



Recent trends in road and rail travel: What do they tell us?

On the Move 2 (1995-2014):
Overview and policy analysis

December 2016



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Independent Transport Commission
70 Cowcross Street
London
EC1M 6EJ

Tel No: **0207 253 5510**
www.theitc.org.uk

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Executive Summary

Background

This report is based on a project commissioned by the Independent Transport Commission (ITC) with an aim to identify the pattern of road and rail travel trends in England between 1995 and 2014. It provides an overview of these findings and updates two other reports previously published by the ITC, the first exploring travel trends up to 2007 and a related report looking at attitudinal trends and their implications for policy making. This summary report should be read in conjunction with the more detailed technical report published separately. The research has used National Travel Survey (NTS) data published by the UK Department for Transport to investigate these travel trends: for consistency over the time period this data is restricted to England only.

Key Findings

- Overall, the total miles travelled by English residents reached a peak in 2007 before falling sharply at the time of the Great Recession of 2008-09, and subsequently stabilising at this lower level. This was in spite of a significant population increase of 12% over the period 1995-2014. As a result, per capita travel in terms of distance has been decreasing significantly over the past decade and is now 10% lower than in the mid-2000s.
- Each resident is making significantly fewer trips overall in 2014 than in 1995. However, their average trip is now longer in terms of both time and distance.
- The 'Peak Car' debate remains open. Although the aggregate traffic level is rising, individual car driving mileage per adult has declined significantly over the period 1995-2014. The contribution of falling company car use (caused by tax changes) to this decline is no longer significant.
- Rail travel per person (measured by distance) in England has continued to rise sharply over the whole period 1995-2014. This has been due to a greater percentage of the population travelling by rail, rather than existing travellers making more or longer journeys.
- The historic correlations between incomes/costs and travel are weakening. Rail travel per person has continued to rise in spite of above-inflation fare increases, while car driving per adult has declined in spite of motoring costs remaining stagnant.



- We are witnessing an inter-generational divide in travel behaviour trends. Older women (over 60) are the group where car driving (and licence holding) has been increasing fastest. Younger people (especially men under 35) are the group where car use per adult is falling fastest, but this group has also seen one of the fastest rises in public transport use (especially rail, plus Underground/Bus in London).
- There are also growing spatial differences in travel patterns. Per capita car use has fallen most slowly in rural areas, but has fallen most sharply in London which has also seen the greatest rise in individual use of modes other than the car.

The main purpose of the research was to identify trends rather than the causes behind them, but indications are that attitudinal factors are becoming increasingly significant as drivers of travel. The ITC's 2015 attitudinal research indicated that cars are increasingly viewed as 'appliances not aspirations', especially by young people, while public transport is being seen more favourably.

These findings should help policy makers in determining their policy and investment priorities. The ITC also believes that further research is now needed, particularly into the causes of these changing travel trends, and analysis should also explore issues around the growth in van travel.

I. Introduction

1.1 The Independent Transport Commission (ITC) is committed to researching the changing patterns of behaviour in road and rail travel in the UK. Our interest in this fundamental topic originated in the first 'On the Move: Road and Rail Travel Trends' study published in 2012 and authored by Dr Scott Le Vine and Professor Peter Jones, which used the National Travel Survey (NTS) to illustrate the dramatically changing travel trends in Britain over the period 1995-2007¹. This research demonstrated that road and rail travel trends were not behaving as the forecasting models had predicted, with per capita car travel much lower than estimated while the growth in rail travel had significantly exceeded expectations.

1.2 The original study focused on the period up to 2007 in order that the longer-term changes in travel patterns could be observed without being confused with the shorter-term impacts of the Great Recession which lasted from 2008-09 in the UK. With the publication of several years of new NTS data sets, the ITC believed it was timely to update that original study in order to investigate whether the recession and economic climate had caused any medium-term change in the travel trends identified, or whether these had actually been continuing. As a result the ITC commissioned experts Gordon Stokes and Peter Headicar to produce a technical analysis of the data². This policy-focused summary report accompanies the detailed technical report produced by the commissioned researchers and both documents should ideally be read in conjunction [the report can be downloaded from the following link:

<http://www.theitc.org.uk/wp-content/uploads/2016/11/OTM2-Technical-Report-FINAL.pdf>

The intention has been that we can help the Department for Transport develop improved forecasting methods and help policy makers better understand the future trajectory of these trends. These issues are of crucial importance given the massive investment that has been promised in transport infrastructure over the next few years, including the Government's road and rail infrastructure strategies.

1.3 One of the most significant transport debates in recent years has been whether we have reached limits to car travel. Most of the distance travelled by British residents is by car as a driver or passenger (78% in 2014) which remains the dominant mode of travel, with rail travel comprising 9% of mileage. Car travel rapidly increased in Britain since the Second World War until the mid-1990s, after which there has been a levelling off in average car driver mileage. This phenomenon has also been seen in other developed countries, and has led some commentators to suggest that we have reached 'Peak Car' (a situation in which there is no increase – and sometimes a decline – in car mileage per person, in spite of economic growth). The debate about whether or not we have reached an upper level in personal car use was one of the issues addressed in the ITC's original 'On the Move' study, which showed that underpinning this trend there were a range of changes in travel behaviours, with some groups using cars more and others less. The current report has been exploring travel trends in the context of this debate, to see whether the levelling off in car use has continued during and after the Great Recession.



- 1.4** It is important to note that the coverage of the NTS has changed over the intervening period since the publication of the original report. In particular, the devolution of data collection now means that the NTS only covers England, with Wales and Scotland now responsible for their own surveys. This has meant that, rather than simply update the original On the Move report, the data has in most places been recalibrated to look at trends in England only.
- 1.5** The report also focuses chiefly on per capita travel in England, rather than on aggregate travel. This is because the research is interested principally in the travel behaviour of individuals and how this might be changing. It is important to note this because while the total amount of travel might increase due to population growth, the travel each individual makes might at the same time be falling. The researchers have also looked mainly (but not exclusively) at per capita travel by distance, rather than the number of trips (trip rates). This is because changes in trip rates have already been extensively explored by the Department for Transport (in research advised by the ITC), and distance travelled offers a clearer picture of how travel changes at the individual level are likely to translate into travel volumes at an aggregate national level.
- 1.6** The purpose of this policy report is to highlight the key trends and draw attention to the policy implications of the findings. This is reflected in the report structure, where we begin by identifying the main findings, before exploring a number of crucial contextual issues that reflect wider debates, including the impact of the recession, the extent of modal shift, the evidence for intergenerational shifts in behaviour, and the spatial dimensions of these travel trends.

1 On the Move: Making sense of Car and Rail travel trends in Britain (December 2012):
<http://www.theitc.org.uk/docs/47.pdf>

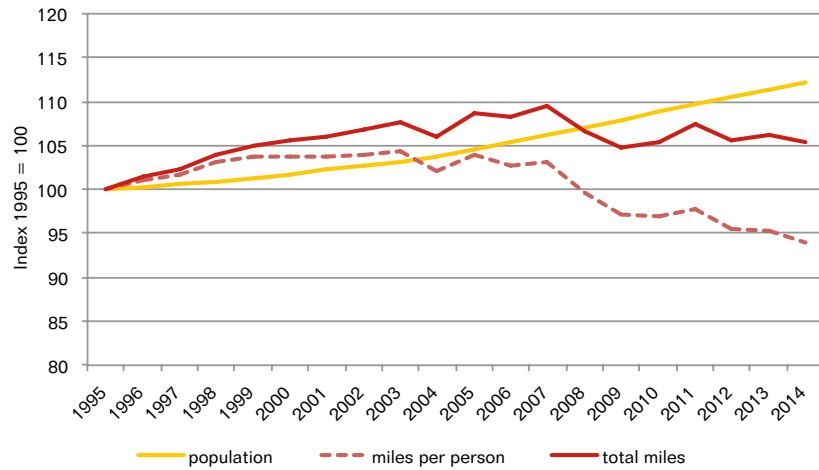
2 On the Move 2 – Making sense of travel trends in England 1995-2014: Technical Report (December 2016):
<http://www.theitc.org.uk/wp-content/uploads/2016/11/OTM2-Technical-Report-FINAL.pdf>

2. The Overall Trends

2.1

In terms of overall trends, the research has shown some striking changes in travel patterns over the period in question. Figure 2.1 explores travel in terms of aggregate distance travelled, and shows that the total miles travelled by residents reached a peak in 2007 before falling significantly and subsequently stabilising at a lower level. This was in spite of significant population increase over the period 1995-2014, up by more than 10%. As a result, per capita domestic travel in terms of distance travelled has been decreasing significantly over the past decade and is now 10% lower than in the mid-2000s.

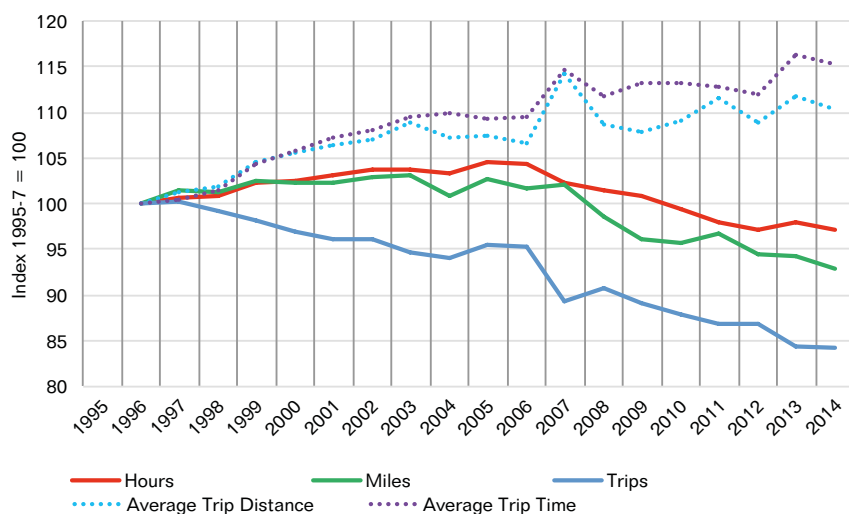
Figure 2.1 - Total miles (personal travel), population and miles per person England 1995-2014



2.2

The overall trends also demonstrate changes in the relationship between length, distance and number of trips. In Figure 2.2 it is evident that average trip distance and time has been increasing steadily since the mid-1990s, reaching a peak in 2007 before falling slightly, but then having recovered to reach a new peak. However, it is clear that each person is on average making significantly fewer trips today than in 1995, with trip rates falling 15% over the period in question. As a result, although UK individuals are making longer trips, they are making fewer of them, and this results in the gradual decline in per capita miles travelled (green line) and in time spent travelling (red line) seen below after 2006.

Figure 2.2 - Trips, distance and hours travelled per person, indexed 1995-2014*

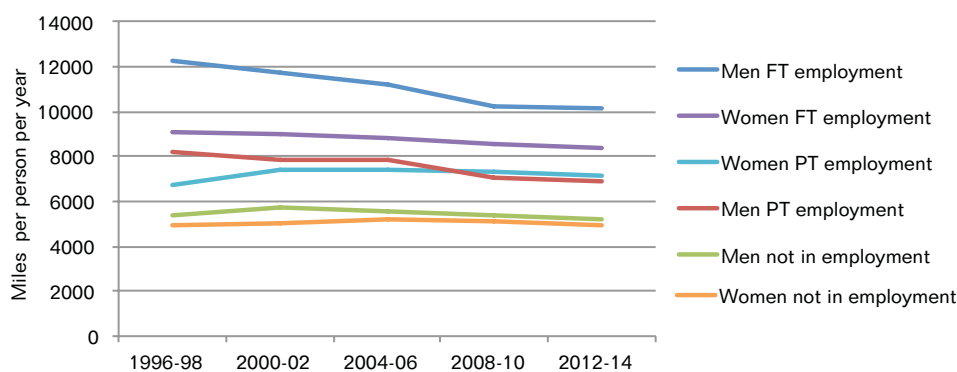


*Note: Because of the lower NTS sample size prior to 2002 the figures for preceding years are shown as rolling three-year averages

Who is travelling and why?

2.3 When travel trends are broken down by gender and employment status [Figure 2.3] we can see that men in full time employment travel the furthest, but their distance travelled has declined significantly since 1996. The distance travelled by men in part-time employment has also fallen, as has that of women in full time employment (although less so), while the distance travelled by women in part-time employment rose in the late 1990s and has since stabilised. Those not in employment, both men and women, travel the least.

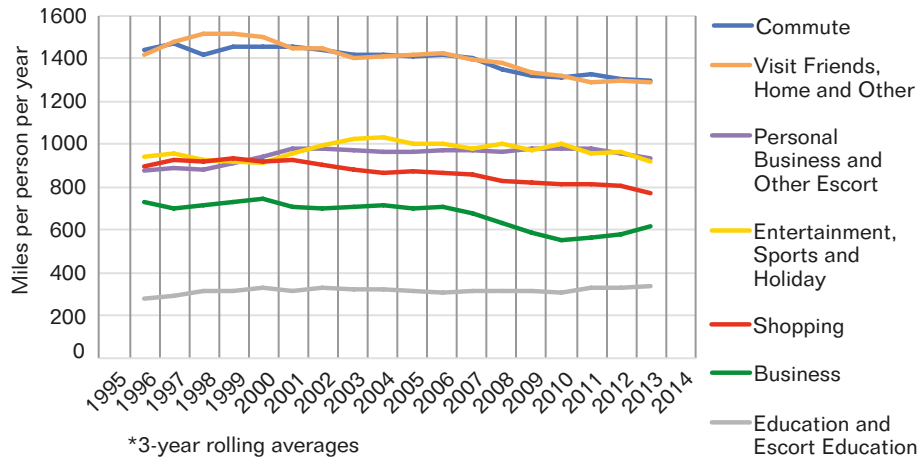
Figure 2.3 - Distance travelled per person per year by gender and employment status (all aged 16-74) 1996-98 to 2012-14



2.4

The ITC research has also probed changes by journey purpose and by main mode of travel. In Figure 2.4 we can see that over the past two decades we have witnessed striking changes in travel purposes. The distance travelled for commuting, visiting friends and family and shopping have been steadily declining, although business travel declined sharply at the time of the recession, but has since rebounded from a low in 2010. The distances travelled for other purposes have been more stable, with a slight rise in education-related travel over the period, as might be expected given the growth in the proportion of students within the population.

Figure 2.4 - Distance travelled per person per year by trip purpose 1995-2014*



How people travel

2.5

In Figure 2.5 it is evident that since 1995 the distance travelled per person as a car driver or passenger has been slowly declining, with a particularly significant fall in 2007-08. As a proportion of the average distance each person travels each year, car driving has decreased from 52% to 50% and travel as a car passenger from 30% to 28%. However, the distance travelled by non-car modes was steadily rising up and has since levelled off. These non-car modes are broken down in Figure 2.6 in which it is clear that much of this rise has been due to the rapid growth in distance travelled by rail. Some non-car modes have actually seen distances travelled fall, including walking, domestic air travel, motorcycling and long distance coach travel (the latter three categories are components of the 'other' category in the chart).

Figure 2.5 - Distance per person per year by car/van driver, car/van passenger and all other modes 1995-2014 (3-year average)

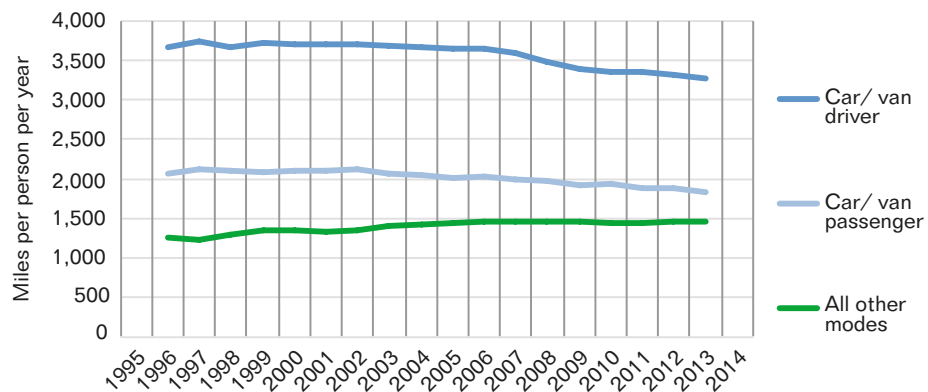
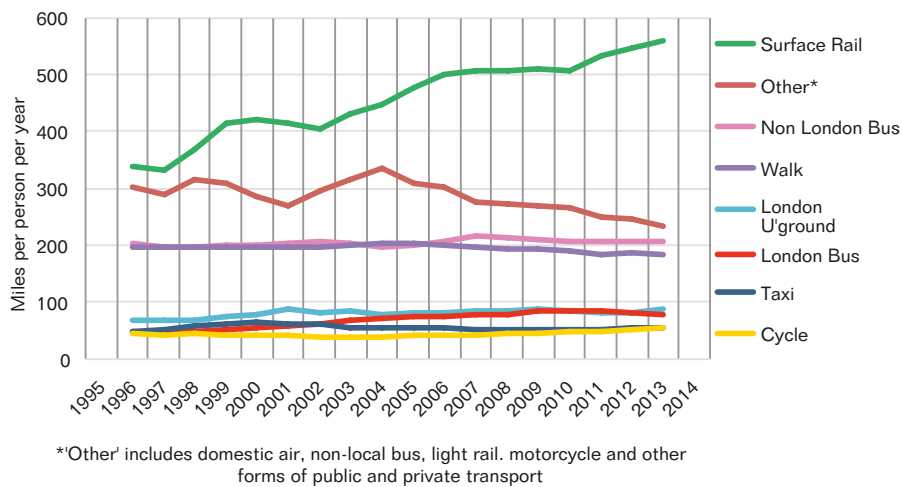
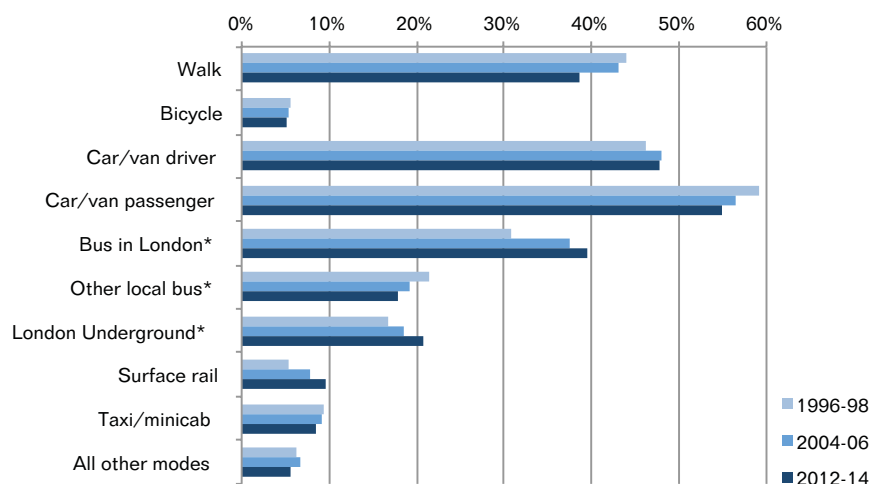


Figure 2.6 - Distance per person by individual non car modes 1995-2014 (based on 3-year averages)



2.6 These changes in non-car travel are explored from a different perspective in Figure 2.7, which shows the proportion of the population making a trip by each mode at least once in their NTS diary week, and compares the situation in 2012-14 with earlier results in 2004-06 and in 1996-98. Note that the London modal categories show the proportion of London residents using these modes, not the whole population. This chart demonstrates that the proportion of the population walking, being a car passenger, or using the bus (outside London) as the main mode for their journeys between 1996 and 2014 has been decreasing. However, the penetration of rail use has been rising sharply, together with substantial growth in the use of the Underground and bus travel in London over the same period.

Figure 2.7 - Proportion of the population using each main mode of travel at least once in their diary week: 1996-98, 2004-06, and 2012-14



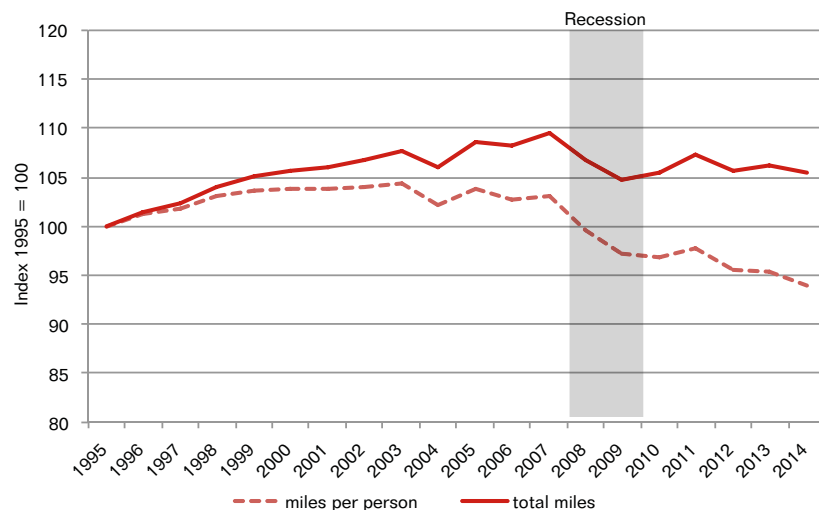
* within NTS diary week; London residents for London bus and underground, non London residents for other local bus

3. Income and Travel: What was the impact of the Great Recession?

3.1

Historically, travel patterns have been strongly affected by economic circumstances. Since World War II, the total distance travelled has normally increased during periods of economic growth, and stagnated or declined during recessions. What impact did the 'Great Recession' of 2008-09 (so termed because it was the most severe UK recession since World War II) have on overall travel trends? Figure 3.1 compares total miles travelled and miles per head in England over the past 20 years. This shows that total miles travelled increased steadily during the growth years of 1995-2007, but fell during the period of the recession. However, rather than stabilising or recovering in the years since to 2014, total distance travelled has levelled off, while miles per head has continued to fall. This suggests that the links between economic growth and travel are beginning to weaken.

Figure 3.1 - Total miles (personal travel) and miles per person in England 1995-2014



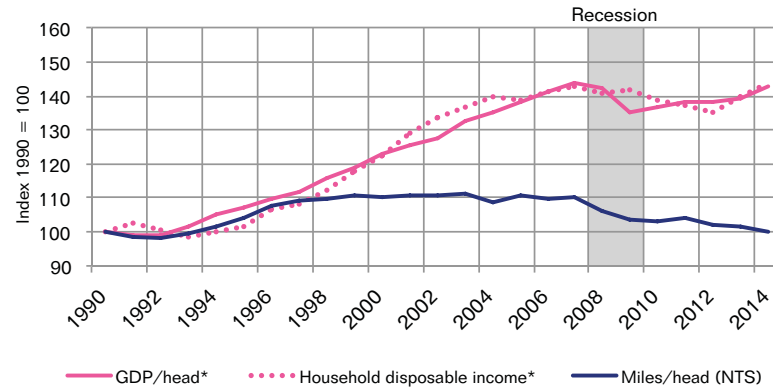
Are lower incomes causing people to travel less?

3.2

To explore this trend further, the ITC research compared travel patterns with personal incomes. As seen in Figure 3.2, disposable incomes increased significantly between 1995 and 2005 but have levelled off thereafter, only slightly beginning to recover in the last couple of years. However, a stagnation in total distance travelled can be observed between 1998 and 2008 since when there has been a 10% decline, suggesting that the established links between travel growth and personal incomes are also weakening.



Figure 3.2 - GDP per head (UK), mean household disposable income (GB) and miles per head (England) indexed 1990-2014



*ONS National accounts, net of inflation; incomes are equalised for household composition and since 1993 are for financial years

How are different income groups behaving?

3.3

It is well known that higher incomes are traditionally correlated with more travel. Has this been changing? In Figures 3.3 to 3.5 we see that surprisingly the difference in the car driver mileage travelled per person between the highest and lowest income quintiles has been narrowing, with the lowest three income quintiles driving a little more per person in 2014 than in 1995, and the two highest income quintiles driving less. Company car use has fallen precipitously amongst highest income drivers, but this has not resulted in this group using private cars more over the whole period. For rail travel it is evident that the highest income quintile travels much more by this mode than any other group, and their travel has been increasing. However, rail travel has also been increasing amongst all the other income quintiles over the same period, in spite of above inflation fare rises throughout the 1990s and 2000s.



Figure 3.3 - Private car driver stage miles per person per year by household income quintile 1996-98 to 2012-14

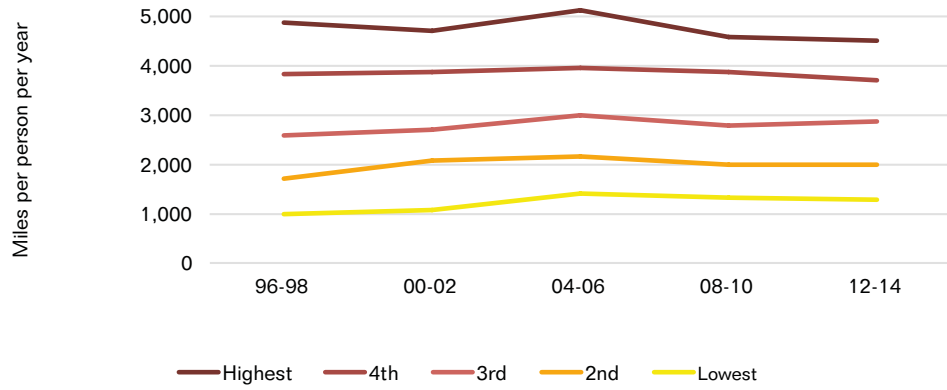


Figure 3.4 - Company car driver stage miles per person per year by household income quintile 1996-98 to 2012-14

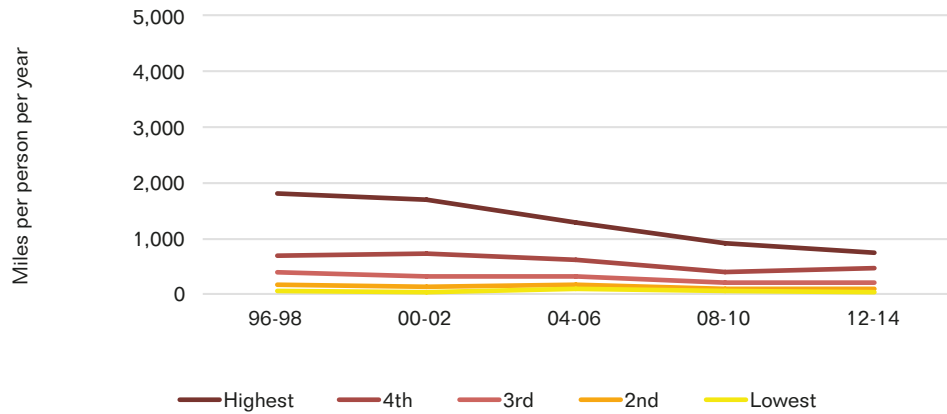
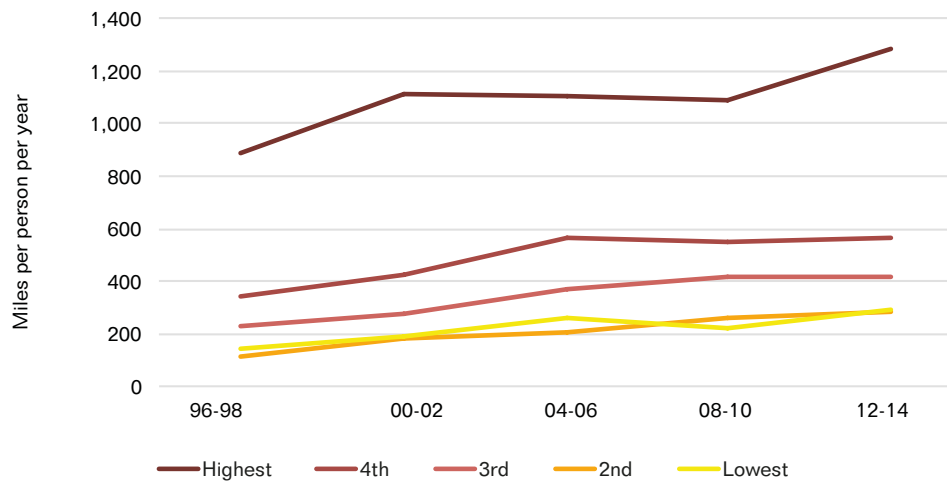


Figure 3.5 - Rail stage miles per person per year by household income quintile 1996-98 to 2012-14 (rescaled)



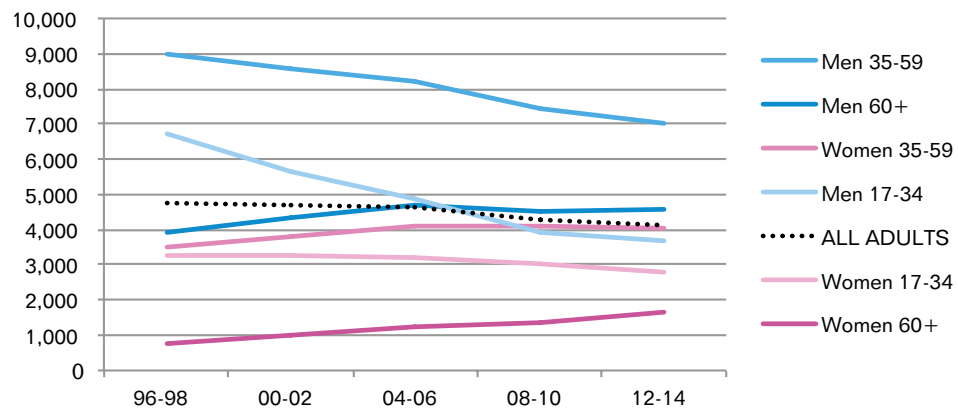
4.

Patterns of Car and Rail Use: How are demographics shaping travel?

4.1 Car remains the dominant mode of travel in the UK, but the proportion of travel undertaken in non-car modes is increasing, driven by growth in per capita rail travel. At the same time the evidence shows a levelling off in per capita car travel for the best part of two decades. Are people changing their travel habits, for instance, by substituting rail or other modes of travel in place of car driving?

4.2 Looking at car travel first, it is clear in Figure 4.1 that driver miles per adult each year have been falling significantly amongst men under 60, and this is a trend which has continued for almost 20 years. For younger men (17-34) the fall has been particularly steep. We know that licence holding has been declining amongst young men, and the pass rate for the driving theory test has also been falling for some years amongst this cohort³. At the same time the per capita distance driven annually by car has been roughly stable for men over 60 and women under 60. The only category where there has been a substantial rise in per capita car driving is amongst women over 60, as a higher proportion of this cohort becomes licence holders.

Figure 4.1 - Car driver miles per adult per year* by age and gender 1996-98 to 2012-14



*Based on the main mode of trips; fractionally less (<1%) than stage-based data. Note also that the per capita car driver mileage for 'all adults' in this chart differs from that shown 'per person' as those calculations include children

4.3 Travel can be measured in various ways, and by exploring these in depth it is possible to identify more clearly how car travel patterns are changing. In Figure 4.2 the car driver statistics are broken down by various measures of travel. From this it is evident that a much greater proportion of older women and men over 60 years are now making journeys as a car driver than in 1996-98 (with a smaller growth among older men), while fewer young men and women (34 or younger) are making such trips. For middle-aged people (35-59 years) men are making slightly fewer trips while women are making proportionally more car driver trips. However, the average miles travelled per trip has remained relatively stable, or shown a slight increase, depending

3 See DVLA Car Theory Test pass rate statistics:
<https://www.gov.uk/government/statistical-data-sets/drt5-driving-theory-tests>

on the population groups. Therefore, it is apparent that the slight decline overall in car driver miles travelled per person per year is due to fewer car driver trips being made, particularly by young people, rather than people taking shorter journeys.

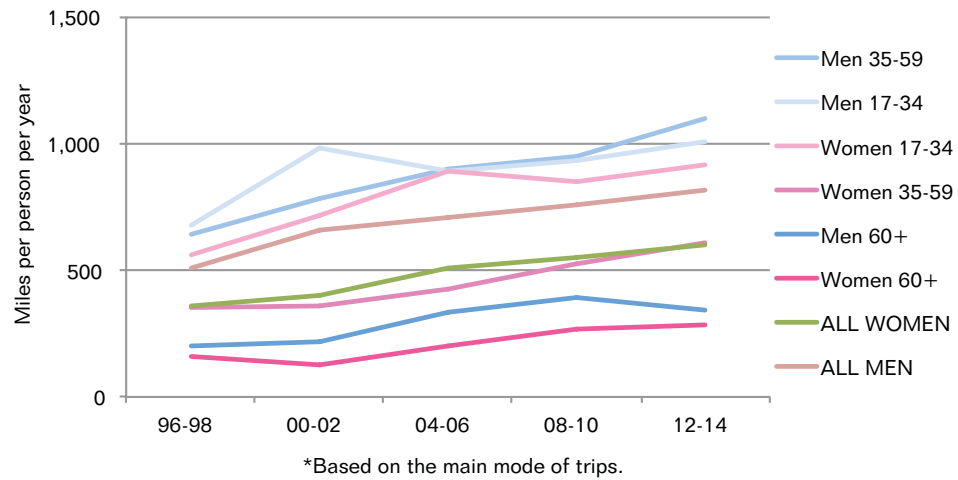
Figure 4.2 - Trip-making as car driver 2012-14 and change from 1996-98*

	% pop'n making trips		trips per year per tripmaker		miles per trip		miles per trip-maker per year		miles per adult per year	
	Dec-14	Change from 96/98	Dec-14	Change from 96/98	Dec-14	Change from 96/98	Dec-14	Change from 96/98	Dec-14	Change from 96/98
All Adults	61%	-2%	811	-15%	8.43	0%	6837	-15%	4106	-14%
Men 17-34	48%	-28%	725	-24%	10.4	-3%	7540	-26%	3626	-47%
Women 17-34	47%	-17%	783	-14%	7.6	19%	5951	2%	2757	-15%
Men 35-59	76%	-7%	833	-21%	11	4%	9163	-18%	6976	-24%
Women 35-59	67%	14%	916	-8%	6.5	10%	5954	1%	3992	15%
Men 60+	73%	19%	801	-8%	7.9	7%	6328	-2%	4592	17%
Women 60+	42%	99%	658	-1%	6	15%	3948	14%	1649	128%

* NB. increases are highlighted in blue, reductions in brown; note that darker shading signifies a larger change

4.4 The same analysis can be applied to rail travel trends. Figure 4.3 presents rail miles per adult per year and from this it is possible to discern a very different pattern from that we have seen for car driving. Figure 4.3 demonstrates that over the past 20 years we have seen significant growth in rail travel amongst both men and women of all ages. This growth has been strongest amongst middle-aged men and women, and the increase has continued strongly even after the Great Recession. However, rail miles per person per year have stagnated between 2004-06 and 2012-14 amongst older men (over 60) and young women (17-34).

Figure 4.3 - Rail passenger miles per adult per year* by age and gender 1996-98 to 2012-14



4.5 Figure 4.4 breaks down rail travel using various measures of travel. In this chart it is clear that the proportion of the population making trips has increased very substantially, whilst the number of trips made by each rail user has remained fairly constant. Strikingly, although children are making longer journeys, young men and women (17-34) and older men are actually making shorter average journeys by rail on average than in 1996-98. This suggests that the huge per capita growth in rail travel is chiefly attributable to a much higher proportion of the population using rail rather than to an increased frequency of travel by individual users or to longer average trip distances. Such an observation begs the question whether there is a natural limit to the percentage of the population that will travel by rail, and therefore an upper limit on the rapid growth in rail travel that we are currently experiencing.

Figure 4.4 - Trip-making by surface rail 2012-14 and change from 1996-98

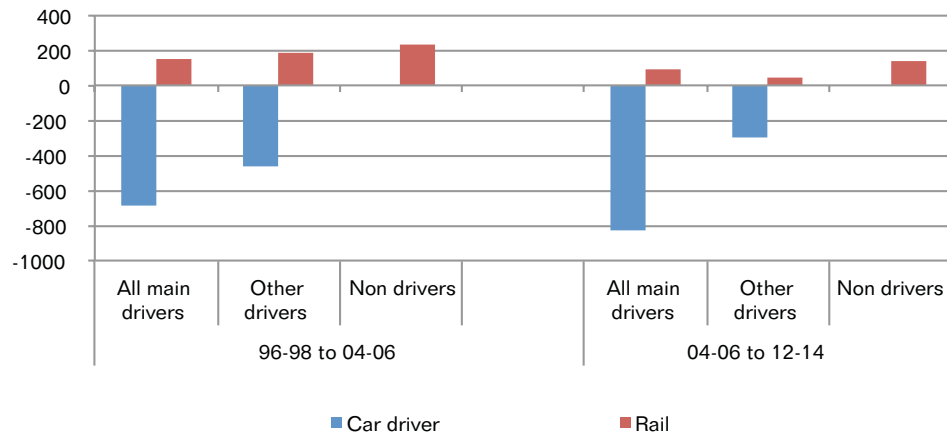
	% pop'n making trips		trips per year per tripmaker		miles per trip		miles per trip-maker per year		miles per person per year	
	Dec-14	Change from 96/98	Dec-14	Change from 96/98	Dec-14	Change from 96/98	Dec-14	Change from 96/98	Dec-14	Change from 96/98
All Persons	10%	79%	209	-2%	30.5	-5%	6381	-7%	617	68%
Children 0-16	5%	80%	164	-9%	21.8	54%	3575	40%	176	152%
Men 17-34	16%	79%	239	-1%	25.8	-19%	6166	-20%	1009	49%
Women 17-34	16%	91%	212	-5%	27.3	-10%	5788	-15%	913	63%
Men 35-59	12%	86%	251	-3%	36	-4%	9036	-7%	1102	72%
Women 35-59	9%	69%	199	-4%	32.6	5%	6487	1%	605	71%
Men 60+	6%	89%	161	12%	36.7	-25%	5909	-16%	340	71%
Women 60+	6%	55%	127	1%	39.6	6%	5029	7%	281	77%

* NB. increases are highlighted in blue, reductions in brown; note that darker shading signifies a larger change

4.6

Is it possible to identify one mode of travel being substituted for another through the NTS? It is not possible to analyse the switching of modes directly by individual, but the ITC research has compared the proportional change in car driver travel and rail travel in Figure 4.5. Between 1996-98 and 2004-06 it is apparent that that amongst drivers their increase in rail miles (155 miles a year overall) was the equivalent of 24% of their reduction in car driver miles. In the subsequent period to 2012-14 the proportion of the reduction in car driver miles that 'transferred' to rail was only 10%. This lower figure can be explained by a combination of a smaller increase in rail use by car drivers (an extra 81 miles a year) coupled with a faster decline in driving mileage.

Figure 4.5 - Change in car driver and rail miles per year by driver category 1996-98 to 2004-06 and 2004-06 to 2012-14



5. Is there an Intergenerational divide in travel behaviour?

5.1 One of the great social phenomena seen in recent years has been the rise of an intergenerational divide in Britain. This is most apparent in terms of income and wealth inequality when compared with previous generations, but is also manifest in travel behaviour. The original 'On the Move' study identified that the travel behaviour of young men was rapidly changing, with fewer holding licences, while at the same time pensioners were driving much more than in previous decades. The present study has been exploring whether those trends have continued.

5.2 The data indicates that the divergence between younger and older people is continuing to grow. Figure 5.1 demonstrates the way in which licence holding amongst both younger (under 34) men and women has fallen as proportion of their age group, although these falls were much more rapid in the period 1995-2004 than during 2005-14. At the same time there has been a continuing rise in the proportion of over-60s holding a driving licence, particularly so amongst older women.

5.3 Figure 5.2 demonstrates how behaviour has changed among younger and older groups who hold a car driving licence. The total distance travelled as a car driver each year has fallen significantly for men aged 17-34, and has also shown a much smaller fall for younger women (34 or under) in the period after 2004-06. For older people and pensioners, however, male drivers are still travelling as far as they did 20 years ago, while older women drivers have increased their mileage travelled. However, because these older groups travel much shorter distances overall, the effect of these trends is outweighed by the falling mileage amongst younger drivers.

Figure 5.1 - Proportion of adults 17+ with a driving licence by age and gender, 1995-2014

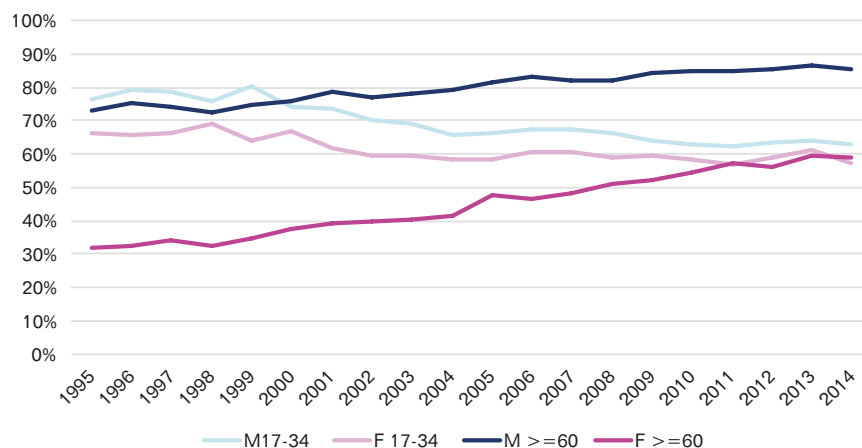
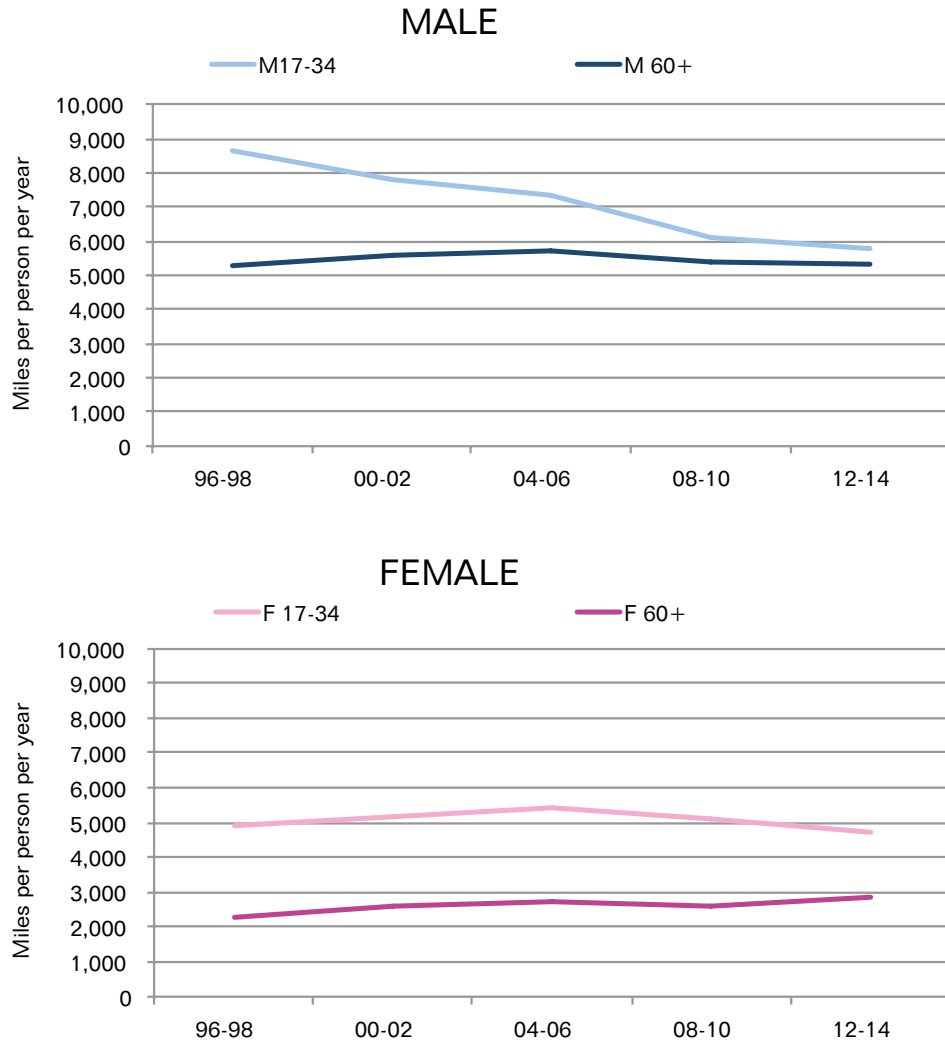


Figure 5.2 - Proportion of adults 17+ with a driving licence by age and gender, 1995-2014

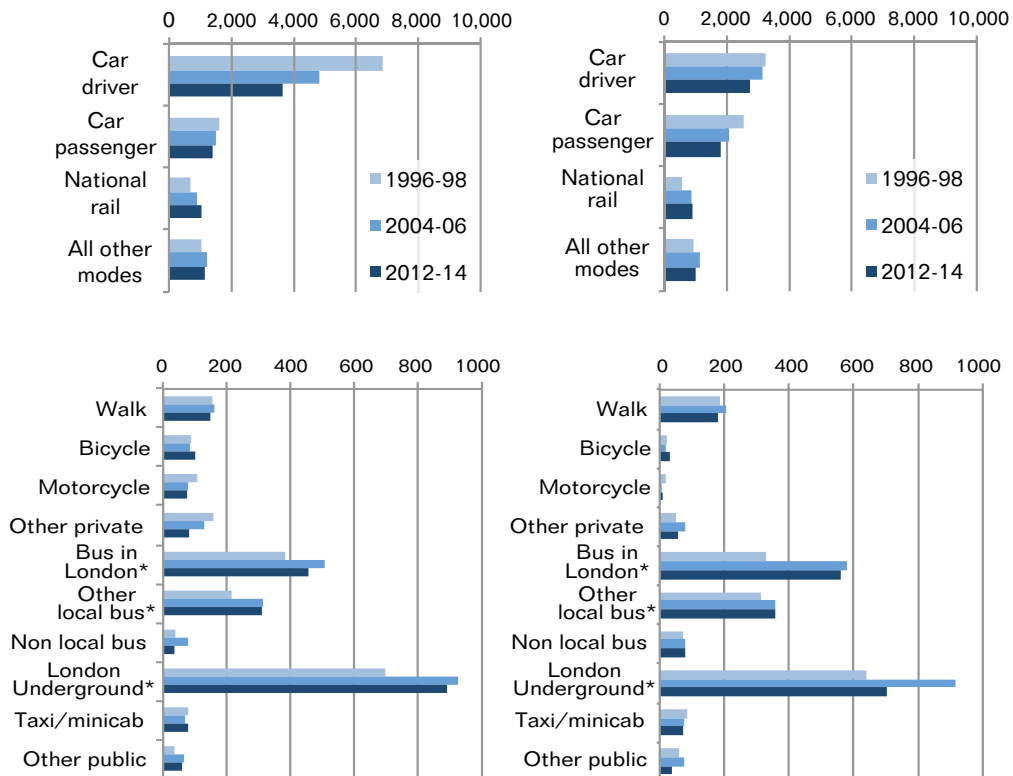


5.4 Is it also possible to find intergenerational difference in travel patterns in other modes besides the car? Looking at modal habits, we can see some striking changes among young people's travel choices in Figures 5.3 and 5.4 which show distance travelled per person per year across a wide variety of modes. The data reveals that younger men and women are much less likely to travel by car as a driver or passenger than 20 years ago, while rail travel has grown. Young people in London are also using the bus and the Underground much more, while motorcycling and walking have seen declines in per capita distance travelled. This suggests that younger people today are increasingly relying on public transport for their travel when compared to previous generations, and are much less wedded to the car.

Figure 5.3 - MEN 17-34 Travel
by main mode of trips: 1996-98,
2004-06 and 2012-14

Figure 5.4 - WOMEN 17-34
Travel by main mode of trips:
1996-98, 2004-06 and 2012-14

Miles per person per year



*London residents for London Bus and U'grd; residents elsewhere for other local bus

*London residents for London Bus and U'grd; residents elsewhere for other local bus

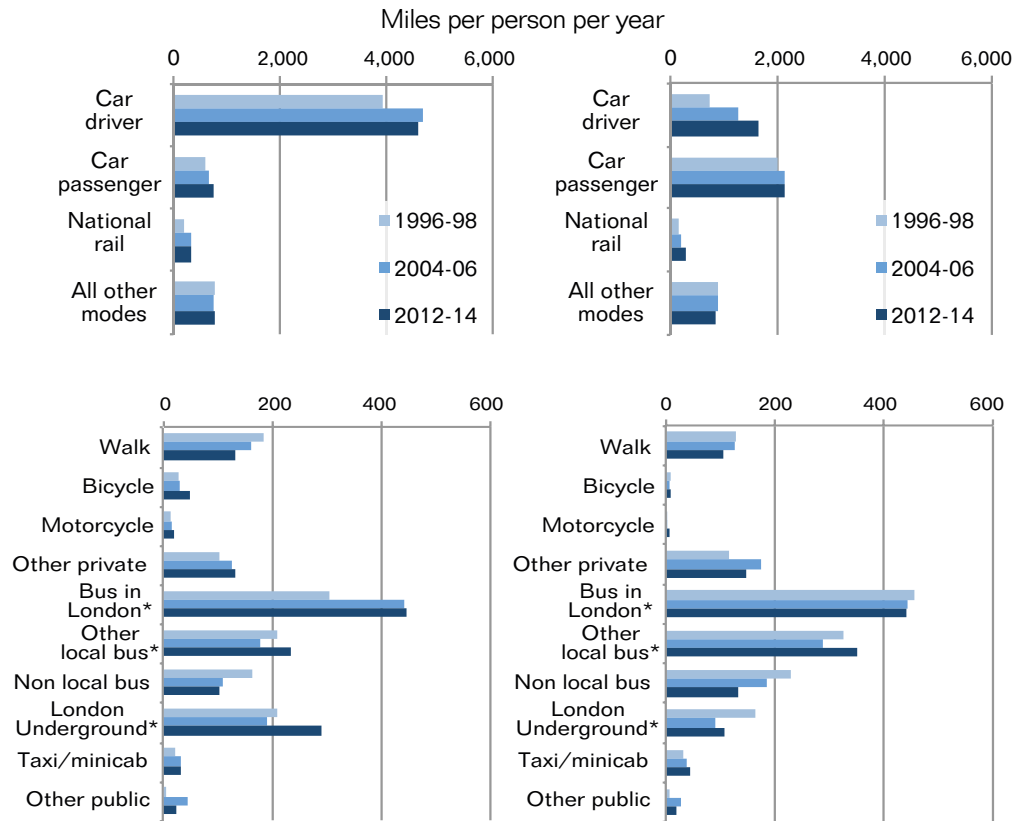
5.5

How does this compare with travel trends amongst older people (over 60)?

Figures 5.5 and 5.6 plot distance travelled per capita for this group across a wide variety of modes. The charts show striking contrasts in the travel trends by older people. Figure 5.5 reveals that older men saw a rapid rise in car driving mileage between 1996 to 2006, but that growth has now stopped, while it has continued to rise for older women [Figure 5.6]. Local bus use by older people has remained constant or risen slightly, perhaps helped by the concessionary fares scheme, but longer-distance travel by coach has fallen. The distance travelled by walking per capita has decreased amongst older men and women, but there have been rises in taxi use.

Figure 5.5 - MEN 60+ Travel by main mode of trips: 1996-98, 2004-06 and 2012-14

Figure 5.6 - WOMEN 60+ Travel by main mode of trips: 1996-98, 2004-06 and 2012-14



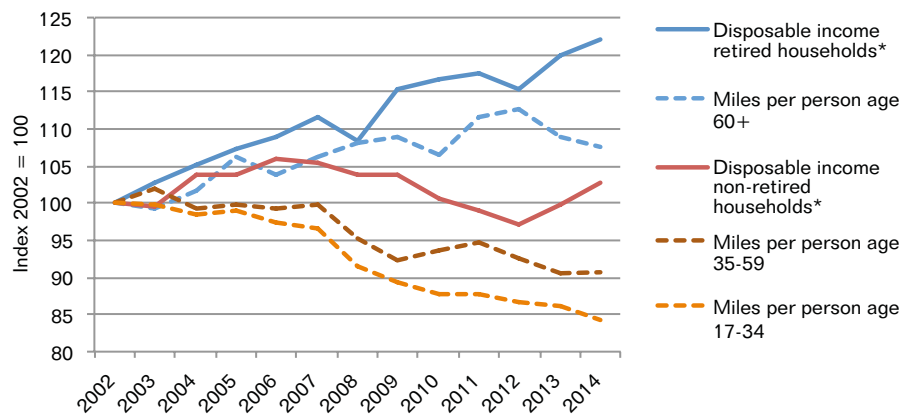
*London residents for London Bus and Ugrd; residents elsewhere for other local bus

*London residents for London Bus and Ugrd; residents elsewhere for other local bus

5.6

To what extent are these intergenerational differences related to changes in relative incomes and affordability? Figure 5.7 plots overall travel trends against changing disposable incomes over the past 20 years. This reveals that the real disposable income of retired households has risen very substantially over this timeframe, and at the same time the distance travelled by older people has been growing significantly, although there has been a slight fall since 2012. For non-retired households disposable incomes have fallen since 2006 with a slight rebound since 2012. However, the distance travelled by both middle aged and younger people has continued to fall very significantly.

Figure 5.7 - Household mean disposable incomes and travel distance per adult by age group indexed 2002-2014



*Source: 'Living Standards, Poverty and Inequality in the UK: 2014' Institute for Fiscal Studies, July 2014

5.7

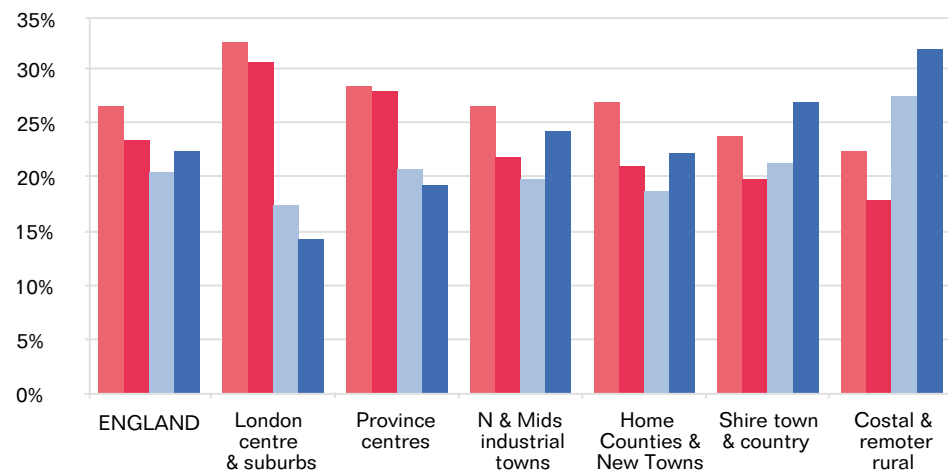
From this data it is possible to conclude that a combination of factors is now affecting the prospects and circumstances of the Millennial generation (those born since 1980) in a way that differentiates them from previous generations. Possible factors that could be influencing changing travel behaviour include the shortage of secure employment, stagnant wages for younger people, high student debt, unaffordable housing costs, particularly in London and southern England, and a reliance therefore on shared living accommodation and the postponement of marriage and parenthood. All these issues combine to create a much less financially secure life for younger people than in previous generations. Coupled with declining levels of car ownership and licence holding, the deferment of various life landmarks is resulting in a car-oriented existence becoming less common amongst younger people, and also if it occurs it is happening later in life than for the previous generation.

6. Cities, Towns and Rural Areas: does where people live affect their travel?

6.1

The original 'On the Move' study identified that travel patterns in Britain varied depending on whether people lived in cities, towns or rural areas. Between 1994 and 2014 there has been substantial population growth in London and, to a lesser extent in other cities and metropolitan areas, reversing several decades of decline. There has also been an important shift in the age composition of these places. Figure 6.1 below indicates how younger people are much more likely to live in urban areas, particularly London, and older people (over 60) in shire towns and rural areas. This trend has increased in recent years, with older people in shire towns and rural areas now representing a much higher proportion of the population than was the case 25 years ago.

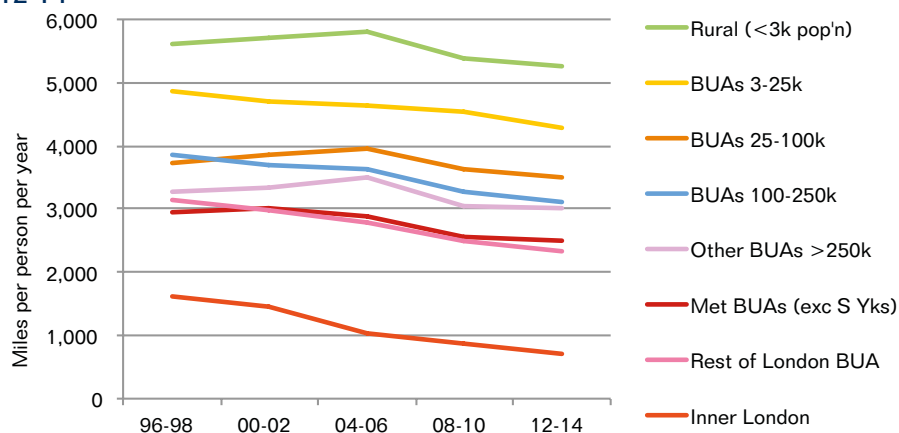
Figure 6.1 - Proportion of young adults and older people in different types of settlement



6.2

When we plot travel changes against settlement size in Figure 6.2, the ITC research has demonstrated that per capita car driver travel has fallen most slowly in rural areas, with the steepest declines in London and our largest cities. This is to be expected, since car dependency is highest in rural areas, and the availability of alternative modes there, particularly public transport, is much more restricted. What is perhaps more surprising is that overall, car driver miles per person per year have also been slightly declining in rural areas – due in part to the growing concentration of older people who on average drive less per year than younger groups.

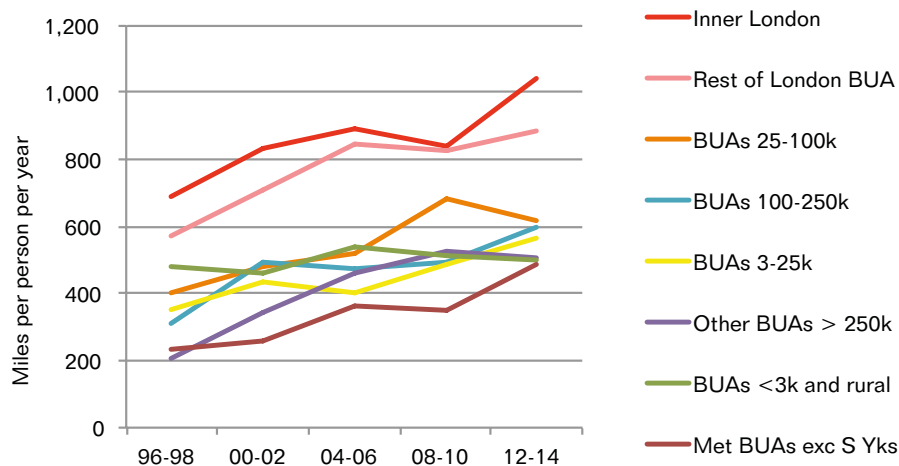
Figure 6.2 - Car driver travel* by size of Built-Up Area (BUA) 1996-98 to 2012-14



*Based on main mode of trips

6.3 In terms of non-car travel, a different pattern emerges. For rail travel, as seen in Figure 6.3 it is evident that surface rail travel has increased in all areas in terms of distance travelled, but is highest in London. Rail travel is also rising rapidly in other large metropolitan areas, albeit from a low base. Uniquely, rail travel in rural areas has remained fairly stable and has not increased significantly between 1996 to 2014, though it should be noted that the option of rail travel in many rural areas is limited or non-existent.

Figure 6.3 - Surface rail travel* by size of Built-Up Area (BUA) 1996-98 to 2012-14

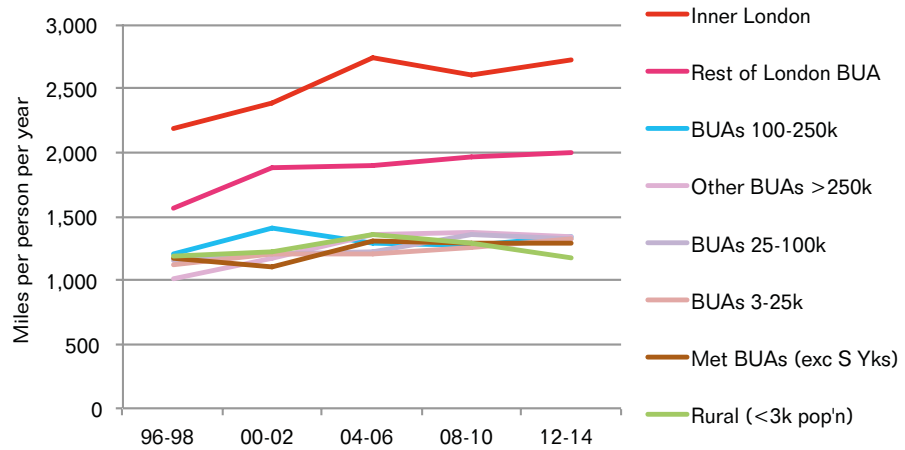


*Based on main mode of trips: excludes light rail

6.4

The London effect is also evident in bus travel. While bus usage has been falling significantly in many areas outside London, within London bus patronage increased strongly between 1995 and 2007, and much more slowly after the Great Recession (a trend Transport for London attribute to a slowdown in the provision of new services). Overall bus passenger kilometres travelled in London increased from 10 billion to 20 billion between 1995 and 2014⁴. London has also seen strong growth in the usage of its expanding light rail, Underground and Rail Overground systems over the same period. These trends explain the stark difference in non-car usage in London when compared with settlements elsewhere. Outside of London, as seen in Figure 6.4, the collective travel by modes other than car is strikingly similar despite different settlement types/size.

Figure 6.4 - Travel by non-car modes* by size of Built-Up Area (BUA), 1996-98 to 2012-14



*Based on main mode of trips

4 See Transport for London travel statistics, 2015, p.5
<http://content.tfl.gov.uk/travel-in-london-report-8.pdf>

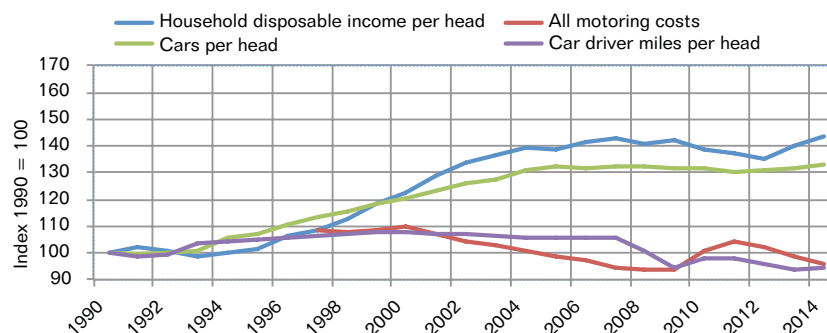
7. Possible Causes of Changes in Travel Patterns

7.1 Although the purpose of the ITC study has been to explore travel trends rather than the causes of those trends, it is worthwhile considering some of the possible drivers of the changes in travel behaviour that have been identified.

7.2 As has been seen in Section 3, the Great Recession does appear to have been responsible for a fall in distance travelled, but more striking has been the continuing fall in travel in the years afterwards. Whereas after previous recessions travel started to climb strongly again immediately after the recession in line with economic growth, that effect appears to be much less evident this time. In addition, it is apparent that disposable household incomes of working people have stagnated over the last decade, with rising incomes only in retired households, but that (as shown in Section 5) the correlation of travel distance with incomes appears to be weakening in recent years. Thus, curiously the cost of travel does not seem to have had as great an impact as might have been expected. Motoring costs (including the purchase costs of vehicles) have declined slightly in real terms over the past 10 years (see Figure 7.1) but this has not resulted in significant growth in per capita car travel. In contrast rail fares have increased by 25% in real terms since 1995 but this has not resulted in a slowdown in the rate of rail travel growth.

7.3 Figure 7.1 explores how trends in motoring costs have compared to car ownership per head and per capita car driver miles over the past 20 years. This reveals that car purchases have continued to match household disposable income trends over this time. Motoring costs, however, have remained stable in real terms (i.e. excluding inflation), and have become more affordable in relation to disposable incomes. Yet although people now own more cars per head than 20 years ago, it appears that they not driving them as much as in the early 1990s.

Figure 7.1 - Mean household disposable income, all motoring costs, cars per head (GB), and car driver miles per head (indexed 1990-2014*)



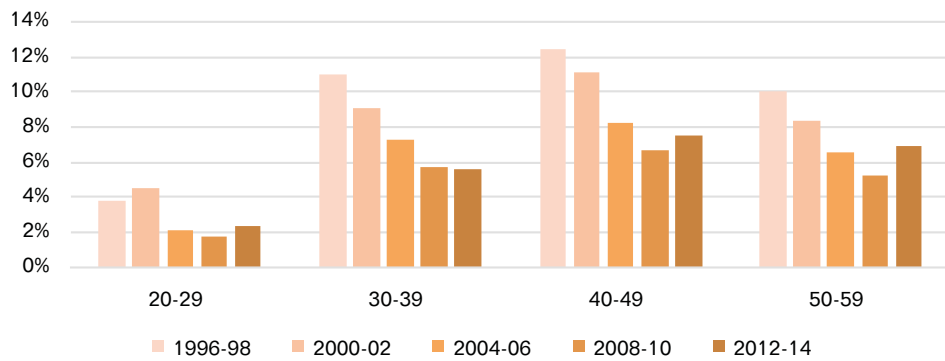
*Income and costs are net of inflation. Incomes are equalised for household composition. 'All motoring costs' includes vehicle purchase and maintenance. The costs series begins in 1997; values in that year are set equal to the income series.

Sources: Household disposable income per head: ONS National accounts; All motoring costs: TSGB 0122; Cars per head: TSGB VEH 0102; Car driver miles per head: NTS England

7.4

What might be responsible for the levelling of per capita travel by car? In the original 'On the Move' report, the researchers identified falling company car use due to tax changes as a significant factor in the reduction in per capita car travel amongst men. However, in the period since 2006 it is apparent that the company car effect has diminished. Figure 7.2 shows that the percentage of men with company car access has actually begun to rise slightly in recent years, particularly amongst older age groups. This suggests that it is actually falling private car usage per person that is increasingly responsible for the fall in per capita car travel.

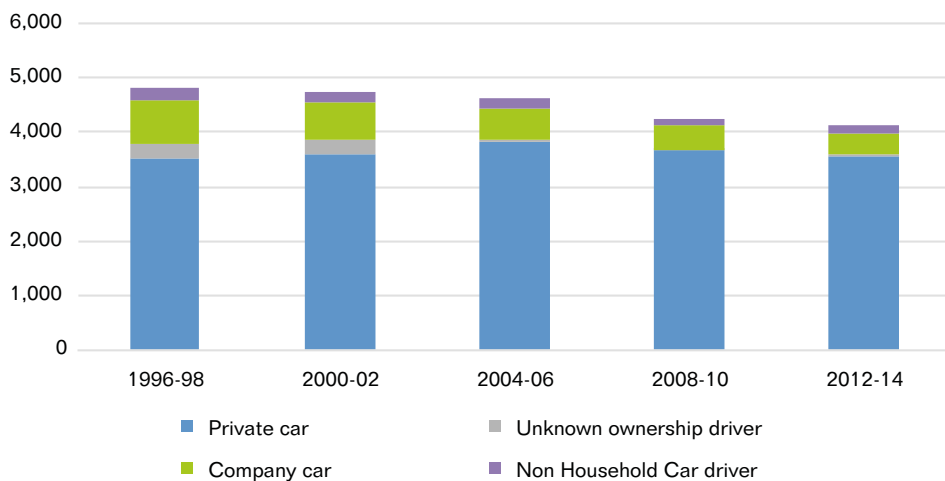
Figure 7.2 - Percentage of men by age with company car access 1996-98 to 2012-14



7.5

In Figure 7.3 it is possible to see the impact of this change on overall driver miles per person. Until 2008-10 the reduction in company car usage made a significant contribution to falling driver miles per adult per year. However, since the Great Recession the fall in company car use appears to have stabilized and declining private car usage is now having more of an impact on the overall fall in per capita car driving.

Figure 7.3 - Driver miles per adult per year by type of car ownership 1996-98 to 2012-14

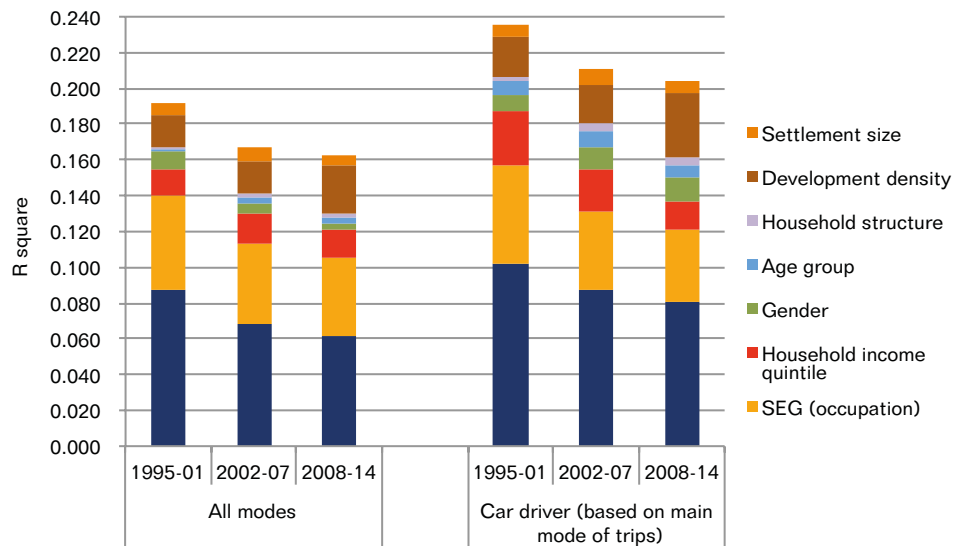




7.6

The ITC researchers conducted a regression analysis⁵ to explore the relative influence of various socio-economic and spatial variables on total distance travelled and car driver mileage per person of working age between 1995 and 2014. The results are shown in Figure 7.4. Strikingly, changes in the balance of age groups, gender, settlement size and household structure over this period appear to have had only a very minor influence. Much more important have been economic factors, especially employment status and occupation in determining people’s propensity to travel and drive. These factors combined leave over three quarters of the variation in personal mileage unexplained. All this suggests that the source of most of the change in per capita travel has to be found in genuine changes in individual travel behaviour.

Figure 7.4 - Influence of socio-economic and spatial variables on distance travelled per adult aged 16-74, 1995-2001, 2002-07 and 2008-14*



*See technical report for explanation

7.7

A key result of this On the Move 2 research is that per capita travel by car continues to decrease especially among young men. This has demonstrated that the attitudes explored in the ITC’s earlier research⁶ work are continuing and are confirmed by more recent studies⁷. Of course attitudinal changes can never provide the whole explanation but these are important contributing factors translating into new patterns of travel behaviour. A brief summary of the findings from the ITC’s attitudinal research is given below.

5 The analysis estimates statistically the degree to which observed changes in a dependent variable (eg. distance travelled) can be accounted for by changes in a set of ‘explanatory’ variables (eg. age, income). The R2 values give a rough indication of the proportion of the change in the dependent variable that can be associated with each explanatory variable. For more details of this analysis see ITC, G Stokes and P Headicar, On the Move 2: Technical Report, Section 6.7 . Regression is a statistical measure used in finance, investing and other disciplines that attempts to determine the strength of the relationship between one dependent variable (usually denoted by Y) and a series of other changing variables (known as independent variables).

6 Social Research Associates (2015) On the Move: Exploring Attitudes to Road and Rail Travel in Britain (Independent Transport Commission & ORR): <http://www.theitc.org.uk/wp-content/uploads/2015/07/ITC-ORR-Road-Rail-Attitudinal-Report-Final.pdf>

7 See, for example: DfT (2015) Public attitudes towards train services: results from the February 2015 Opinions and Lifestyle Survey; <https://www.theguardian.com/cities/2015/apr/28/end-of-the-car-age-how-cities-outgrew-the-automobile> ; Schroeders Talking Point (2015) <http://www.schroeders.com/en/SysGlobalAssets/digital/insights/pdfs/m-the-end-of-the-road.pdf>

Summary of ITC attitudinal research findings

- Cars are increasingly viewed as 'appliances not aspirations' especially by young people.
- As public transport has improved there is a growing body of understanding of travel options. This also impacted on older age groups who although continuing to drive are also using public transport and even beginning to make residential choices which have good public transport links.
- The critical mass created by the growth in urban population enables many of these attitudes to be translated into new and attractive commercial offers.
- Use of technology for communication and work whilst travelling is easier and safer by non-car modes including rail and increasingly bus.
- For business travel there is some travel substitution by home working and video conferencing but this does not seem to result in less travel overall – rather it leads to wider networking and there is still a strong desire for face-to-face meeting.
- There is a growing disconnection between car ownership and car use leading to a wider use of alternatives including vehicle and journey sharing.



8. Conclusion: the relevance to policy making

- 8.1** This research has raised a number of important questions for policy makers. The first issue relates to the future trajectory of travel trends. The continuing patterns of a levelling off in car travel begs the question whether growth in per capita car travel has ended? And will the growth in rail travel reach a natural limit? If we take the finding that the growth in rail travel is due to a higher percentage of people travelling, rather than existing travellers making more journeys or travelling further, this suggests there could eventually be an upper limit to this growth associated with maximum market penetration. On the other hand, we know from ITC research elsewhere (our Why Travel? project) that the desire to travel is not simply a derived demand, so there may be a great deal of scope for increased future demand.
- 8.2** These findings should help policy makers in determining their investment priorities. The growth in overall road traffic appears to be due to population growth rather than a rise in per capita car travel. Meanwhile, the continued growth in rail travel appears to support the need for an extensive rail infrastructure investment programme to prevent overcrowding. However, it is also clear that rural communities are still very car dependent, and it is in these areas where public transport provision is limited that roads provision and meeting the needs of the minority without car access is particularly important.
- 8.3** The intergenerational differences in travel suggest that, for younger people in particular, transport is seen increasingly as a service rather than something that requires ownership of assets. This backs up our previous research that shows a much more utilitarian attitude to car travel by younger people in recent years. The rise of non-car travel suggests that opportunities exist for intermodal pricing and payment strategies that could benefit passengers and encourage public transport use further afield. This is being explored in a new ITC project as part of our 'Technology and Travel' work stream.
- 8.4** The findings also indicate the importance of joining up policy making in transport with other policy areas. A key current issue surrounds housing construction, given the widely accepted need for increased housebuilding to keep up with demand for accommodation and deflate the house price bubble. However, the location of these new developments will have a major impact on future patterns of travel demand, and in determining the extent to which this is car based. Careful site selection and adequate investment in accessibility by public transport and on foot and cycle should be a priority in new developments, especially outside those areas where current provision is good, such as in London.

8.5

A further issue relates to travel and health: active travel (including walking and cycling) is known to improve fitness levels, and promoting this can help to reduce obesity-related illnesses and the burden on the NHS. With walking continuing to decline this suggests that more needs to be done if the Government is to achieve its aim of increasing physically active (i.e. healthy) travel. Finally, it is important to acknowledge a link between the decline in car use and the many policy initiatives by both national Governments and Local Authorities over the past ten years designed to encourage sustainable travel. There is clearly scope for these to continue to be used to influence travel choices in a world in which no one doubts the threats from congestion and to the environment.

8.6

This work has also demonstrated the need for further research in order to understand better these changing travel trends. First, we need to determine the likelihood of continuing growth in rail travel, and particularly whether there might be an upper limit on the percentage of travellers using this mode. Second, there is a case for exploring the reasons for the decline of local and long-distance bus travel, except in London, and to explain this divergence. Third, there are still gaps in our understanding of the impact of van travel trends. Although road traffic estimates indicate that van travel has rapidly increased in recent years, ITC research has shown that there are problems due to a lack of data in analysing the estimated data that is available due to different definitions about what constitutes a van. Is the fall in private travel for shopping uncovered in this report matched by an increase in travel caused by the deliveries of goods bought online?

8.7

Finally, we also need to understand more clearly whether the levelling off in personal car use that has been identified through this research is likely to continue in the future. What, for instance, might be the impact of increasing automation of car travel, allowing us to use the time spent in our cars more effectively? The ITC supports further exploration of these issues and will be addressing some of them through our own future work.



Further Reading

This report forms part of the ITC's On the Move: Road and Rail Travel Trends research project. We recommend that it be read in conjunction with the other published reports in this series, which include:

- **On the Move: Making sense of Car and Rail travel trends in Britain**
by Peter Jones & Scott Le Vine (ITC, RAC Foundation, Office of Rail and Road and Transport Scotland, December 2012):
<http://www.theitc.org.uk/docs/47.pdf>
- **On the Move: Car, rail and bus travel trends in Scotland**
by Peter Jones, Scott Le Vine, John Polak & Charilaos Latinopoulos (ITC, RAC Foundation, Office of Rail and Road, and Transport Scotland, June 2013):
<http://www.theitc.org.uk/docs/102.pdf>
- **Van travel in Great Britain: What do we know from the National Travel Survey?**
by John Polak & Scott Le Vine (ITC, October 2013):
<http://www.theitc.org.uk/docs/111.pdf>
- **On the Move: Exploring attitudes to road and rail travel in Britain**
by Social Research Associates (ITC and Office of Rail and Road, July 2015):
<http://www.theitc.org.uk/wp-content/uploads/2015/07/ITC-ORR-Road-Rail-Attitudinal-Report-Final.pdf>
- **On the Move 2: Making sense of travel trends in England, 1995-2014. Technical Report** by Peter Headicar & Gordon Stokes (ITC, December 2016):
<http://www.theitc.org.uk/wp-content/uploads/2016/11/OTM2-Technical-Report-FINAL.pdf>

Other relevant publications likely to be of interest include:

- **National Travel Survey: 2015 report**
(Department for Transport, September 2015):
<https://www.gov.uk/government/statistics/national-travel-survey-2015>
- **Travel in London: Report 8**
(Transport for London, 2015):
<http://content.tfl.gov.uk/travel-in-london-report-8.pdf>
- **Passenger Rail usage statistical releases**
(Office of Rail and Road, released quarterly):
<http://orr.gov.uk/statistics/published-stats/statistical-releases>



Notes



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Independent Transport Commission
70 Cowcross Street
London
EC1M 6EJ

Tel No: **0207 253 5510**
www.theitc.org.uk

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