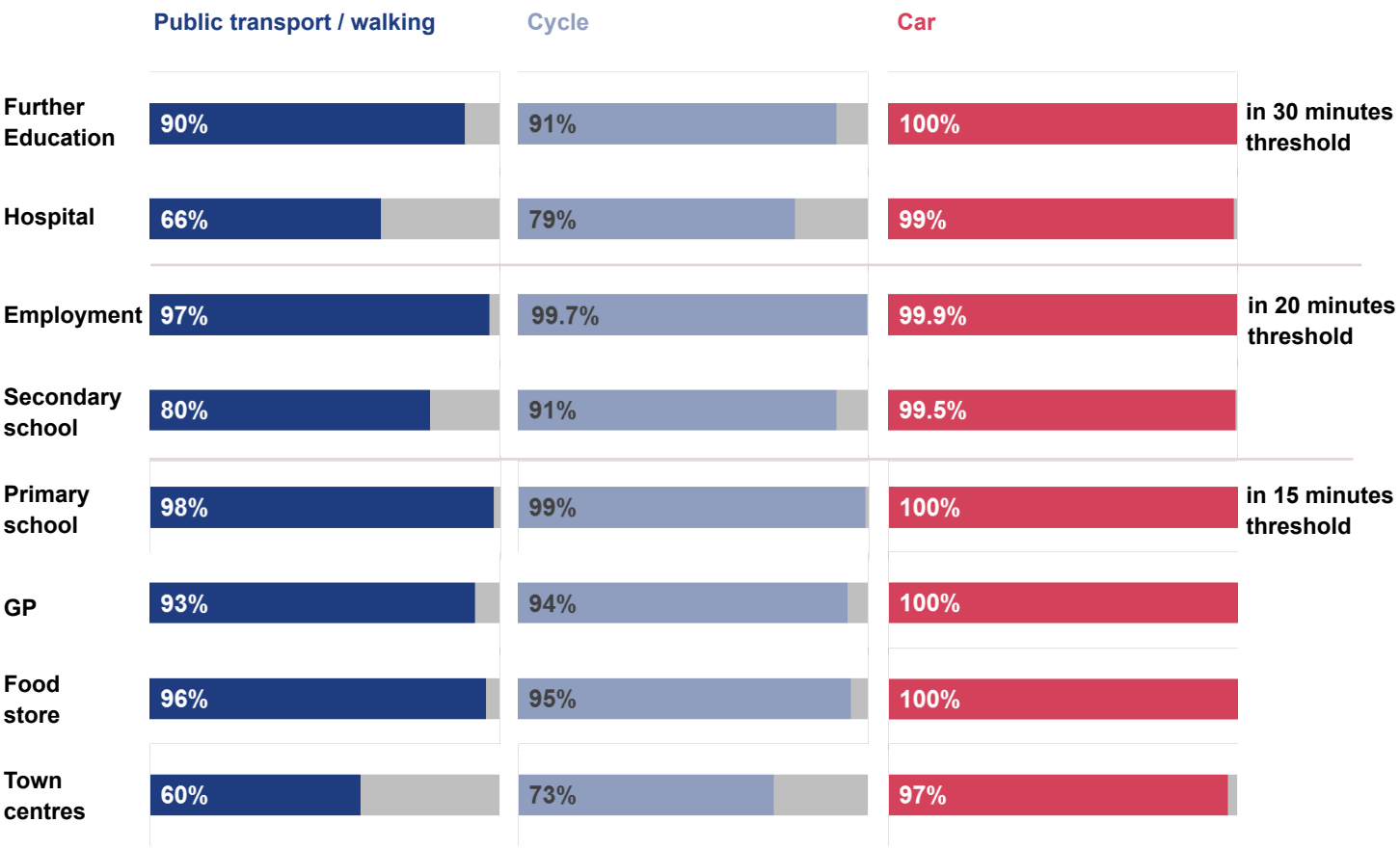
- The public transport travel time to the nearest area with 500 or more jobs is less than 15 minutes for about 94 per cent of the working age population, and under 30 minutes for about 99 per cent.

- About 65 per cent of the population can reach the nearest town centre within 15 minutes, and 93 per cent within half an hour (these estimates are less precise than the ones in the following section on destination indicators).

Destination indicators

For each destination type statistics have been produced showing the percentage of the population that can reach the nearest location providing that service within two specific time thresholds. The time thresholds vary depending on the type of destination.

Percentage of households able to access each service within (lower) time thresholds



Two different types of destination indicators are currently published

The 'threshold' measures shown here are straightforward, but are not necessarily very sensitive for comparing different locations, or comparisons over time.

Therefore a second set of 'continuous' destination indicators was developed which takes into account the tendency for real journeys to be made less frequently as time taken increases. A formula is used to derive a figure for the number and percentage of users with access to the service within a 'reasonable' time. Different factors are applied for each type of service, and for each mode of transport.

Find out more

Tables for small areas: ACS0501 to ACS0508

Find out more

Tables for destination indicators: ACS02, ACS0501 to ACS0508

Origin indicators

Chart 7 below shows the average number of employment locations of different sizes that can be reached within 40 minutes (up to a maximum of 10 locations).

The averages show that in most areas, it is possible to access a large number of employment locations within 40 minutes by car, even of the relatively sparsely distributed larger employment locations, with at least 5,000 jobs.

By contrast, although it is possible to reach a large number of smaller employment locations within the same time by public transport/walking or by cycle, the average number of larger employment locations that can be reached by these modes is much smaller.

The average number of such locations which can be reached by car is 9.0, compared with 4.2 for bicycles and 2.8 for public transport / walking.

These contrasting patterns for the larger employment locations are also explored in the maps below.

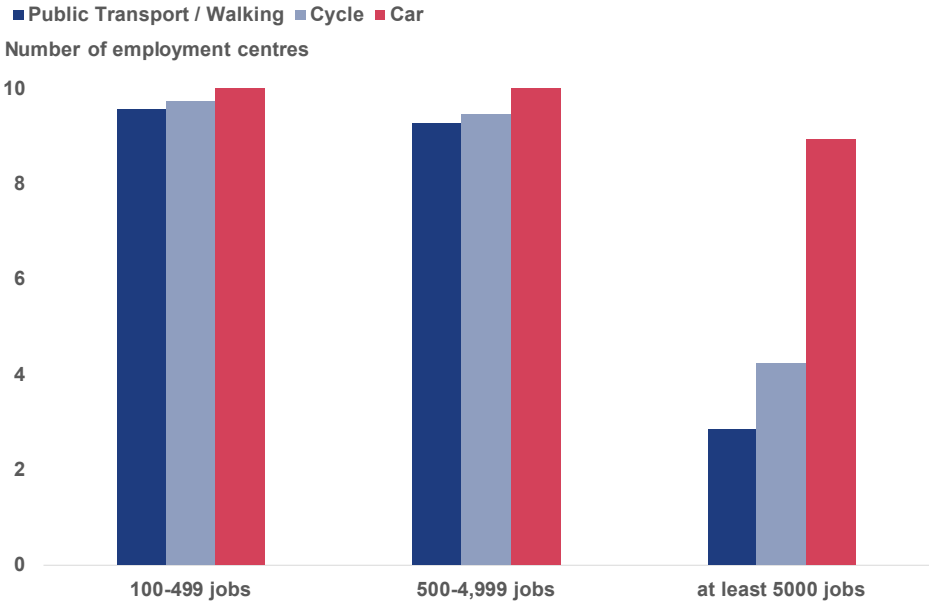
Number of different services locations that users can reach

These indicators measure the number of different services locations of a given type that users can reach within a given time.

In general, the greater the number of destinations that a user can reach, the more 'choice' they have. Clearly, 'choice' is not always so simple – for instance a user may need to be treated at a specialist hospital rather than the nearest one, and a student's choice of further education college is likely to depend much more on the courses offered and their ability to obtain a place than simple location.

Nevertheless, to the extent that being able to reach more loca-tions will in general be beneficial to the potential user, these indicators can be useful.

Chart 7: Number of employment centres within 40 minutes with..., England, 2013, [ACS0304]



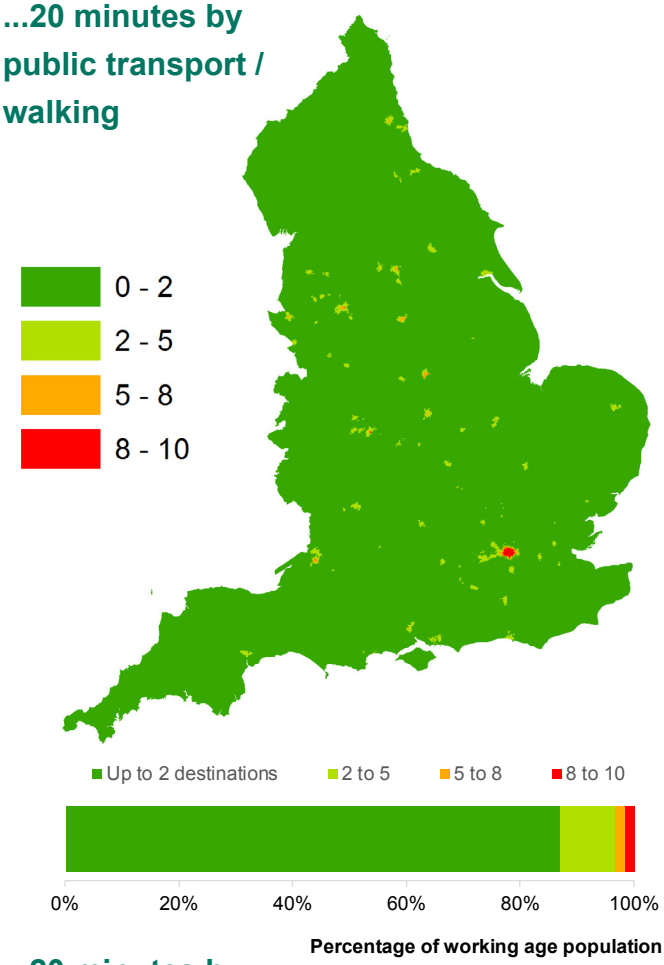
Find out more

Tables for origin indicators:

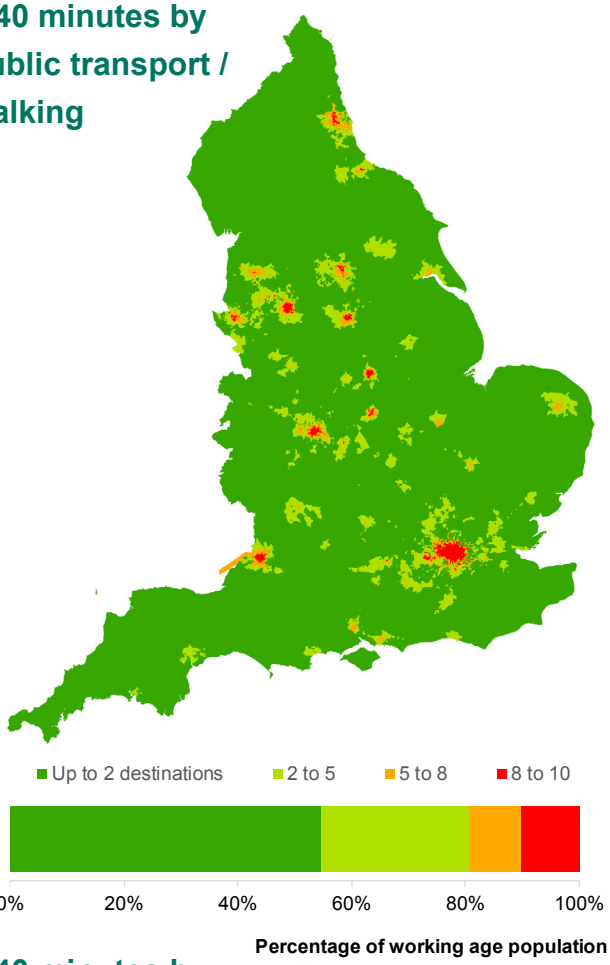
ACS03, ACS0501 to ACS0508

Average number of large employment centres accessible within...

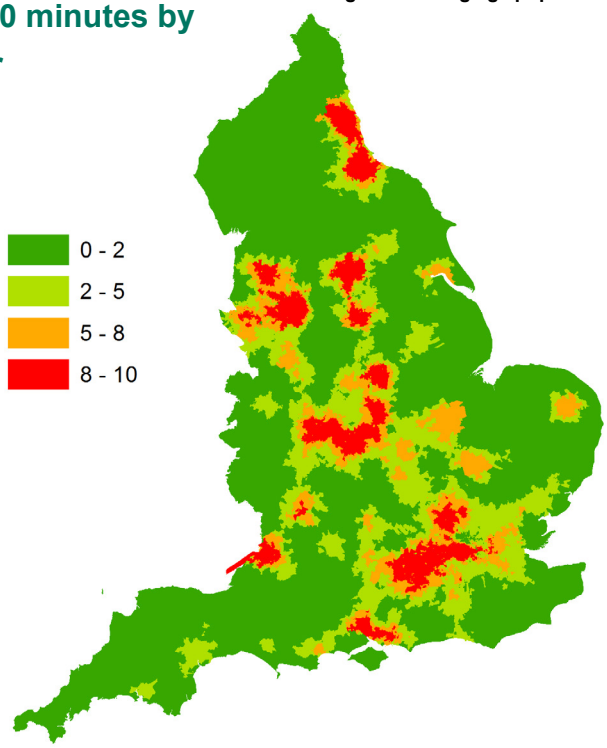
...20 minutes by public transport / walking

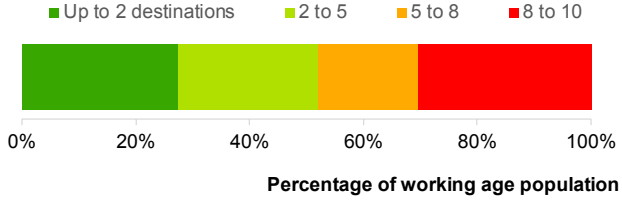


...40 minutes by public transport / walking

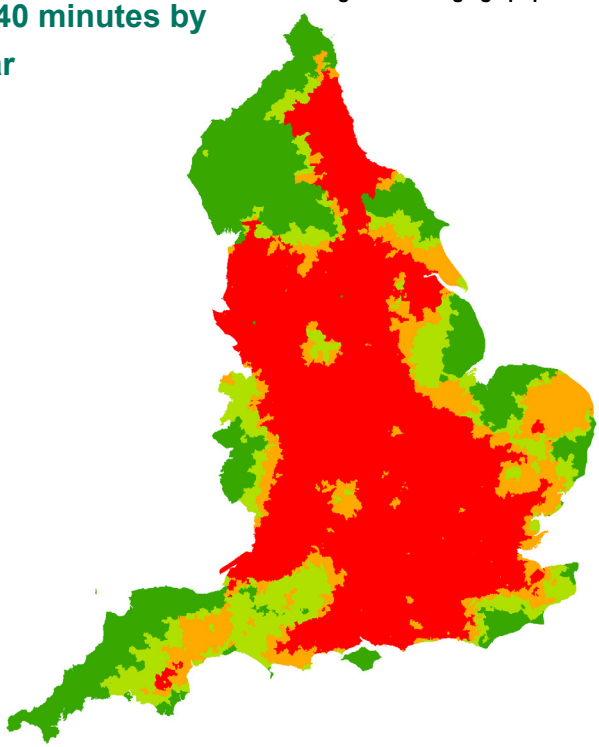


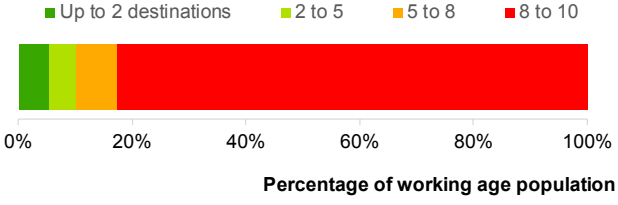
...20 minutes by car





...40 minutes by car





Source data change for the Public transport / walking mode

The public transport / walking estimates in this data set depend on the consistent interpretation of comprehensive nationwide information on public transport networks and timetables. The main source of information of public transport timetables has changed since the 2011 edition of these statistics. The public transport statistics were not updated for 2012 because these changes were still bedding in.

The timetable data are now taken from the Traveline National Data Set (TNDS). Previously they came from the National Public Transport Data Repository (NPTDR).

The changes to the compilation arrangements give the potential for timetable data to be recorded in more detail than before. Quality checks on the results of the 2013 public transport statistical model suggest that they are of good quality, and that the timetable data compiled under the new system are being interpreted correctly in the modelling process. However, it is still possible that there could be some differences in interpretation of the timetable data recorded under the new system, compared with how similar services were recorded previously, so any comparisons between 2011 and 2013 public transport data should be made cautiously, with this possibility in mind.

Methodology change for the Public transport / walking mode

With this edition of the statistics, a change has been made to the calculation of the public transport/ walking mode travel time. At the final stage of the calculation, further checks have been introduced to ensure that journeys completed using public transport (which are assigned a minimum journey time of 10 minutes within the model) could not be made faster by walking alone. Because many journeys to local services are relatively short, this change results in noticeably shorter minimum journey times on average.

In order to provide a more consistent basis for comparisons over time, the 2011 statistics for the public transport/walking mode have been re-calculated using the new method. These revised 2011 statistics are therefore comparable with 2013 (subject to the caveat above about the change in the timetable data source). Public transport/walking results for earlier years, and the original 2011 statistics, are not directly comparable with 2013.

Review update

With the previous edition of these statistics, a user survey was carried out, in order to help inform a review of the statistics. This established that there was a substantial user base for these statistics,

mainly among local authorities and others involved in the local planning sphere. Further details of the survey responses may be found in the report Users and Uses of Accessibility Statistics.

The Department therefore plans to continue to produce statistics on access to local services for small areas in future years. Further work is being carried out on the exact methods and arrangements for doing this, including consideration of the following possibilities:

- production of the raw data within DfT
- simplifying the large range of indicators currently produced
- reviewing the destination data used
- producing more user-friendly outputs, especially for LA and small area results
- incorporating new statistics based on experience with and feedback on the experimental connectivity statistics published in June 2014, or on other user feedback

This work is likely to have an impact on the detail of the statistics produced. 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.

As at September 2014, the intention is to produce statistics for 2014 in August-September 2015. Any significant change from this will be announced on the series web page. The Transport Accessibility and Connectivity statistical series will be renamed ‘Travel Time Statistics’ in order to more clearly describe the outputs, and reduce confusion with policies on improving ‘accessibility’ for disabled people. Individual releases within this series will also be renamed.

Strengths and weaknesses of the data

The key strengths and weaknesses of the accessibility statistics are discussed in a separate document. A full explanation of the methodologies used and further information on the items to consider when using these statistics can be found in the separate guidance note and methodology note. All of these documents are 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 public transport trips to a single point in each Output Area)

- 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

- 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.

Notes

1. The full set of accessibility statistics tables are available to download from the Transport Accessibility Statistics home page.

2. The tables are accompanied by Technical Information including notes on Methodology, Frequently Asked Questions, Strengths and Weaknesses, Users and Uses, and key terms and definitions used.

3. Tables ACS0108 to ACS0111, providing indices of *'Households with good transport access'* will be updated during October 2014.

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

5. Details of ministers and officials who received pre-release access to these statistics up to 24 hours before release can be found at the Transport Accessibility Statistics web page referred to in note 1 above.

6. Other DfT statistics containing information on the use of public transport include the National Travel Survey (2013 results published June 2014) and Bus Statistics (2013 statistics published 22 September 2013).