RAC Foundation

Generation Next

The changing travel habits of pre-driving age young people in Britain

Qinyi Chen, Scott Le Vine and John Polak
Centre for Transport Studies, Imperial College London
October 2014

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About the Authors

Qinyi Chen holds an MEng (Civil and Environmental Engineering) from Imperial College London, and an MSc (Engineering with Innovation and Entrepreneurship) from University College London. The research reported in this report was undertaken by Qinyi during a research placement at Imperial College London's Centre for Transport Studies, sponsored by the RAC Foundation.

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Disclaimer

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Foreword

Any parent will be familiar with the phrase “the taxi of mum and dad”. A large and seemingly growing part of parenthood involves running children here and there.

But what is the reality of how our pre-driving age teens get out and about? Are they increasingly reliant on mother and father? Or are they already independent, travelling by bus and taxi, on foot and on their bikes?

When they do travel and where do they go? What is the purpose of the journey?

These are not just academic questions. They are crucial to the way we shape several areas of public policy. In health, we see there is an uphill struggle to keep people fit and combat obesity. In transport, these questions are relevant both to road safety professionals and as a potential indication of how these teenagers will find mobility when they are old enough to drive.

Core to the transport decisions of the young are finances. Do young people – in the context of this report aged 16 and under – have employment? Will they have enough money to learn to drive when they are old enough?

For many young people – those below 17 and those above it – the recession came well before 2008. Their economic decline has been going on longer that for the population as a whole.

There has been much speculation as to the impact of social media and a supposed cultural shift away from the car, led by the young. And it is true that for those in their 20s car travel has been waning. But a contrary situation exists for 11-16 year olds, interestingly. They are being driven about more.

This report examines these questions, and highlights areas that up until now have not been closely examined. To help us know about the drivers of tomorrow, we need to know about the passengers of today.

Professor Stephen Glaister

S. Glaister.

Director of the RAC Foundation

Executive Summary

This study establishes trends in the personal mobility of British teenagers below the minimum driving age (age 11-16 years) between the mid-1990s (1995/7) and late 2000s (2008/10).

During this period of time there were great changes in how and how much young adults (defined here as ages 17 to 29) travel, most notably a sustained drop in driving – beginning many years before the onset of recession in 2008. Some factors associated with this time trend have been identified, but why it has happened remains an open research question. The motivation of this study is to compare personal mobility trends between young people above and below the driving age.

The first main finding is that economic activity has fallen for both of these age groups of young people. For those aged 17 and older this is visible in increasing rates of participation in education and corresponding decreasing rates of employment. Earlier research (Le Vine and Jones 2012, Figure 5.2) showed that wages for people in their 20s fell in the 2000s, in contrast to older age groups. In this study it was found that this trend is also taking place for those who are below driving age and eligible for work, as evidenced by a falling level of work-related activity recorded in their travel diaries. This study contributes to the gathering body of evidence showing a structural divergence between the economic performance of younger and older Britons, beginning many years before the 2008 recession. This sheds new light on young people's falling levels of personal mobility.

The second main finding is one of a contrast between young adults and pre-driving age young people. Driving mileage by young adults has trended consistently downwards (-30%), and their car passenger travel has also fallen (-25%). Younger teenagers by definition do not [legally] drive, but here it was found that their car passenger travel increased (by 13%). Pre-driving age young people travel more by car today than they used to do, while the opposite is true for young adults above the driving age.

Young adults that hold a driving licence travel quite differently than those of the same age that do not – but the latter group's mobility more closely matches how and how much teenagers below driving age travel.

It was also found that young adults have been migrating to Britain's metropolitan areas, but that there has not been a similar shift in where pre-driving age young people live. In 2008/10, three quarters (77%) of pre-driving age young people' car passenger mileage took place in cars that belonged to a member of their household, but the corresponding figure for young adults of driving age was only half (51%). Unsurprisingly, young adults also travel much less mileage as a car passenger than pre-driving age young people do.

Pre-driving age young people' car passenger mileage is lower in households with non-working adults than where all adults work. It is lowest in households with no working adults.

This paper closes with suggestions for the future research agenda, including both fundamental research needs and the need to ensure that the emerging body of evidence regarding young people is incorporated into the techniques the Department for Transport uses to forecast future levels of road traffic.

1. Introduction

Since the 1990s there has been a structural shift in British young adults' travel – for the first time in the postwar era, the key indicators of car use have fallen. Fewer young people today hold driving licences and fewer own cars. On average young people – even those that have their own car – are driving fewer miles. As documented in ***On the Move*** (Le Vine and Jones 2012), this is quite different than the patterns exhibited by older adults.

This phenomenon was unanticipated but it is not a statistical blip – it coincides with wider changes in young adults' lives, and is borne out by evidence from a wide swathe of the developed world, not just in Britain (including the USA, France, Germany, Japan and Australia, cf. Kuhnimhof et al. (2012)). Although young adults continue to travel mainly by car, it is clear that relationships that once held are changing. Whether this carries on will have major consequences, well beyond transport-sector issues such as infrastructure provision, road safety, and car sales is yet to be seen. The implications extend much more widely – how labour markets work will be impacted, as well as questions such as care for older relatives that are increasingly ageing 'in place', and therefore generate travel by family members that look after after them.

That things have changed has been established beyond doubt, but the question of *why* remains very much a matter of debate. The range of theories that have been raised include:

1. Changing lifestyles (noted by Delbosc and Currie (2013) and Le Vine and Polak (2014)):
    a. deferred household formation;
    b. deferred child-bearing;
    c. longer periods of time before settling into stable careers; and
    d. greater tendency to rent rather than own one's home.

2. Heightened barriers to motoring (Shults and Williams [2013] and Le Vine and Jones [2012]):
    a. increasingly stringent driving licence acquisition regimes;
    b. rapidly-rising insurance premia; and
    c. increased costs of independent living, such as increasing house prices.

3. Shifts in attitudes and preferences (Sivak and Schoettle, 2013):
    a. rising environmental awareness;
    b. a growing preference for living in large cities; and
    c. the rise of online activity (particularly social networking), which some believe to be a substitute for travel.

However, although attention has focused on young *adults*, little is known about what has been happening among those below driving age. This paper aims to establish in very broad terms how and why pre-driving age young people (defined here as ages 11 to 16) get about in Britain today, and how this differs from in years past. The patterns of pre-driving age young people are also compared with how young adults travel – note that throughout this paper the terms 'pre-driving age young people' and 'young adults' refer to people aged 11–16 and 17–29 respectively. The main focus is on car passenger travel as it is car use that has changed the most for young adults, and other modes of transport are investigated to a lesser degree. It is worth pointing out that among adults aged 25+ living with pre-driving age young people, 18% of their car driving journeys are for escort purposes.

For most people, the minimum age at which one can drive in Britain is age 17. The main exception to this is those who receive the enhanced mobility rate of the Personal Independence Payment benefit (formerly the Disability Living Allowance). People receiving this benefit are eligible to drive at age 16.

These under-researched issues are important for their own sake, and also for shedding light on the striking shifts among young adults above the legal driving age. Changing travel patterns among young adults have broad policy implications, particularly if they prove to be durable as today's cohort transitions into middle age.

1.1 Data resources

This study draws on analysis of the British National Travel Survey (NTS) from the years 1995 to 2010. The NTS is based on a seven-day travel diary that is completed by all members of responding households. NTS data are collected in accordance with a rigorous sampling protocol and subsequently weighted to be nationally representative.

From 1995 to 2001 each year's NTS sample contains roughly 600 people aged 11 to 16, which increased to approximately 1,500 people in each year's sample from 2002 onwards. Throughout this paper results are presented in year groups (1995/7, 2000/2, 2005/7, and 2008/10); the larger sample sizes from combining years facilitate more refined analyses.

2. Overall trends in travel by pre-driving age young people and young adults

This section looks at young people's use of various forms of transport, beginning with how many miles they travel.

This is shown in Figure 2.1, and it can be seen that while young adults' car use has fallen over time, this is not the case for pre-driving age young people. Young adults are now (in 2008/10, the most recent period) driving fully 30% less than in the mid-1990s, and this has been a continuous trend over time – it is not simply due to the recession. There is also no evidence of their car use shifting to car passenger travel, which itself decreased by 25%, and in the aggregate their all-modes mileage has trended down period-on-period. By comparison, young adults walk about 230 miles annually on average, and pre-driving age young people roughly 270 miles, and both of these numbers have been stable over time[1].

That said, the time trend in car travel is quite different when pre-driving age young people are considered. Their car use is essentially all as a car passenger – but rather than decreasing over time, they are now travelling by car 13% more than in the mid-1990s. From the 2000/2 period their car passenger travel has been steady at approximately 2,900 miles per year. Their overall (all-modes) mileage has also been essentially flat in the 2000s.

So what can be concluded from Figure 2.1 is that the factors that have caused young adults to drive less (and also to ride less as a car passenger) have not been affecting pre-driving age young people' car use in the same way.

1 The National Travel Survey's most detailed classification scheme for methods of travel contains 20 categories. For the purposes of this report they have been grouped in the following manner: **Walking**, **Bicycle**, **Car driving** (cars and light vans), **Car passenger** (cars and vans/lorries), **Bus** (London local buses, other local buses, express buses, excursion/tour buses), **National Rail**, **Taxi/Minicab**, **Other private modes of travel** (motorcycle driver, motorcycle passenger, private [hire] bus, other private transport), **Other public modes of travel** (London Underground, light rail, aircraft, other public transport).

Much has changed since the mid-1990s in the life of the average British 17-year-old. From 1995 to 1997 (unweighted sample size *n* = 279) to 2008/10 (*n* = 777), the percentage that reported having never worked (aside from casual or holiday work) more than doubled, from 28% to 61%. The percentage living in a household with at least one adult over age 34 was 97%; this remained unchanged over this time period. There is a discontinuity in the NTS economic-status time series between 1997 and 1998 which prevents direct comparison of the prevalence of participation in education by 17-year-olds. Comparing 1998–2000 to 2008/10, however, those whose main activity is being a student increased from 31% to 52%.

Personal income averaged among all 17-year-olds fell by 16% (£3,100 to £2,600 – all values in 2010 prices). The proportion earning more than £1,000 per year fell from 54% to 43% and even among those earning more than this the average personal income fell from £6,400 to £4,400 – a 31% real-terms decrease in income. Meanwhile, the aggregate (all-member) incomes of the households they live in increased slowly from £44,000 to £45,600; this is due to increases in the incomes of their parents and other older adults that they live with.

The proportion that report holding a full car driving licence fell from 18% to 12%, and average annual car driving mileage (among both drivers and non-drivers) fell from 1,220 to 791 miles per year. Their mileage by other modes of transport also decreased, however, from 5,574 to 4,922 miles per year. The proportion that lives in car-owning households changed relatively little, from 84% in 1995/7 to 85% in 2008/10.

Figure 2.1: Average annual mileage by pre-driving age young people (aged 11–16 years) and young adults (aged 17–29 years), as well as other age groups

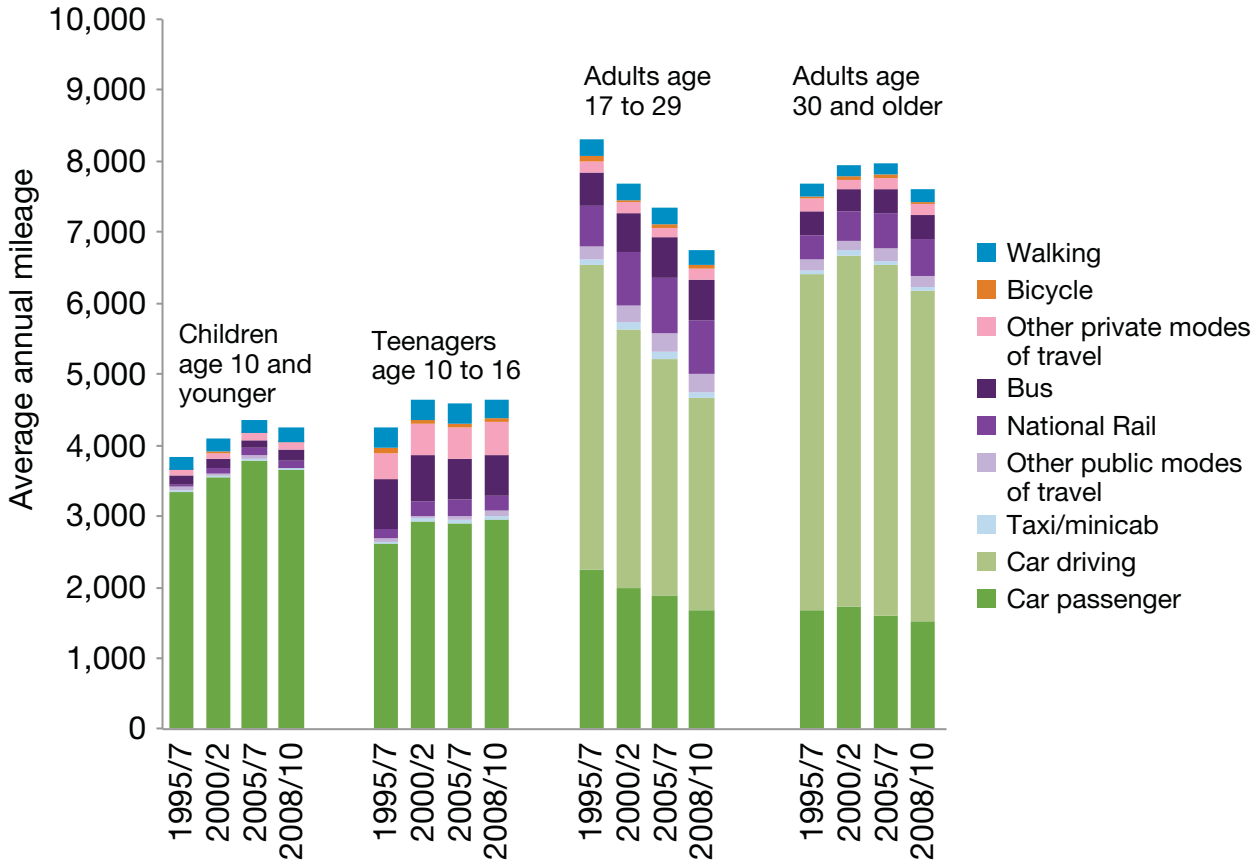
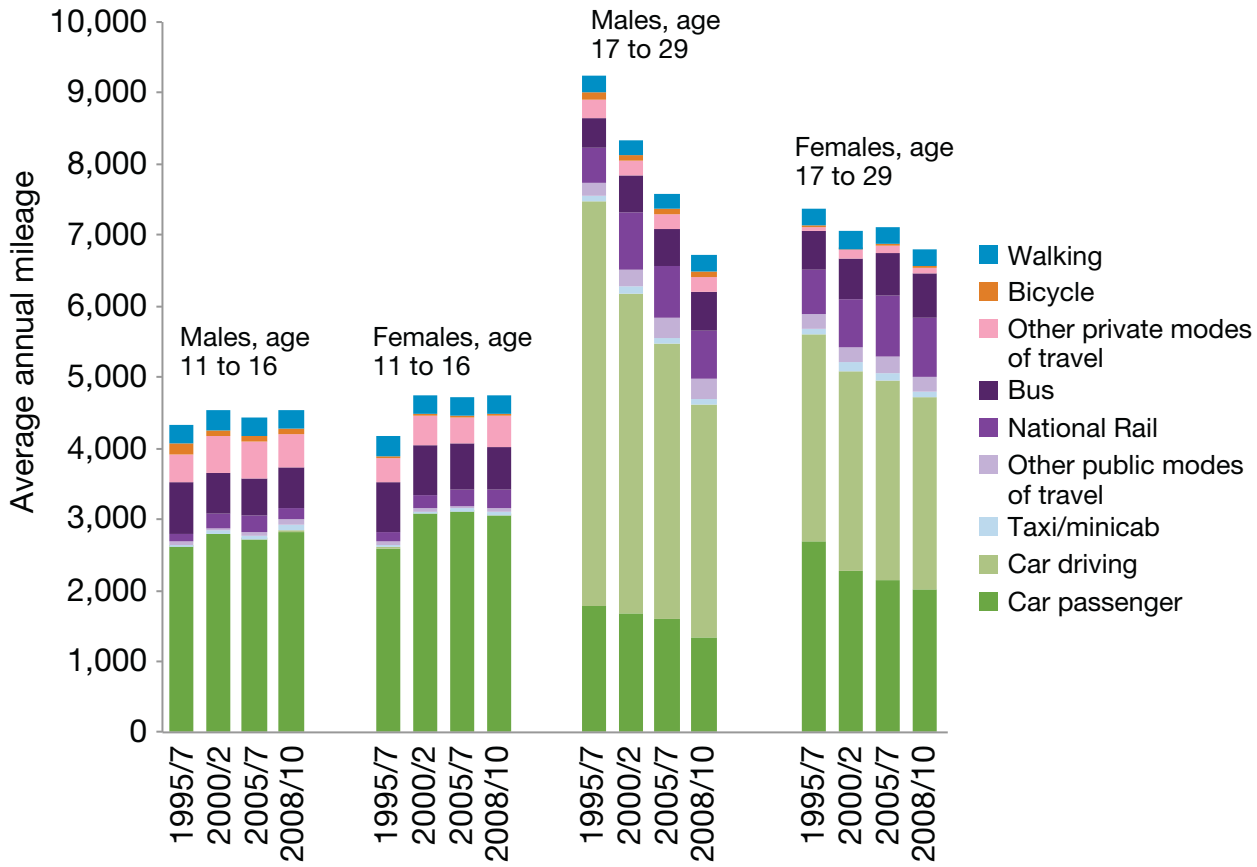


Figure 2.2 brings gender into the analysis, and it can be seen that the drop in young adults' car driving has been much sharper for young men than women. Young men's driving mileage has come down by 43%, whereas the drop was only 7% for young women.

Figure 2.2: Average annual mileage by pre-driving age young people (aged 11–16 years) and young adults (aged 17–29 years), by gender



The key findings from this analysis are: (i) that pre-driving age young people have not seen a reduction in their car-based mobility as driving-age young adults have; and (ii) that the differences between the genders are very small for pre-driving age young people, especially when compared to young adults. Therefore, it can be concluded that whatever has caused young adults to use cars less is related to the transition to independence that occurs at or after one reaches the minimum driving age. These results are therefore evidence against two of the hypotheses that attempt to explain the drop in young adults' driving.

The first of these hypotheses suggests that young people are increasingly sensitive to sustainability issues, and hence are driving less. Were such a shift to have occurred, one might expect it to have manifested itself in part in the form of reduced car passenger travel by pre-driving age young people.

There is an interesting research question regarding the degree of autonomy that pre-driving age young people exercise over their activities and transport. While part of what they do will clearly be dictated by parents and other carers, it is implausible that they play no part in choosing how they travel. Therefore,

the fact that their car passenger travel has not reduced while it has for young adults aged 17+ is evidence contrary to the hypothesis that changing attitudes towards sustainability are leading young people to travel less by car. It could be that there has been a major attitude shift that occurs just as young people reach driving age, but this would appear unlikely.

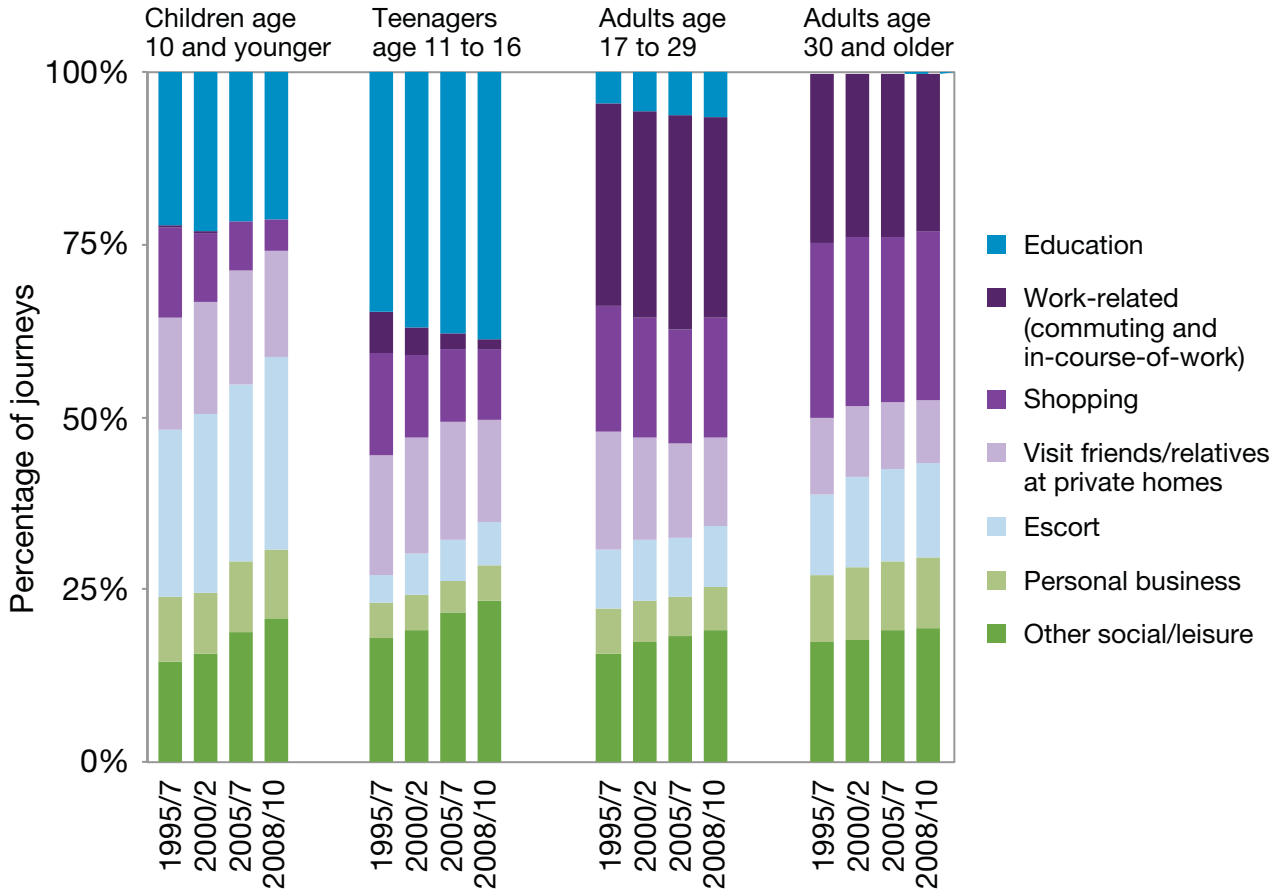
The second of these hypotheses is the suggestion that young adults are increasingly connecting with family/friends and performing other activities online, and hence driving less. However, since online activity is also available to pre-driving age young people, this hypothesis would suggest that their travel would also have decreased, which has not been the case.

3. Why do sub-driving-age teens travel?

This section looks at the motivations for pre-driving age young people' travel. The findings are primarily shown for this age group, but in several analyses results are presented for other age groups as well, for comparison purposes.

This is the case for Figure 3.1, where the time trend in the distribution of journeys by purpose is shown. Pre-driving age young people can be compared with young children (aged 10 and under), young adults, and adults aged 30 and over.

Figure 3.1: Distribution of journey purposes among various age groups



The most striking point evident from Figure 3.1 is that the proportion of pre-driving age young people' travel that is for work-related purposes has fallen sharply. Whereas younger children never performed any substantial amount of work-related travel, approximately 6% of pre-driving age young people' journeys were work-related in the mid-1990s, but this fell to 1% by the late 2000s.[2] In terms of mileage, the average work-related distance travelled by pre-driving age young people fell from 151 miles per year in 1995/7 to 51 miles per year in 2008/10 (a drop of 66%).

Looking at other journey purposes shown in Figure 3.1, it can be seen that the proportion of pre-driving age young people' travel that was for shopping purposes decreased (from 15% of journeys in 1995/7 to 10% in 2008/10) , but not quite as starkly as work-related travel. The proportion of their travel that is for education purposes increased (35% to 39%), as did the proportion for social/leisure purposes (18% to 23%). However, when all four age groups shown are considered, the sharpest proportionate change for any journey purpose by any age group was the decrease in pre-driving age young people' work-related travel.

2 With the exception of children that have a licence to work in a performance capacity (e.g. television, theatre, modelling), the youngest age at which a child can work in Britain is 13 (www.gov.uk/child-employment/minimum-ages-children-can-work).

This raises the question of why this has been the case. On the one hand, the falling rate of economic activity among pre-driving age young people is broadly consistent with the drop in young British adults' incomes and labour-force participation reported by Le Vine and Jones (2012), and this would suggest that it is due to decentralised and structural economic trends. However, the influence of targeted public policy may also be a contributing factor, as in 1994 the European Union implemented a directive (94/33/EC) that restricted most forms of employment by children under school-leaving age. There are complex regulations regarding labour by children, but it is unlikely that the observed trend is exclusively due to any specific public policy changes, as there was a sustained decline in pre-driving age young people's work-related travel over at least the course of a decade. By way of contrast, one would expect policy impacts to be concentrated at the time when changes came into force.

Figure 3.2 looks further at the pattern of journey purpose, by adding in gender and looking at single years of age. It can be seen that for both genders there is a transition from education-related travel to work-related travel beginning around age 16 that is essentially complete by age 25. It can also be seen that the differences in how the genders travel start off small below driving age, and become increasingly pronounced as people progress through their 20s.

Figure 3.2: Distribution of journey purposes by gender and single year-of-age, 2008/10

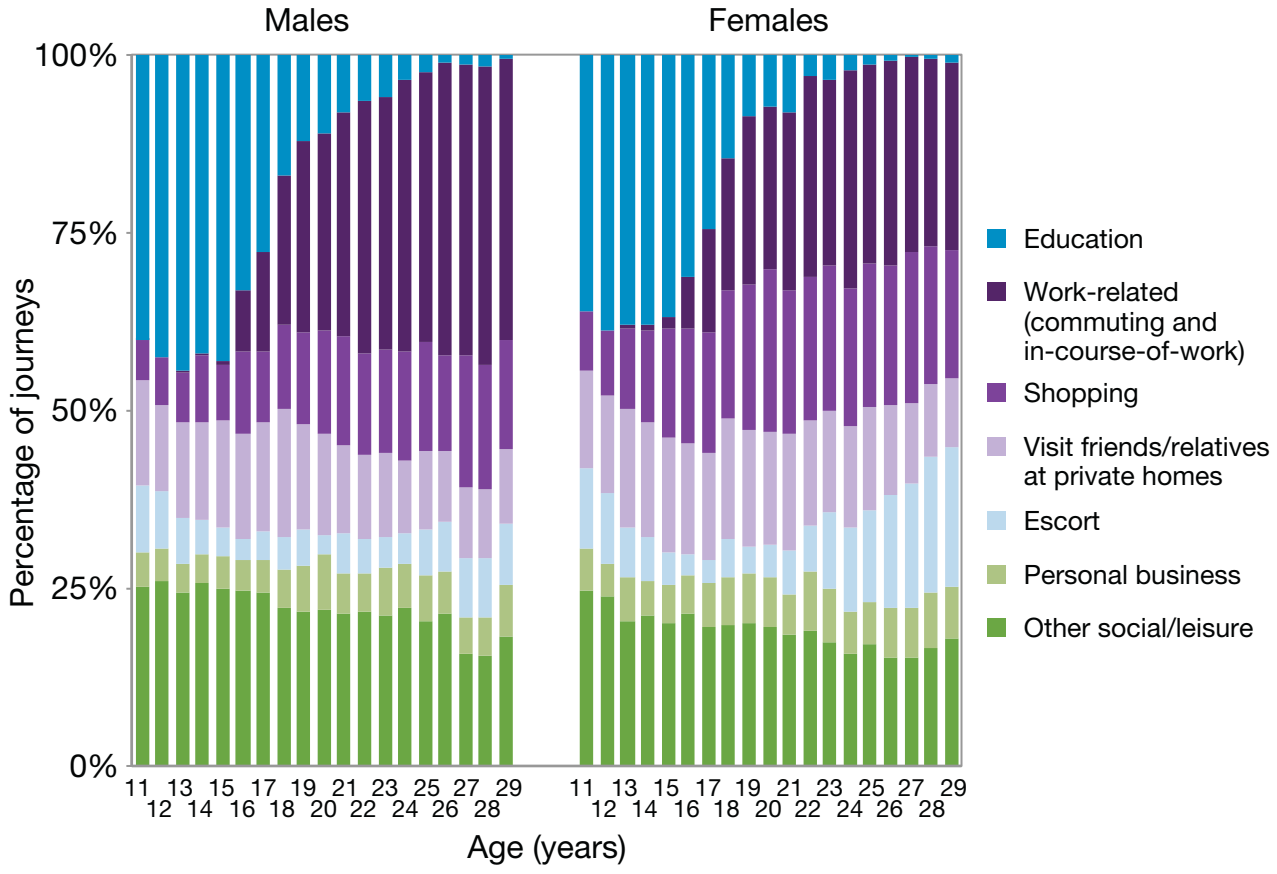


Figure 3.3 again shows the same four age groupings as Figure 3.1, but shows the relationship with settlement size instead of the time trend. What can be seen is that the relationship is not strong, either for pre-driving age young people or for any other age group. As one moves from London down the settlement-size classes through to rural areas, there is a somewhat smaller proportion of travel for education purposes, and a somewhat larger proportion for 'other social/ leisure' purposes. The causal mechanism for this relationship is not entirely clear.

Figure 3.3: Distribution of journey purposes by settlement size and various age groups, 2008/10

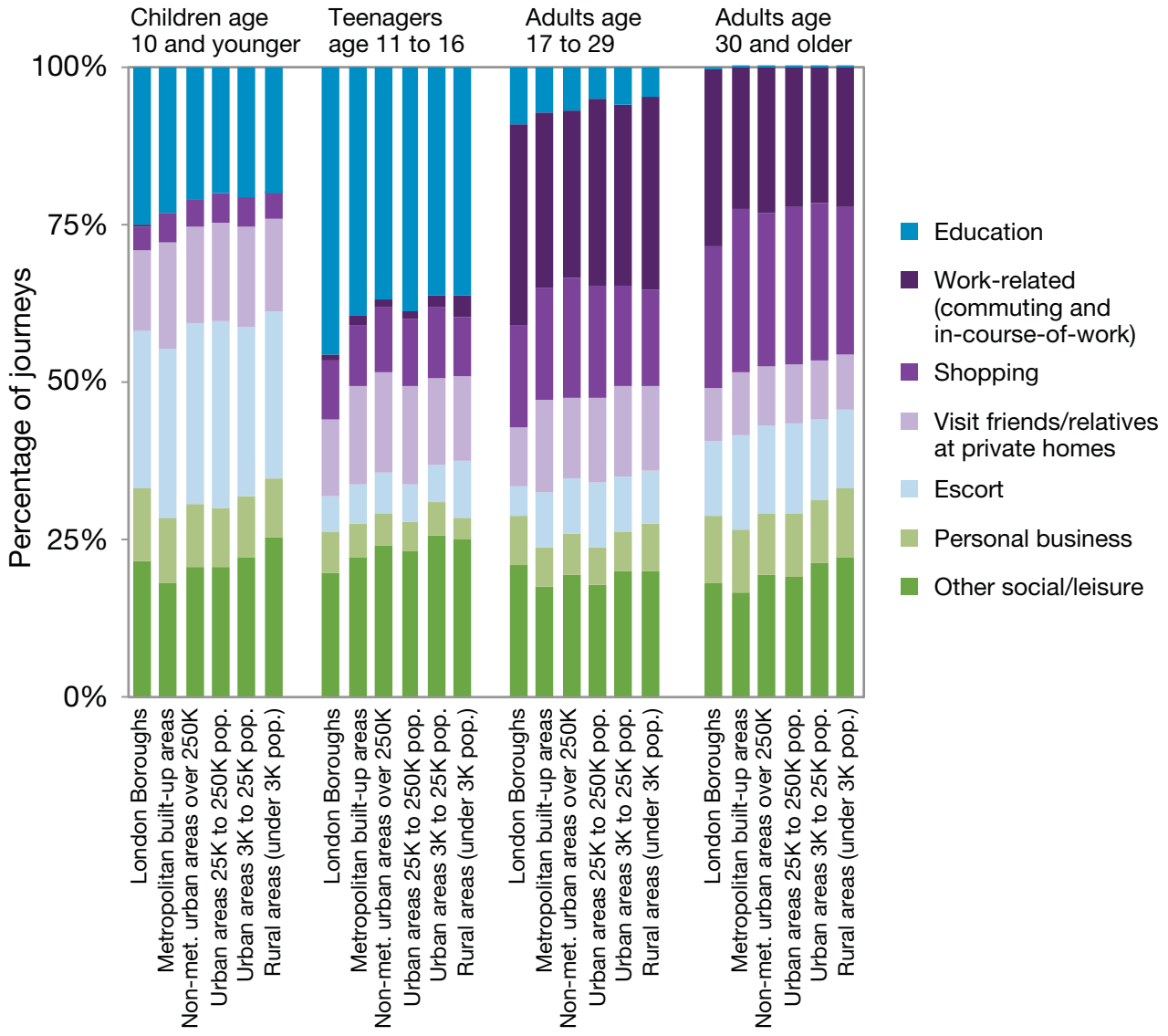
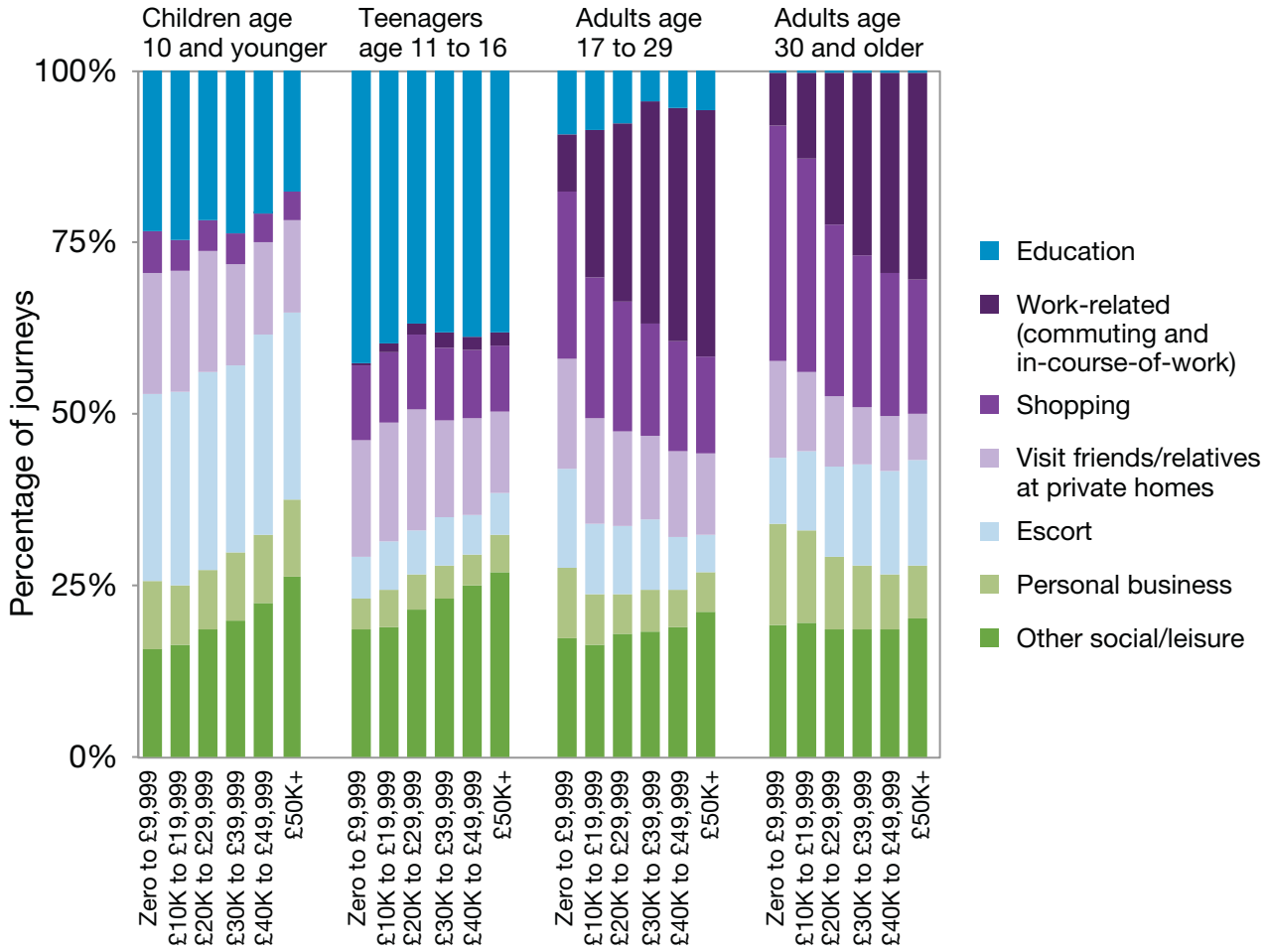


Figure 3.4 brings household income level into the analysis, and we can see that pre-driving age young people living in higher-income households perform a larger proportion of their journeys for social/leisure purposes, and a smaller proportion to visit friends/relatives at their homes. A similar pattern is also seen for children under age 11. Adults in higher-income households perform a larger proportion of their travel for work purposes, unsurprisingly. Though

the percentage is very small, it is clear that for pre-driving age young people there is either a neutral or weakly positive relationship between household income level and work-related travel. Further, pre-driving age young people that performed any work-related travel lived in households with higher average incomes than those that did not travel for work purposes (£41,500 vs £35,400 in 1995/7 and £46,200 vs £41,700 in 2008/10). Thus work travel by pre-driving age young people is not linked with living in a low-income household.

Figure 3.4: Distribution of journey purposes by household income band and various age groups, 2008/10



Household income (2010 prices, RPI-adjusted)

The NTS survey instrument gathers a range of information about adults' employment: the type of work they do (classified by socio-economic grouping (SEG)), whether they work full- or part-time, their personal income, the size of their employer (number of employees), and so on. None of this information is available for children under age 16 that are in employment; all that is known is that they performed work-related travel. Figure 3.5 draws on this information by classifying each person on the basis of whether they commuted to work at

least once during their NTS diary week. When averaged across ages 11 to 16, this metric of work-participation fell from 12% to 4% among boys and 13% to 6% among girls (from 1995/7 to 2008/10). In other words, the drop has been of the same order of magnitude for both genders.

Figure 3.5: Percentage of people that performed at least one work-related journey (all modes) at least once during their NTS diary week, by single year-of-age

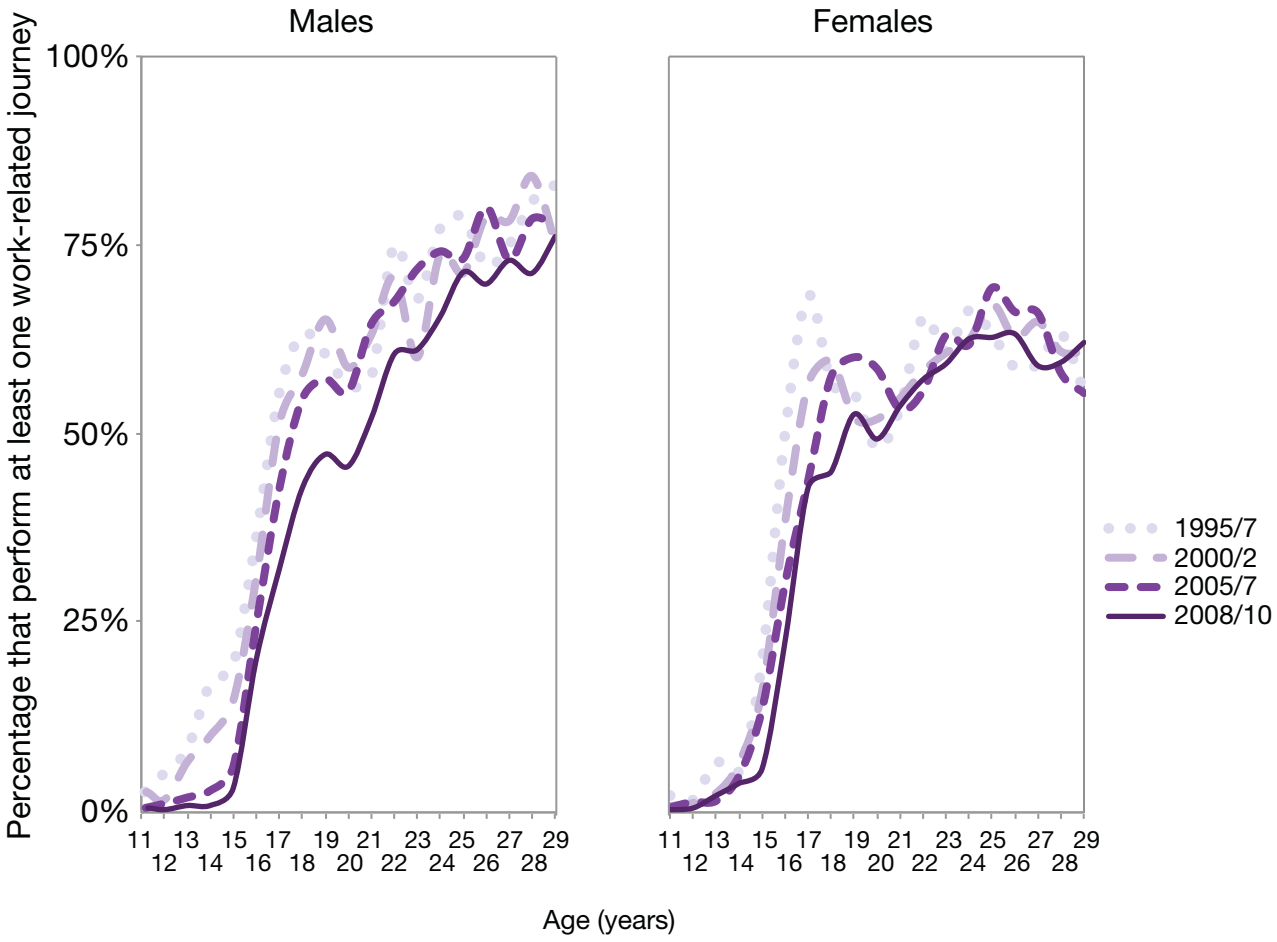
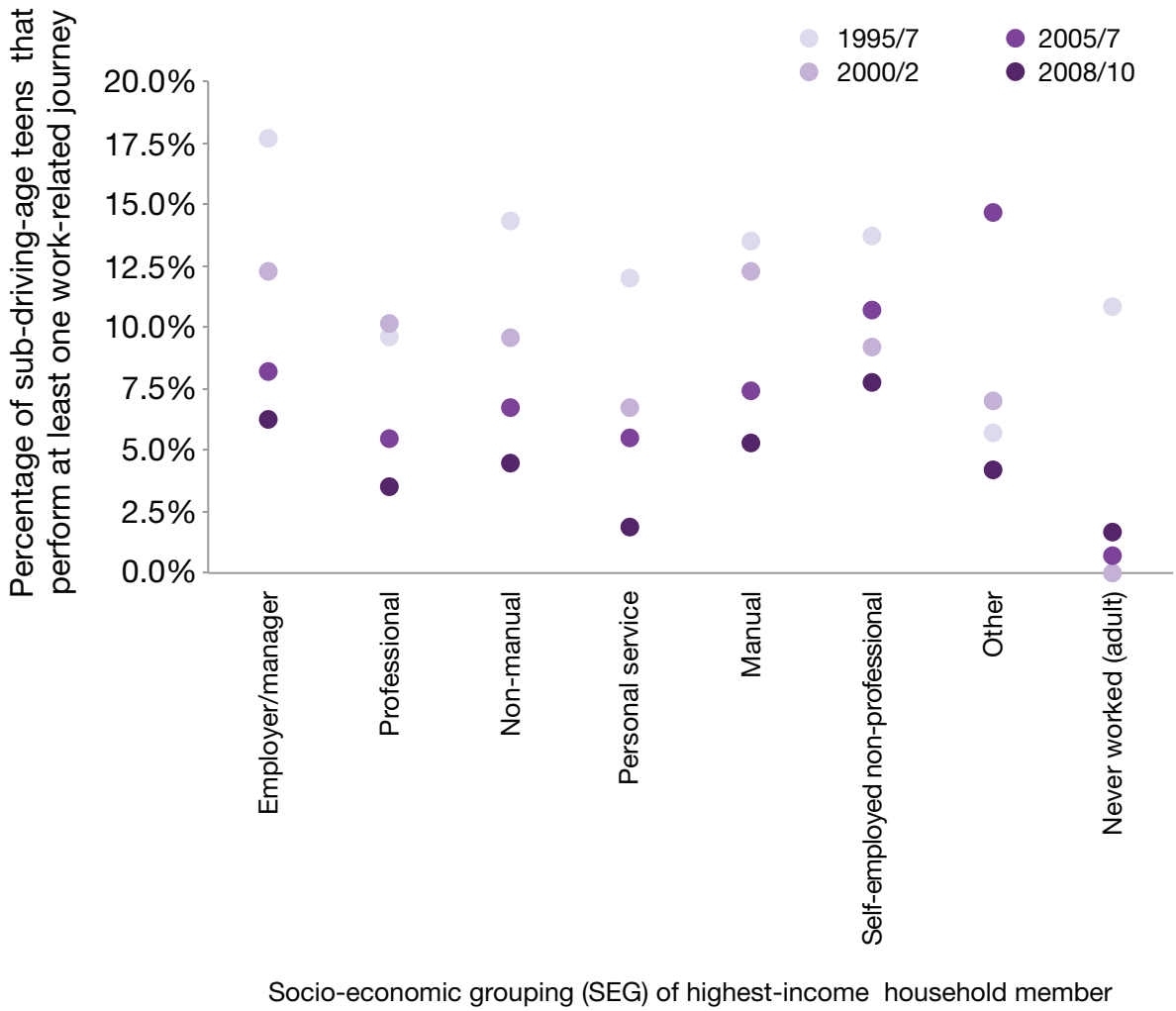


Figure 3.6 looks at the proportion of pre-driving age young people that participate in work broken down by the type of job of the highest-earning adult in their household. It can be seen that the downward trend has been broadly similar across the various employment classes of the highest-income household member. For pre-driving age young people living in households where the highest earner was a 'Manual' class worker, for instance, the proportion that commuted to work dropped from 12% to 5%. In the mid-1990s, the highest rate of work-participation by pre-driving age young people was in households where the highest earner was an 'Employer/Manager'; In 2008/10, the highest rate was in households where the highest-income member was a 'Self-employed non-professional' (i.e. self-employed tradesmen).

Figure 3.6: Percentage of pre-driving age young people that commuted to work at least once during their NTS diary week, by socio-economic grouping (SEG) of highest-income household member



Finally, Table 3.1 shows the average journey length by pre-driving age young people for a range of different journey purposes. As with older people, their journeys have tended to lengthen over this time period, with the fastest growth during the late 1990s and the rate slowing in the 2000s. Journeys to visit friends/relatives at private homes lengthened the most quickly in proportional terms (53% from 1995/7 to 2008/10). Interestingly, we can see from Figure 3.1 that this occurred simultaneously with a drop in the proportion of their journeys for this purpose (from 17% to 15%).

Table 3.1: Average journey length performed by pre-driving age young people by journey purpose (in miles)

	1995/7	2000/2	2005/7	2008/10
Education	3.1	3.2	3.4	3.5
Work-related (commuting and business)	2.7	3.1	4.5	4.1
Shopping	3.8	4.5	4.7	4.7
Visit friends/relatives at private homes	4.5	5.5	5.8	6.9
Escort	5.8	5.3	5.2	5.3
Personal business	3.9	4.2	4.0	4.1
Other social/leisure	7.9	8.7	8.1	8.1
Overall average	**4.4**	**5.0**	**5.1**	**5.3**

4. How do pre-driving age young people travel?

The previous section looked at the question of ***why*** pre-driving age young people travel, and the factors that are linked with journey purpose. This section turns to the question of ***how*** this group travels; it will be recalled that the main finding from Section 2 is that pre-driving age young people have ***not*** experienced a shift away from car travel as young adults over driving age have.

Figure 4.1 shows that pre-driving age young people use bus services for a larger proportion of their journeys than any of the other four age groups, and that this percentage has been basically stable over time (at about 14%). They are also relatively heavy cyclists when compared to the other age groups, though cycling has decreased as a proportion of their journeys (5% to 3%). As is to be expected, they travel by car less in absolute terms than any of the other four age groups, though the proportion of their journeys as a passenger in a car has increased over time from 35% (1995/7) to 42% (2008/10).

Figure 4.1: Distribution of modes of transport among various age groups

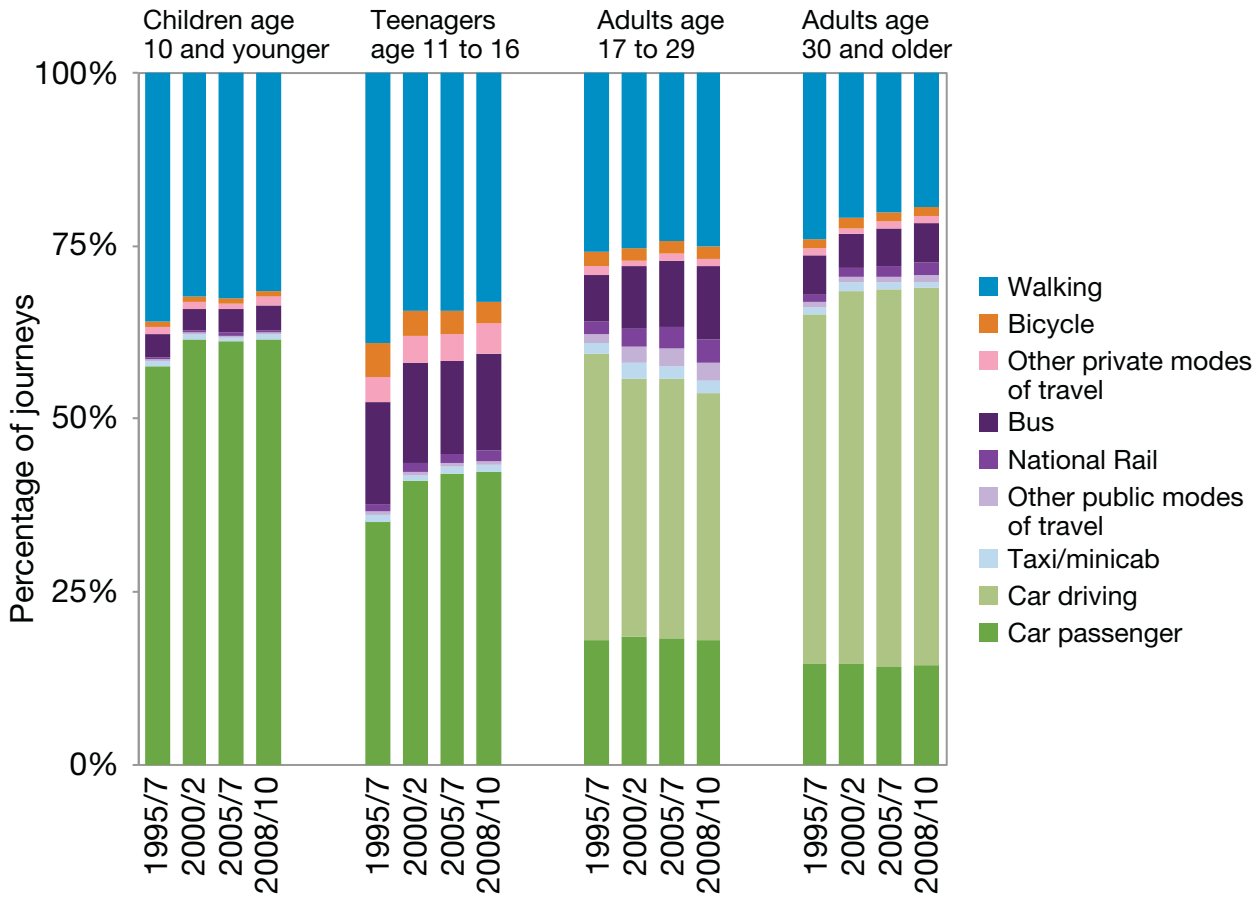


Figure 4.2 shows the relationship of usage of various forms of transport with settlement size. Several of the usage patterns of pre-driving age young people are noteworthy. First, the proportion of walking journeys increases initially as one moves from London towards smaller urban areas, but this reverses and in settlements with a population smaller than 10,000 the proportion of walking journeys falls as settlement size decreases. The opposite can be seen for bus travel; its proportion of the journeys by pre-driving age young people is highest in London (where service provision tends to be best), then decreases, and finally is higher in rural areas than small urban settlements. The proportion of their journeys as a car passenger increases from London (31%) through to rural areas (50%).

Figure 4.2: Distribution of modes of transport by settlement size and various age groups, 2008/10

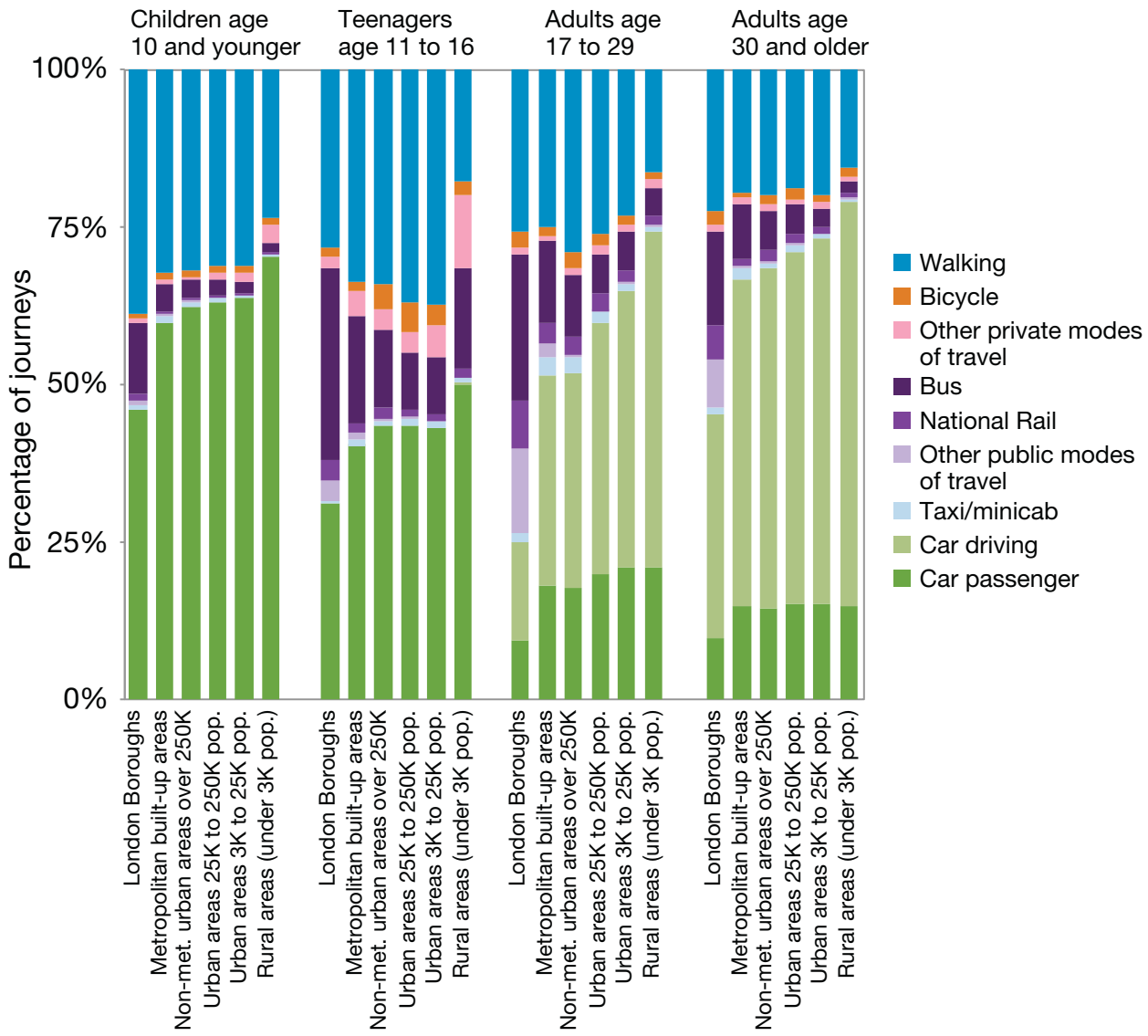


Figure 4.3 shows mode share broken down by gender and age between ages 11 and 29, for the 2008/10 period. Cycling is generally higher by men in this life stage, otherwise the patterns in the sub-driving-age years are broadly similar. The 'car passenger' proportion of journeys is about five percentage points higher for women than men both below and above the minimum driving age.

Figure 4.3: Distribution of modes of transport by gender and single year-of-age, 2008/10

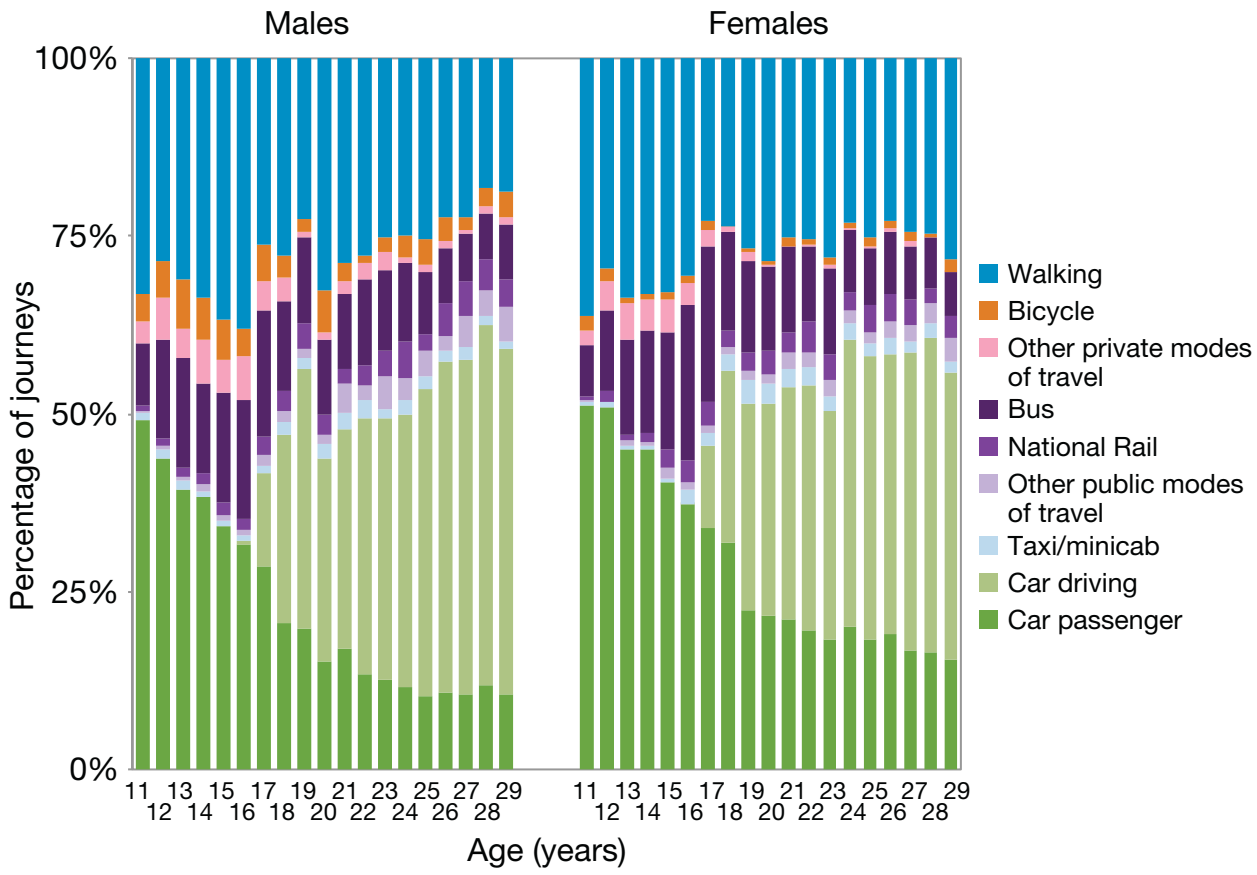


Figure 4.4 looks at mode share for pre-driving age young people' journeys by journey purpose. Car passenger travel is the smallest proportion of education journeys (between 20% and 22%, and increasing slowly since 2000/2) and the largest proportion of escort[3] journeys (increasing period-on-period from 79% in 1995/7 to 84% in 2008/10). The most rapid change over time has been the drop in cycling's proportion of work-related journeys (24% in 1995/7, decreasing period-on-period to 4% in 2008/10); bus and car passenger travel correspondingly increased their proportions of work-related travel (10% to 18% and 27% to 48% for bus and car respectively, from 1995/7 to 2008/10). A clear shift over time can also be seen from walking to car passenger travel for trips to visit friends/relatives at private homes (from 46% and 36% for walking and car passenger travel in 1995/7 to 34% and 50% respectively in 2008/10). It is worth noting that this took place concurrently with a structural lengthening of these journeys (see Table 3.1; from an average of 4.5 miles per journey in 1995/7 to 6.9 in 2008/10).

3 *Escort* journeys are defined here as journeys that are "made for the purpose of accompanying someone else", as opposed to a journey "made by someone on their own behalf" (National Travel Survey, 2010).

Figure 4.4: Distribution of pre-driving age young people' usage of modes of transport by journey purpose

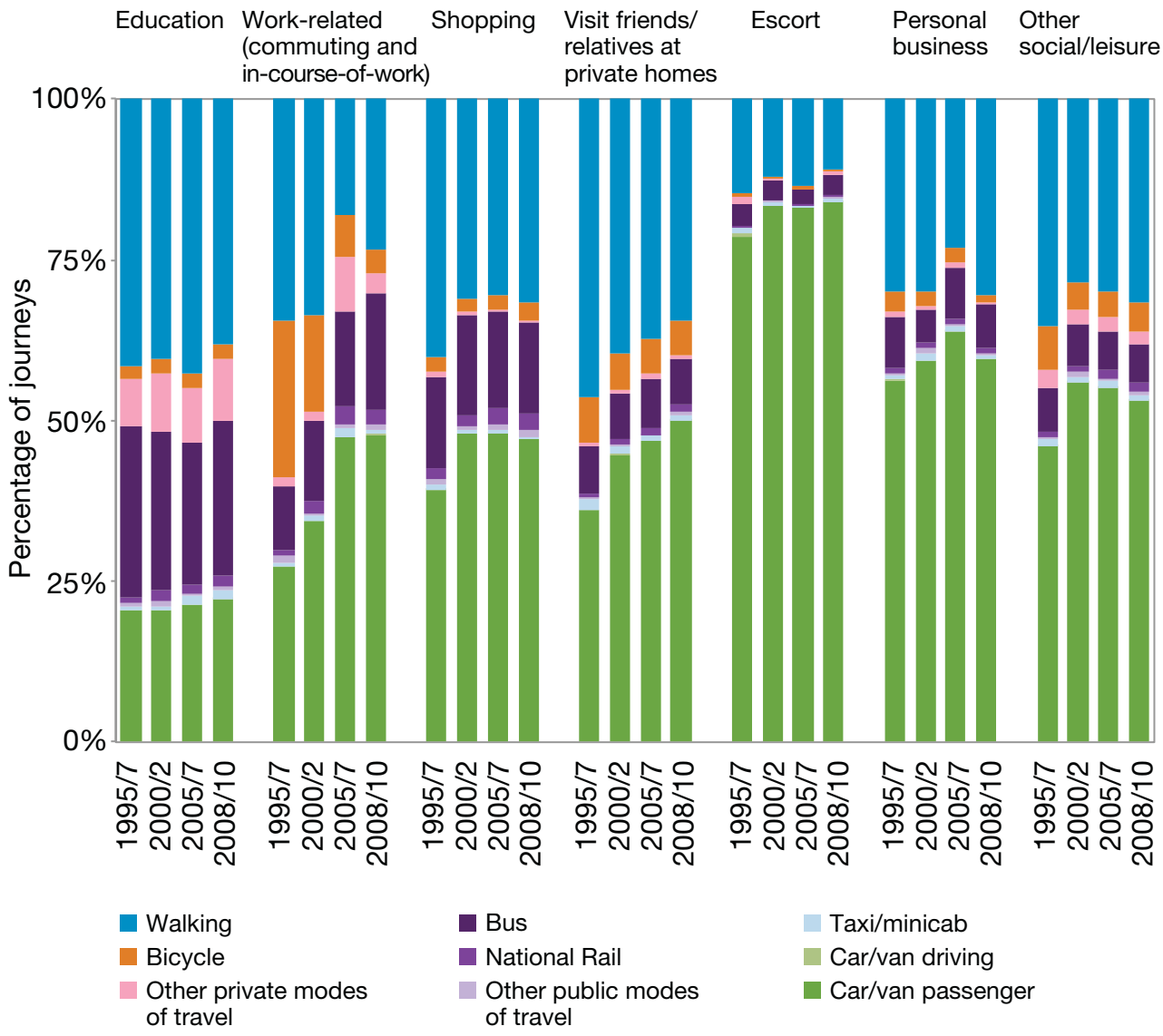
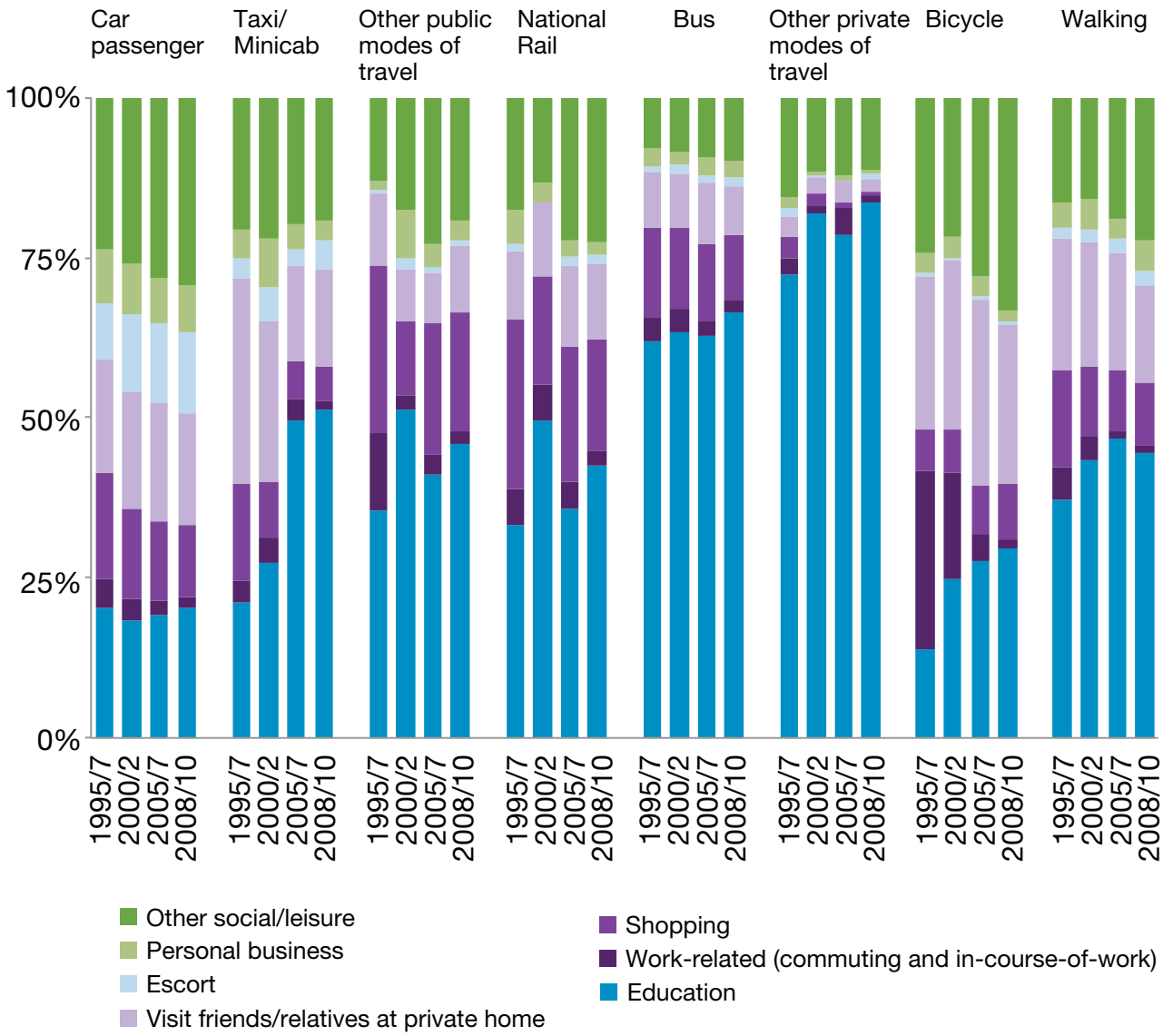


Figure 4.5 shows the same information as Figure 4.4, but in a different format. It shows the percentage distribution of journey purposes for each mode of transport. It must be kept in mind that relatively little travel is observed by certain forms of transport; each of the following modes accounted for fewer than 100 miles per year in the 2008/10 period: Bicycle (50 miles per year), Taxi/Minicab (66 miles per year), Other public (57 miles per year). Here we see that the proportion of walking that is for education purposes has generally, but not monotonically increased (from 44% in 1995/7 to 52% in 2008/10), and a monotonic increase has taken place for cycling (14% to 29%). There is a decreasing proportion of car passenger travel that is for shopping (where the teen is the shopper; 17% to 11%), but an increase in the proportion for 'escort', where the teen is being driven to an activity in which someone else is the main participant in the activity (9% to 13%). The latter can be interpreted as a form of mobile child care, where the teen is being brought along for the journey.

Figure 4.5: Distribution of pre-driving age young people' journey purposes by mode of transport

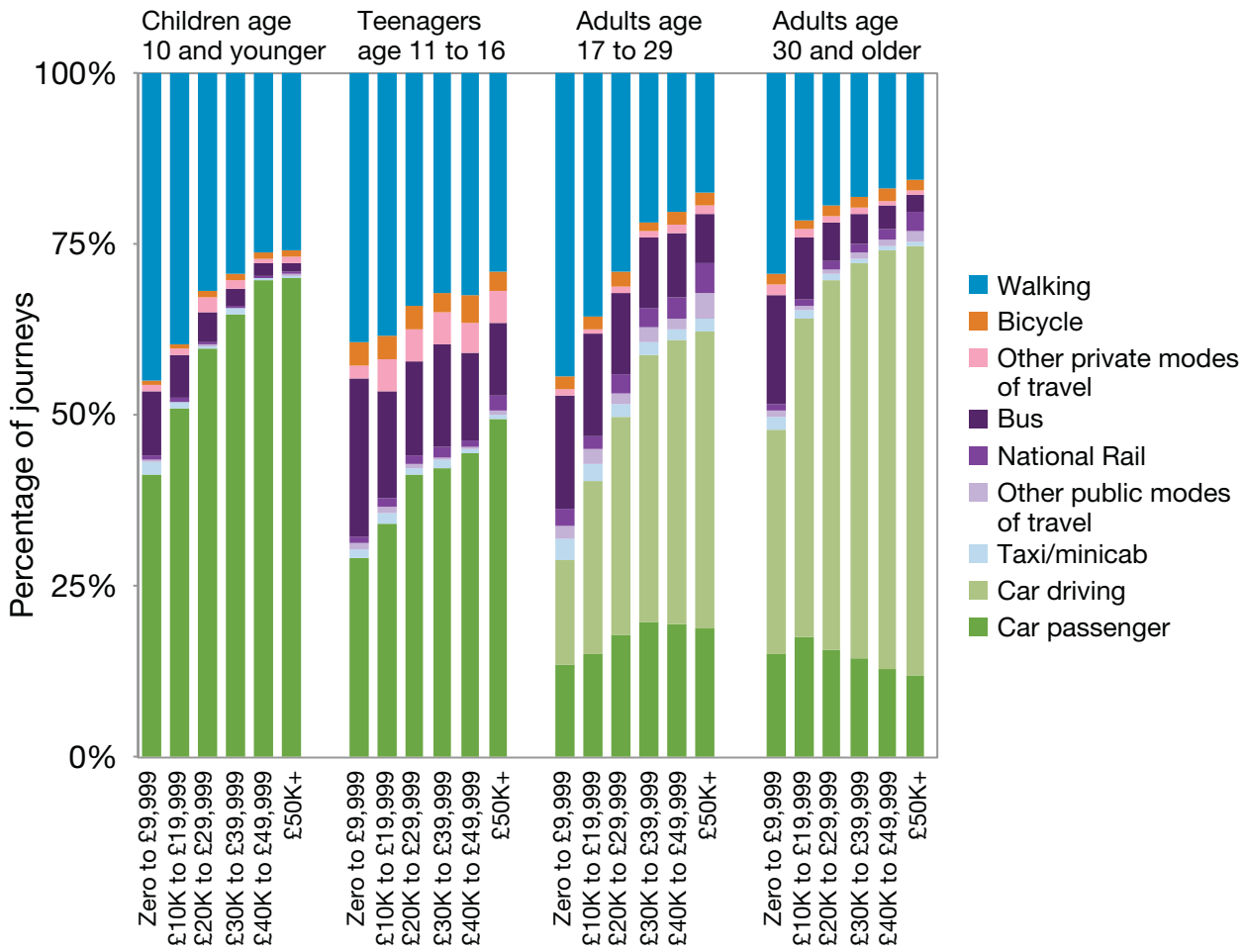


A large drop in the proportion of cycling that is for work-related purposes can be seen (28% to 2%), there have been monotonic reductions among other modes as well (walking, car passenger, bus, and National Rail), though the drops have not been as steep. So, the finding from Figures 4.4 and 4.5 is that cycling and work-related travel have become much less closely linked over time. Cycling is falling as a proportion of work-related travel, and work-related travel is falling as a proportion of all cycling.

Figure 4.6 looks at the mode split of pre-driving age young people' journeys when broken down by household income level; the other age groups are shown for comparison purposes. As one moves upwards through the household income scale the pattern for pre-driving age young people is that the car passenger mode share increases and other modes either remain flat or decrease. (The

minor exception to this is the 'Other private' class, which includes private school-buses.) Similar trends are seen for younger children; indeed for both pre-driving age young people and younger children the ratio in the car passenger proportions between the highest and lowest income bands is approximately 1.7 (49%/29% for pre-driving age young people; 70%/41% for younger children). If car driving and car passenger travel are combined for young and older adults, we find corresponding ratios that are higher for young adults (62%/28% = 2.2) but not for adults aged 30 and older (75%/48% = 1.6).

Figure 4.6: Distribution of modes of transport by household income band and various age groups, 2008/10



Household income (2010 prices, RPI-adjusted)

In Figure 4.7 it can be seen that the day-of-week distribution is quite similar for pre-driving age young people as for the younger and older age groups, with about 15% of journeys taking place on each weekday, a smaller proportion on Saturday and the lowest proportion (about 10%) on Sundays.

Figure 4.7: Distribution of journeys by day-of-week by various age groups, 2008/10

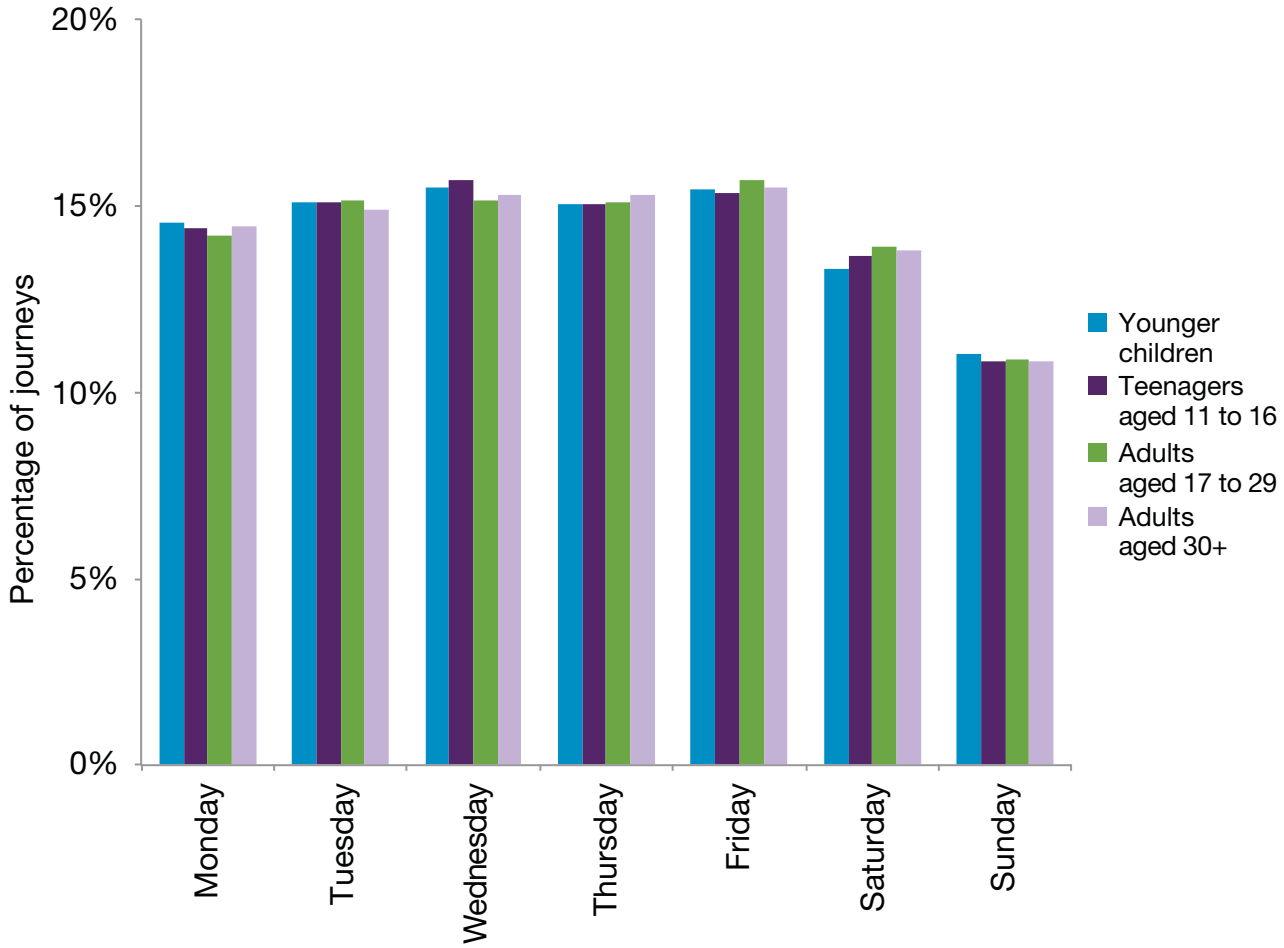
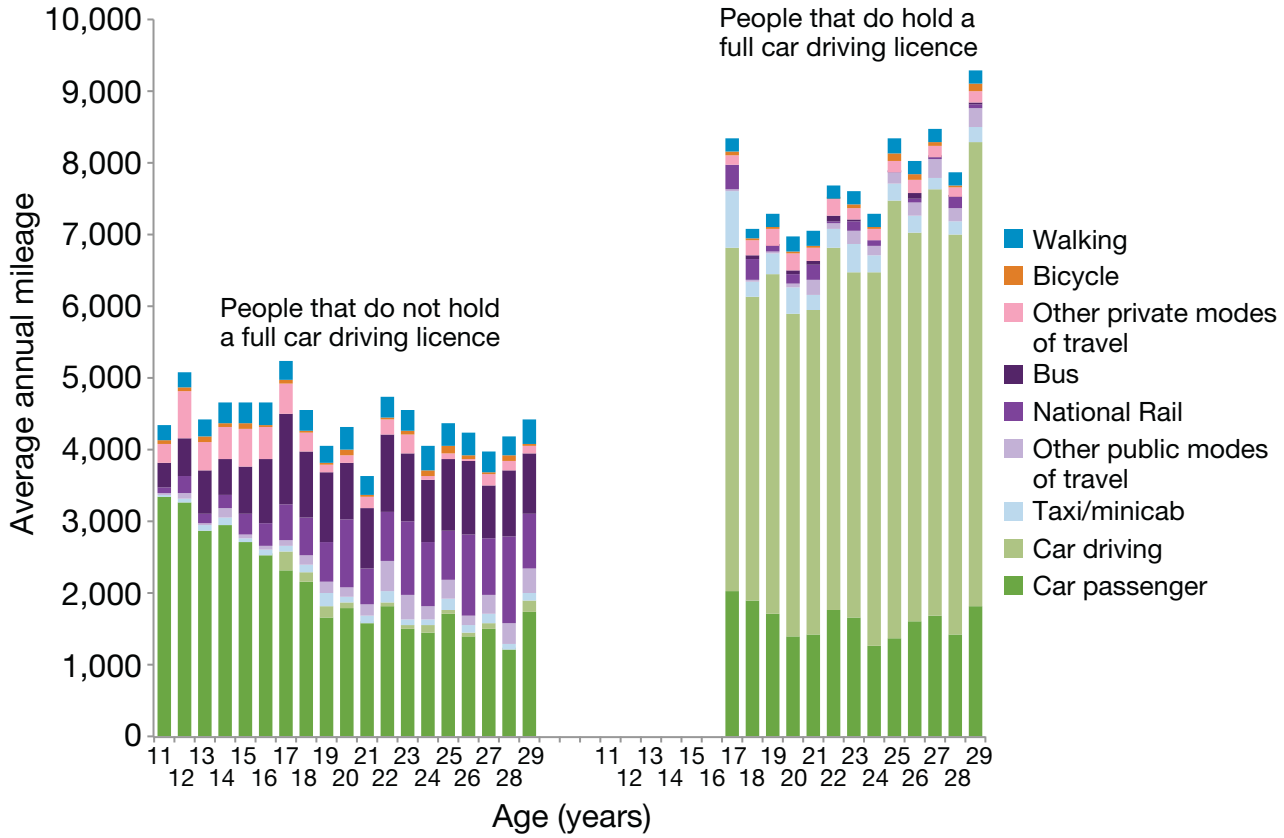


Figure 4.8 compares the distance travelled by mode for three groups: pre-driving age young people, young adults that do not have a full car driving licence, and those young adults that do have one. The first two of these groups are shown in the left-hand panel of Figure 4.8, and the third group is shown in the right-hand panel.

Figure 4.8: Average annual mileage by single year-of-age by licence-holding status, 2008/10



The saliency of holding a driving licence can be seen clearly, as there are major differences between the licence-holding group and both pre-driving age young people and unlicensed adults of driving age. The main difference is that licence-holders' car driving mileage represents more than half of their overall mileage, and as licence-holders age through their 20s their car driving mileage tends to increase, but their use of other modes remains basically flat.

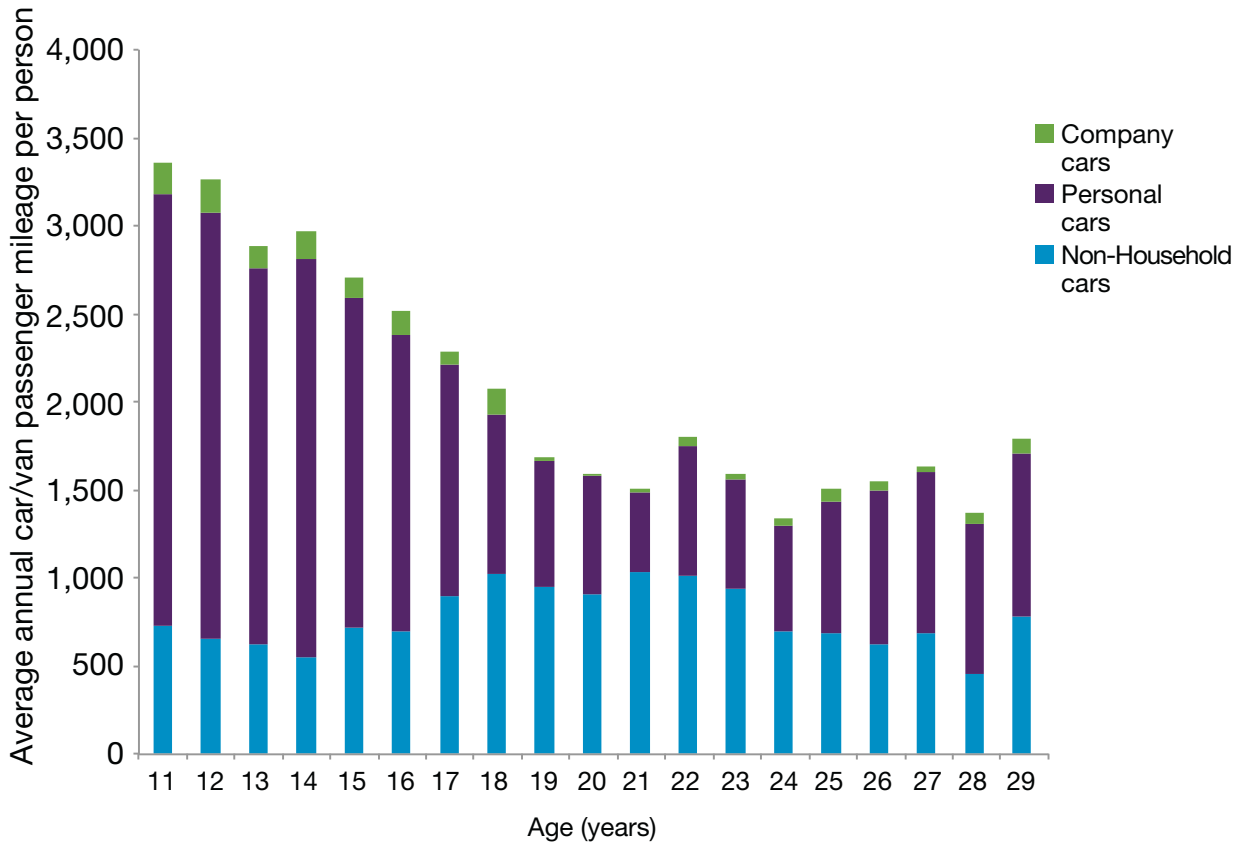
The level of average annual mileage is very similar for pre-driving age young people and unlicensed adults of driving age. Car passenger mileage decreases from age 11 to 18 (from 3,354 miles per year at age 11 to 2,522 at age 16 and 2,160 at age 18), but then there is no clear trend from age 19 to 29 (values range between 1,200 and 1,800). Bus travel increases from 353 miles per year at age 11 through to 893 at age 16. For young adults who remain unlicensed there is no clear trend in bus use from ages 17 through to 29 (values range between 700 and 1,300 miles per year). Likewise rail use increases in the later teenage years and then is variable in the 20s without a clear upward or downward trend.

So, what can be concluded from this analysis shown in Figure 4.8 is that there are major changes in travel associated with a young adult holding a driving

licence, but the differences between travel by pre-driving age young people and unlicensed young adults of driving age are much smaller (measured here in terms of annual mileage by mode of transport).

Figure 4.9 looks at how car passenger travel breaks down by form of car ownership, with the three class being personal cars that are kept by a household member, company cars (i.e. those where the car's keeper claims the car as a benefit-in-kind form of non-salary compensation) that are kept by a household member, and 'non-household cars' which are cars that are not available continuously for private use by members of the household. The 'non-household cars' class includes hire cars, an employer's pool cars, and private cars owned by someone that does not live in the NTS respondent's household; no further information is known beyond the 'non-household car' classification, however.

Figure 4.9: Average annual car passenger mileage by single year-of-age by form of car ownership, 2008/10



It can be seen in Figure 4.9 that there is a substantial level of car passenger travel that takes place in non-household cars, whereas the proportion of car driving mileage in company cars is *de minimis*. It also shows that more than three-quarters of pre-driving age young people's car passenger mileage takes place in household cars (78%), whereas nearly half (49%) of young adults' car passenger mileage takes place as a passenger in a non-household car.

Finally, Table 4.1 looks at the time trend in journey length by pre-driving age young people when broken down by mode of transport. Many of the trends are weak; the largest exception is that the average distance of their taxi journeys increased period-on-period, for a total increase of 84% between 1995/7 and 2008/10.

Table 4.1: Average distance of pre-driving age young people' journeys by mode of transport (in miles)

	1995/7	2000/2	2005/7	2008/10
Walking	0.6	0.8	0.8	0.8
Bicycle	1.6	1.6	1.7	1.8
Car passenger	7.7	7.7	7.7	7.9
Other private modes of travel	11.3	12.3	12.6	12.2
Bus	5.1	4.9	5.0	4.9
Other public modes of travel	8.7	6.7	11.3	10.8
National Rail	14.6	18.4	20.4	18.1
Taxi/Minicab	4.3	5.7	6.1	7.9

5. The influence of household factors

This section examines the relationship between pre-driving age young people' travel and a number of basic family-structure indicators.

One of the structural shifts that has taken place in recent years is the concentration of young adults in Britain's urban areas. Figure 5.1 shows that the combined proportion of young adults living in London and other metropolitan areas increased from 27% to 34% between the mid-1990s and the late 2000s. However, there is evidence of a very different pattern among pre-driving age young people, who are much more likely to still be living with their parent(s).[4] Pre-driving age young people do not show the same patterns of tending to concentrate in cities in recent years, with a broadly steady proportion (27–28%) living in London and other metropolitan areas over the period of analysis. It is worth noting that it is not just pre-driving age young people that have not tended to concentrate in metropolitan areas – only young adults have done so, whereas younger children and older adults have not.

4 NTS data indicate that during the 2008–10 period, 99% of 16-year-olds were living with an adult aged 35+, compared to only 69% of 20-year-olds.

Figure 5.1: Percentage of people among various age groups by place-of-residence

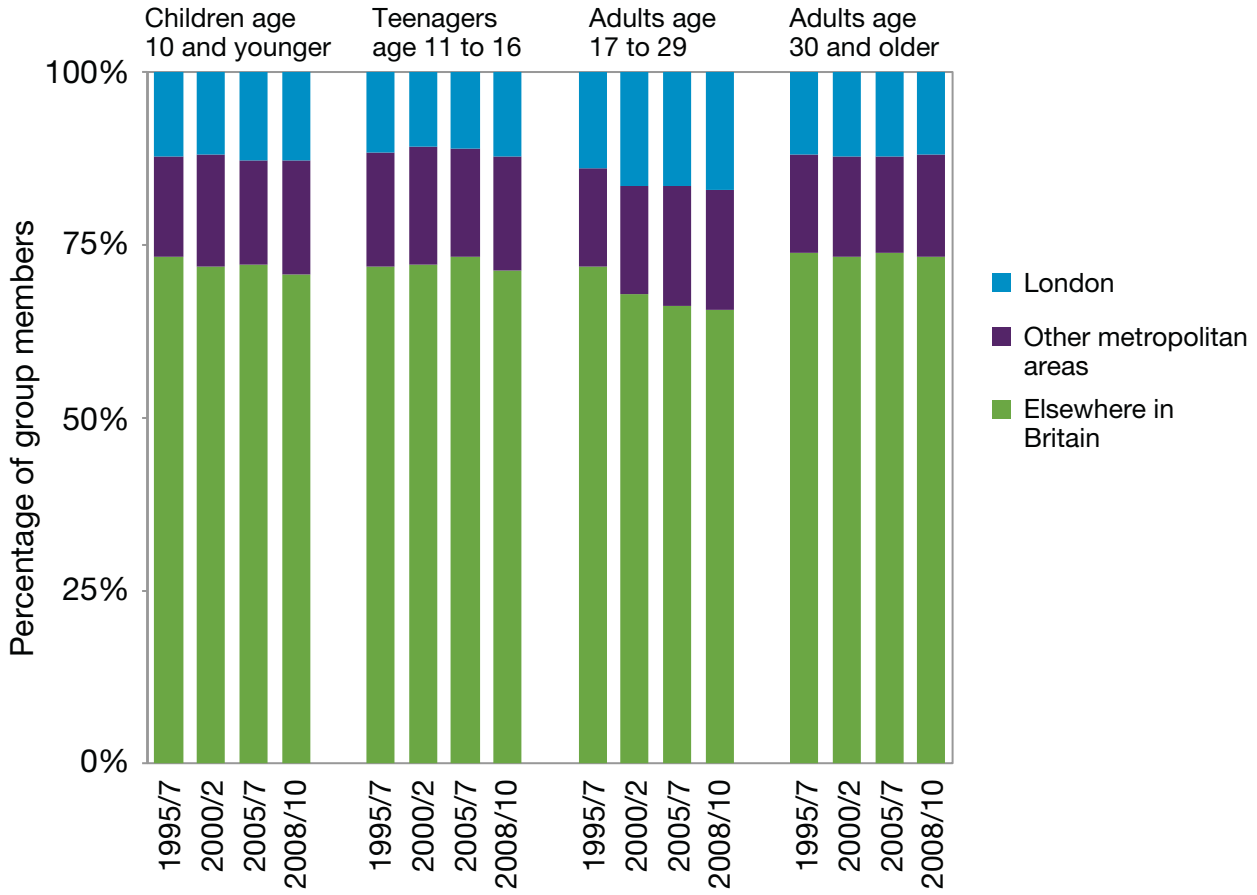


Figure 5.2 looks at trends in car ownership, and a rapid rise in the proportion of pre-driving age young people living in two-plus car households can be seen (39% to 50%). Again there are differences between pre-driving age young people and young adults, but they are not as stark as in the case of place-of-residence. There has actually been an upward trend in the proportion of young adults living in two-plus car households (despite their falling car use), but the rate of increase has been slower (5 percentage points from 1995/7 to 2008/10, vs 11 percentage points) and the increase has not been monotonic. It can also be seen that young adults are more likely to live in car-free households (24% vs 15% for pre-driving age young people, in 2008/10).

Figure 5.2: Percentage of people by household car ownership level among various age groups

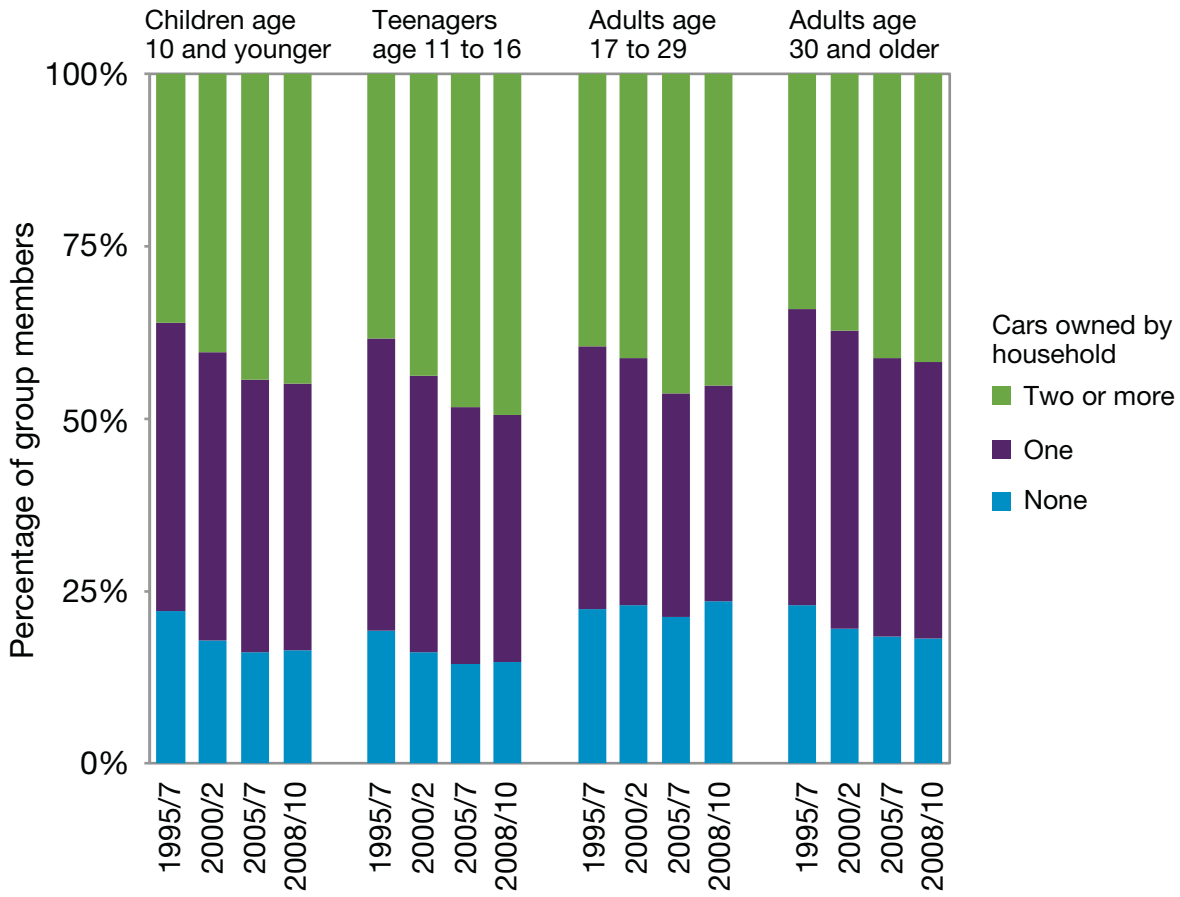


Figure 5.3 looks at the number of other children that pre-driving age young people are living with. Since 2000/2 there has been an increasing proportion of pre-driving age young people that are the only child in their household (28% in 2000/2 vs 32% in 2008/10). By contrast, the proportion of pre-driving age young people that are living within in a household with three or more children has fallen from 28% to 25%. So, there is a general trend of pre-driving age young people living in households with fewer other children; this simply reflects a trend towards smaller family sizes.

Figure 5.3: Distribution of pre-driving age young people and younger children by number of children in their household

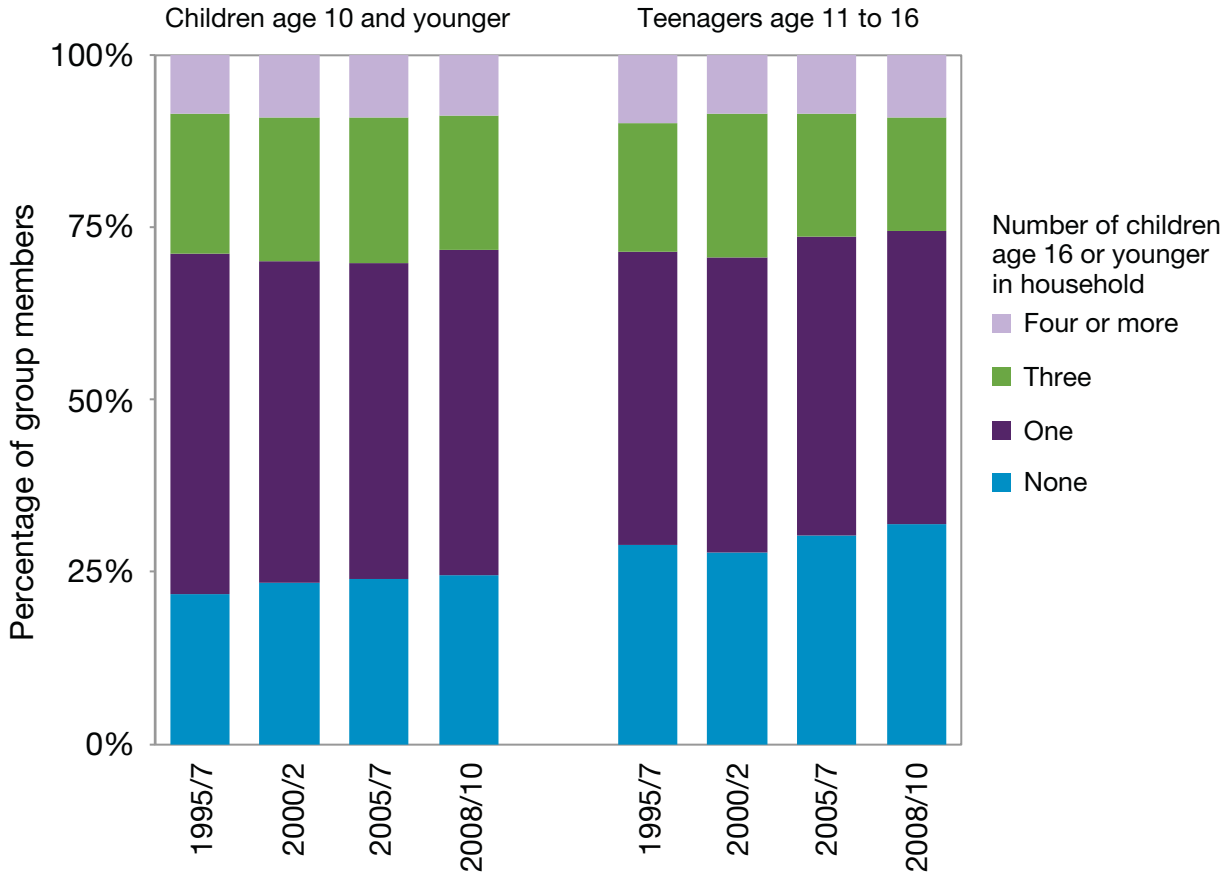


Figure 5.4 investigates whether there is a relationship between car passenger travel and the number of other children that pre-driving age young people live with. It can be seen that, beyond two children in a household, more children in a household is associated with fewer annual miles travelled by each pre-driving age young person.

The time trends in this relationship are also shown in Figure 5.4. There has been little change in car passenger mileage by pre-driving age young people where they are the only child living in their household, but in household with more children, mileage-per-sub-driving-age-teen has generally tended to increase over time.

Figure 5.4: Average annual car passenger mileage by pre-driving age young people, by number of children in household (HH)

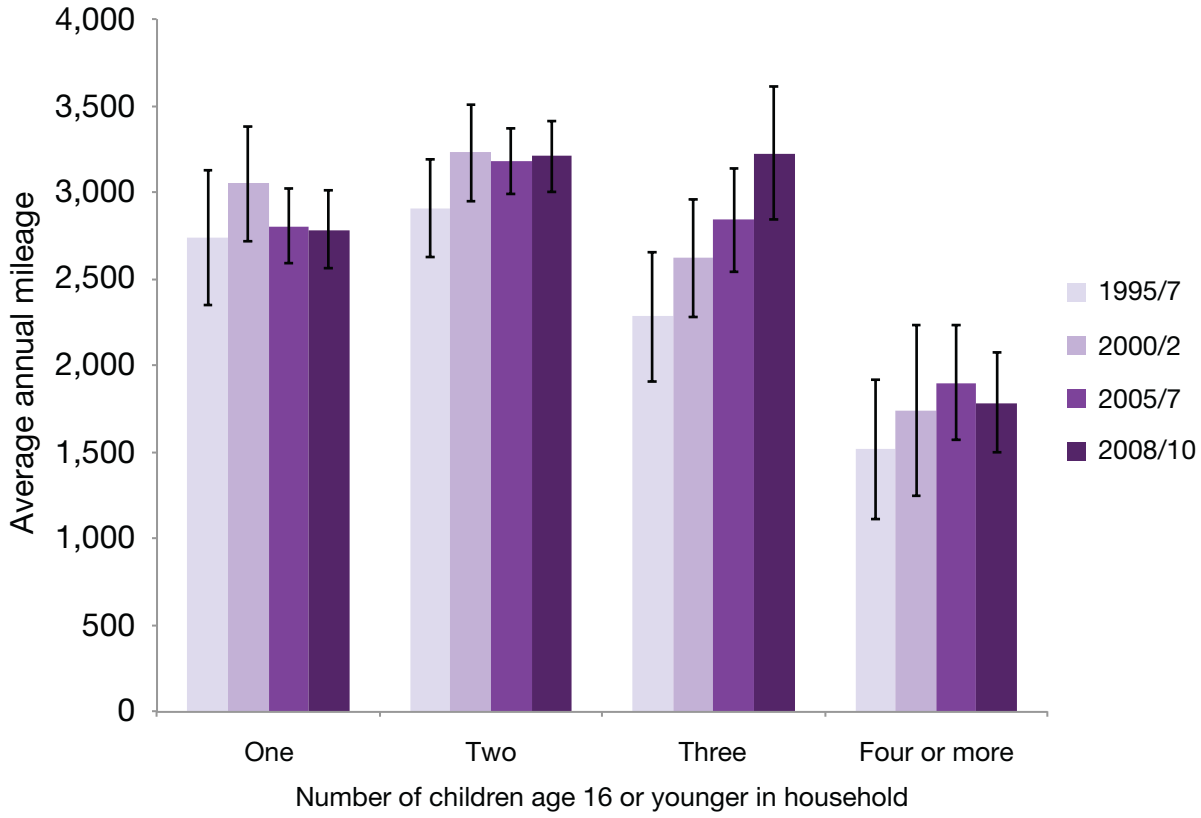
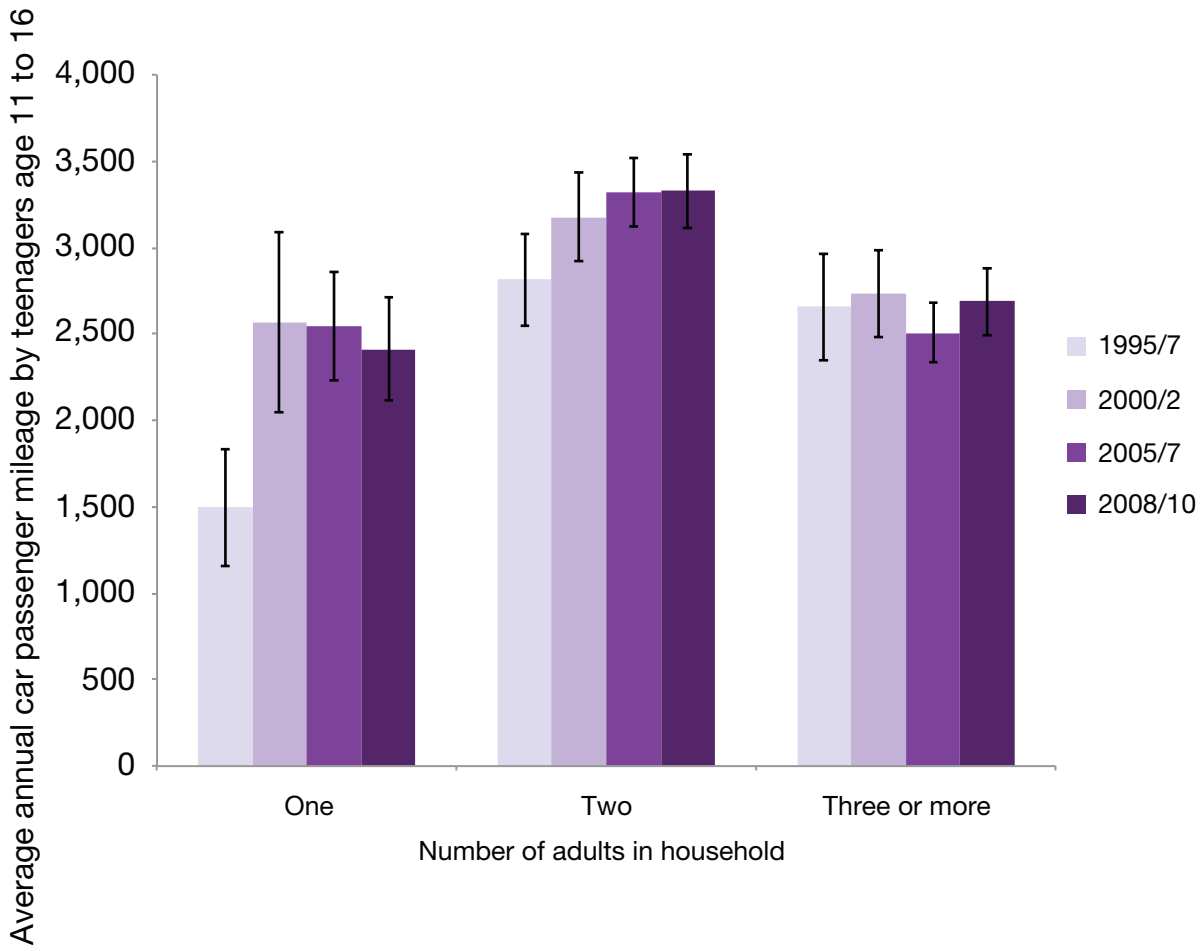


Figure 5.5 now looks at a similar relationship, but with the number of adults that pre-driving age young people live with. Unsurprisingly, it can be seen that pre-driving age young people living in single-adult households travel the fewest miles as a car passenger on average. Those living in two-adult household have the highest average mileage, with a somewhat lower level among those living with three or more adults. The overall fastest rate of increase in car passenger travel was, however, among teens living in single-adult households.

Figure 5.5: Average annual car passenger mileage by pre-driving age young people, by number of adults in household



Finally, Table 5.1 shows the breakdown of pre-driving age young people' car passenger mileage by the number of working and non-working adults in their household. Of the five combinations shown, the highest annual car passenger mileage by pre-driving age young people has consistently been in households where two or more adults are in employment and there are no non-working adults. Since 2000/2 the next-highest mileage has been in households with a single adult that is working. The lowest car passenger mileage by pre-driving age young people is exhibited by those living in households with no adult in employment.

Table 5.1: Average annual car passenger mileage by pre-driving age young people by number of employed and not-employed adults in household

Number of employed adults	Number of adults that are not employed	1995/7	2000/2	2005/7	**2008/10**
None	One or more	1,169	1,439	1,525	1,388
One	None	2,191	3,379	3,120	3,082
One	One or more	2,406	2,643	2,486	2,850
Two or more	None	3,252	3,453	3,543	3,486
Two or more	One or more	2,924	2,813	2,680	2,980

6. Summary

This paper was motivated by the sharp decrease since the 1990s in car use by young adults – the question investigated here is the extent to which similar trends have taken place among pre-driving age young people (ages 11 to 16).

With the exception of some 16-year-olds receiving disability benefit, pre-driving age young people by definition only [legally] travel in cars as passengers. In this study it was found that their car passenger travel has been increasing over time, and that this is quite different from the trend of decreasing car use by young adults of driving age. On the basis of this pattern it is argued (see pages 5-6) that the falling level of car use by young adults is likely not to have been caused by either shifting attitudes towards cars or their use of electronic communications (i.e. online activity) leading to less desire to travel.

Drawing on observations of self-reported work-related travel, it was found that over time work-related activity has become much less prevalent among pre-driving age young people. This is in keeping with earlier findings (Le Vine and Jones 2012) of long-term, structural trends of falling rates of economic activity and real incomes amongst young adults (ages 17-29). Even when the British economy overall was experiencing sustained growth in the early 2000s, real incomes of young people were trending downwards. There has been a structural trend away from young people's economic activity that is not simply taking place among those of driving age. This time-trend among teenagers under age 16 is not observable with either the Labour Force Survey, the standard data resource for labour market indicators, or the National Travel Survey's interview-level data; rather it has been identified via the NTS' travel diary instrument. Further research is advisable to confirm that this time-trend is also identifiable in other official data sources. Whilst the Department for Transport's National Survey Team indicate that there has been no change in the NTS' methodology that is likely to have caused this finding spuriously, surveys

of young people by other Government departments (e.g. the Department for Education) may be able to provide further evidence in support or contrary to this finding (Howieson 2014).

While young adults (aged 17+) are increasingly concentrating in Britain's metropolitan areas, this was not found to be the case for pre-driving age young people, who in general will not yet have left the parental home. Interestingly, this concentration in cities is also not seen for older adults – the phenomenon appears to be limited to young adults.

Most car passenger travel by pre-driving age young people is in cars that are owned by a member of the household, but about half of young adults' car passenger mileage takes place in cars that are not kept by their household.

This brief paper aimed to establish trends in teenagers' mobility that are identifiable using the National Travel Survey's datasets, and as such is limited in a number of respects. There are a number of important open questions in need of further enquiry.

Research is required to better understand why economic activity has fallen among young people, the extent to which it is likely to carry on, and its wider implications for personal mobility. It is also imperative to understand the degree to which young people's satisfaction with their lives (i.e. their subjective well-being) has changed in response to these structural changes.

While the NTS tracks why young people are travelling and what they are doing at their destinations, the picture it reveals would be enriched by drawing in other data resources that track other aspects of their lives. For instance, further research might employ the Living Costs and Food Survey, which tracks people's expenditure types and amounts (both for adults and children, age 7+), and the Census (which tracks car ownership and commuting patterns, as well as a wide range of social indicators. Ultimately, there is an urgent need to incorporate recent evidence regarding changes in young people's lifestyles and economic activity into the National Transport Model, to ensure that it is making best use of available information and therefore continues to provide credible future-year traffic forecasts.

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