



Young Adults' Licence-Holding and Driving Behaviour in the UK

A Summary of Findings

Ann Berrington & Julia Mikolai
December 2014



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Acknowledgements

The Understanding Society survey (UKHLS) is conducted by the Institute for Social & Economic Research, University of Essex. Access to the data is by permission of the UK Data Service.

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Disclaimer

This report has been prepared for the RAC Foundation by Ann Berrington & Julia Mikolai. Any errors or omissions are the authors' sole responsibility. The report content reflects the views of the authors and not necessarily those of the RAC Foundation.

Foreword

Today's young adults are experiencing a delayed transition to adulthood. Many young people are staying in education longer, entering employment later and making the transition to residential independence, partnership and parenthood at older ages.



How does this plethora of social change relate to transport use? The question has, until now, largely remained unanswered.

Since the mid-1990s there has been a decline in car use amongst young adults, especially young men. This report presents the individual, household and local level characteristics that are affecting the driving behaviour of 17-34 year olds in the UK.

The findings are fascinating, not only because they help explain the current situation, but because they point towards how car use may change in the future as young people move into employment, form families and change their residential status.

If, as this report suggests, increased levels of education and female employment lead to greater licence-holding among women, car use on the roads tells us something about what is happening in society, which is of interest and relevance beyond transport. Equally, increases in educational enrolment and unemployment, or a rise in the proportion of young adults living in the parental home, may be associated with a decline in the proportion holding a full driving licence.

This report reminds us that transport generally, and car use in particular, provides a means to an end. There is much talk about reducing car use, encouraging modal shift and meeting environmental, social, safety and economic policy ends. But it is too easy to forget that how people travel offers a window into how society is operating, both now and in the future. The study demonstrates the inadequacy of only discussing generalised averages: travel patterns and trends vary considerably between ages, genders and family circumstances. Politicians and decision makers alike would be well advised to take note of these findings as they seek to tackle key social and economic policy challenges.

Stephen Glaister

A handwritten signature in blue ink that reads "S. Glaister". The signature is written in a cursive, slightly slanted style.

Director, RAC Foundation

1. Background

Since the mid-1990s there has been a decline in car use among young adults, especially among young men. This decrease is associated with both a reduction in the proportion of young adults who hold a full driving licence, and a decline in the average annual number of car miles driven. It is important to understand the factors associated with young adults' driving behaviour, since this age group may be leading a trend away from car use.





The aim of this report is to examine the individual, household, and local area level characteristics associated with driving behaviour in the UK among young adults aged 17–34. Four dimensions of driving behaviour are investigated: whether a young adult holds a full UK driving licence; the number of miles driven in the past 12 months (among those who hold a full UK driving licence); the mode of transport used to commute to work; and the difficulties that young adults report when commuting to work by car.

The analyses are based on cross-sectional data from the first two waves of Understanding Society (UKHLS – the United Kingdom Household Longitudinal Study)¹ – a survey of around 40,000 UK households. These rich data permits assessment of the association between a large number of individual, household and local-level factors and driving behaviour. The reader should note, however, that from these cross-sectional data it is possible only to identify significant associations – the direction of causality cannot be established.

The first step is to use descriptive analyses to examine, one at a time, the association between different individual, household and area-level characteristics on the one hand, and the outcomes on the other – these being car driving licence-holding and annual car-driving mileage (for those who hold a full UK licence). Subsequently, multiple regression techniques are employed, wherein a wide set of sociodemographic differences (Box 1) are all accounted for simultaneously, to establish whether the associations persists even when the effect of these other factors is taken into account.

¹ For further details see www.understandingsociety.ac.uk

Box 1: Variables used in multiple regression models of licence-holding, and car mileage

Age	Individual income
Parental social class	Living arrangement
Level of education	Housing tenure
Economic activity	Area type ²

1.1 Societal Changes Affecting Young Adults

In the last few decades, the transition to adulthood has been increasingly delayed. On average, young adults stay longer in education and delay entry into the labour force; they also make the transition to residential independence, partnership, and parenthood at older ages.

- *Transition from school to work:* since the 1980s, entry into full-time employment is being delayed to later ages as a result of increased youth unemployment and economic uncertainty, and a delay in the age of leaving full-time education.
- *Transition to residential independence:* since the late 1990s, increasing tuition fees, economic uncertainty, cuts in many welfare benefits for young adults, and increasing housing costs have increased the number of young adults living with a parent.
- *Partnership and parenthood transitions:* between 1980 and 2010, the average age at first marriage in England and Wales increased by seven years – from 23 to 30 years, whilst the mean age of mother at first birth rose by five years, from 25 to 30.

² London, Other urban, Rural

Key Findings

Driving licence-holding

In total, 65% of males aged 17–34 and 58% of females aged 17–34 held a full UK driving licence in 2009–10.

Net of the effect of other factors (in other words when these have been taken account of), the most important **predictors of licence-holding** among men and women aged 17–34 are **age, area type, level of education, individual income** and **living arrangement**. Other variables found to have a significant association, net of other factors, are economic activity status and housing tenure.

Young men and women living in London are significantly less likely to hold a full UK licence than are those living in other urban areas. Those who live in rural areas are the most likely to hold a full UK licence.

Individual income has a positive association with the likelihood of licence-holding, especially for women.

Even after controlling for other variables (including income and economic activity status), those with intermediate (i.e. GCSE) or advanced (i.e. A levels or a degree) education are more likely to hold a licence than those with no qualifications. This educational gradient is far steeper for young women than for men.

Once other factors are held constant, employed young adults are more likely to hold a full UK licence than those who are unemployed / economically inactive. Additionally, being a full-time student is associated with a lower likelihood of holding a full UK licence among men, but not among women.

Once other socioeconomic characteristics are controlled for in a multiple regression, living in the parental home is associated with a slightly lower likelihood of licence-holding for both men and women.

Annual car mileage

Young male full UK licence-holders reported a higher car mileage (an annual mean of 8,970 miles) than young female full UK licence-holders (an annual mean of 6,067 miles).

The descriptive analyses revealed that among those who do not use their car to travel to work, there are few mileage differences according to level of education or individual income (although women with no qualifications stand out as having a particularly low mileage). However, among those who *do* use their car to travel to work, annual mileage tends to increase with education and with income.

Net of the effect of other factors, the most important **predictors of reported mileage** among young adult licence-holders are **age** and **whether or not you use a car to travel to work**, combined with **economic activity status**, **individual income**, and **area type**.

Travel to work by car

Around half of all employed young adults aged 17–34 drive themselves to work.

The overall percentage of employed young adults who drive to work increases with age, level of education, and individual income. Taking the UK as a whole, employed young adults in the highest income quintile are much more likely to drive themselves to work or to take the train than are those in the lowest income quintile – these adults are more likely to catch the bus, walk/cycle or use some other means, for example catch a lift.

Driving to work is least common among employed young adults living in London (at 23%) and most common in rural areas (at 68%).

Among young adults who travel to work by car or van, almost 50% of both men and women perceive traffic congestion or roadworks as the main difficulty when commuting to and from work by car. The second most commonly mentioned difficulty is the cost of fuel³ (40% of men and 30% of women), and around 10% of both genders mentioned the lack of parking facilities.

3 The exact wording of the UKHLS questionnaire referred to “cost of petrol”. When referring to this question the more general term “fuel” is used throughout this report.

1.2 Factors Associated with Holding a Full Driving Licence

Proportions holding a full UK driving licence are higher for men than for women, and increase with age. In total, 65% of UK young men aged 17–34 and 58% of young women held a full UK driving licence in 2009–10. While only 23% of 17-year-old men and 15% of 17-year-old women are in possession of a full UK licence, this proportion increases to 45% and 37% respectively among 18-year-olds. After age 18, the trend is overall increasing and reaches 84% of men and 74% of women by age 34.

In order to identify which explanatory variables had an independent relationship with a higher likelihood of holding a full UK licence, multiple regression analyses were estimated for men and women aged 17–34. Figure 1 shows the odds ratios associated with each category of an explanatory variable, comparing the odds of holding a full UK driving licence for individuals in that category of the variable, relative to the reference category of a variable. Odds ratios less than 1 indicate a lower likelihood of holding a full UK driving licence, whilst odds ratios above 1 indicate a positive association with licence-holding. Odds ratios further away from 1 indicate stronger effect sizes.

When other factors are controlled for within a logistic regression analysis, the factors strongly associated with an increased propensity to hold a licence include age, area type, level of education, individual income and living arrangement. Other variables found to have a significant association, net of other factors, are economic activity status and housing tenure.

Individual income has a positive association with the likelihood of licence-holding. This influence is much more pronounced among women than among men. Figure 2 shows the predicted probability of owning a full UK licence for men and women with various levels of individual income, holding other variables constant at their mean. A linear relationship is seen, with the probability of licence-holding increasing from 62% to 76% for men in the lowest to highest individual income quintile, and from 50% to 74% for women in the lowest to highest income quintile. The income gradient, net of other variables, is thus stronger among women than among men.

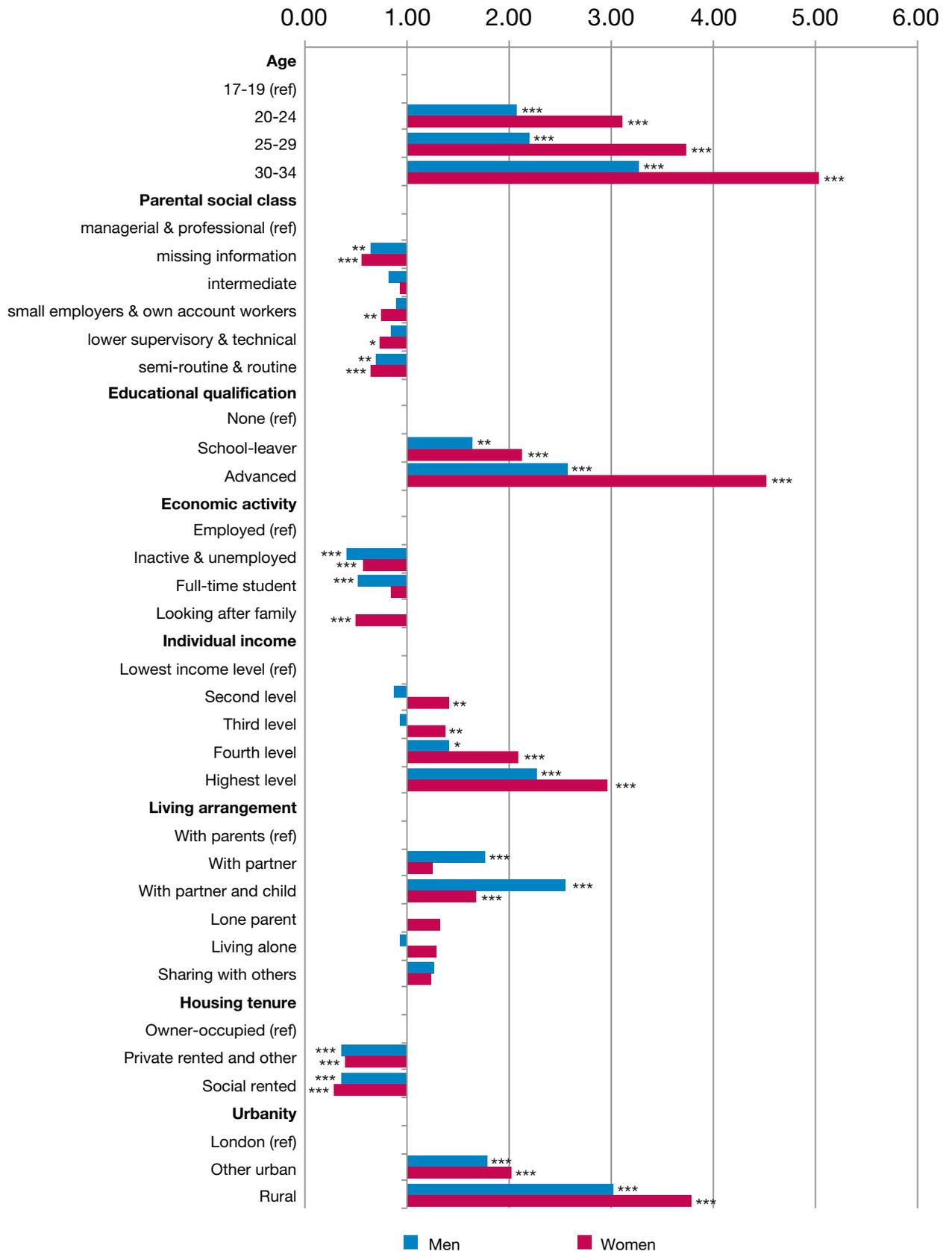
Level of education also has a positive association with licence-holding, even after controlling for individual income and the other variables. This relationship is particularly strong among women, as can be seen in Figure 3, where the predicted probability of licence-holding for women with no qualifications is just 35% as compared to 67% for women with advanced qualifications, i.e. A levels and higher qualifications (holding other variables constant at their mean). The equivalent probabilities for men are 52% and 71% respectively.

Once other factors are controlled for, employed young adults continue to be more likely to hold a full licence than those who are unemployed / economically

inactive. The odds of male full-time students holding a licence are about half those for employed men, though no significant difference is found between female students and employed women (Figure 1).



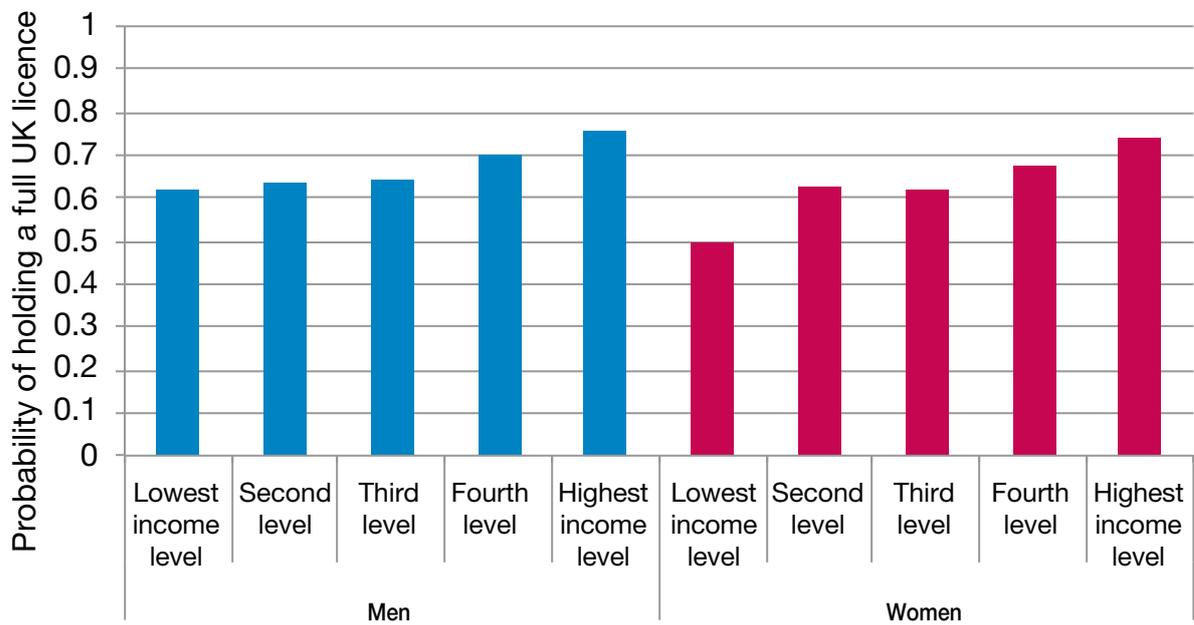
Figure 1: Results from logistic regression predicting licence-holding in UK – young adults aged 17–34, by gender: odds ratios



Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

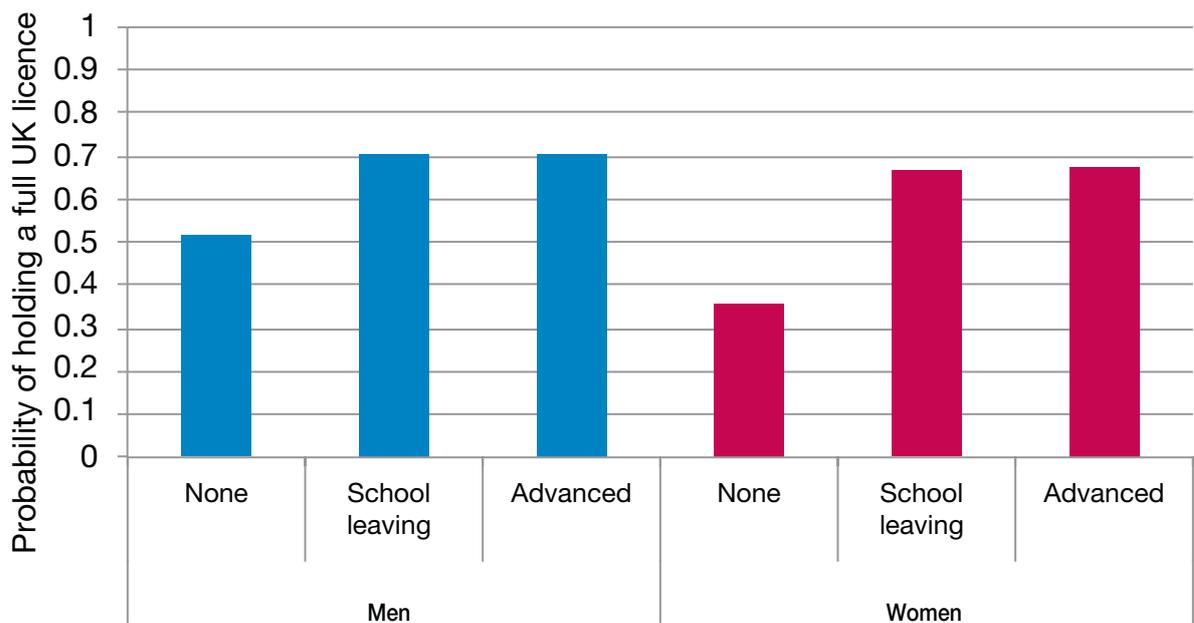
Source: Weighted estimates using Wave 1 of UKHLS

Figure 2: Predicted probability of holding a full UK licence, by gender and individual income, holding other variables at their means (based on logistic regression results from Figure 1)



Source: Weighted analyses of UKHLS Wave 1

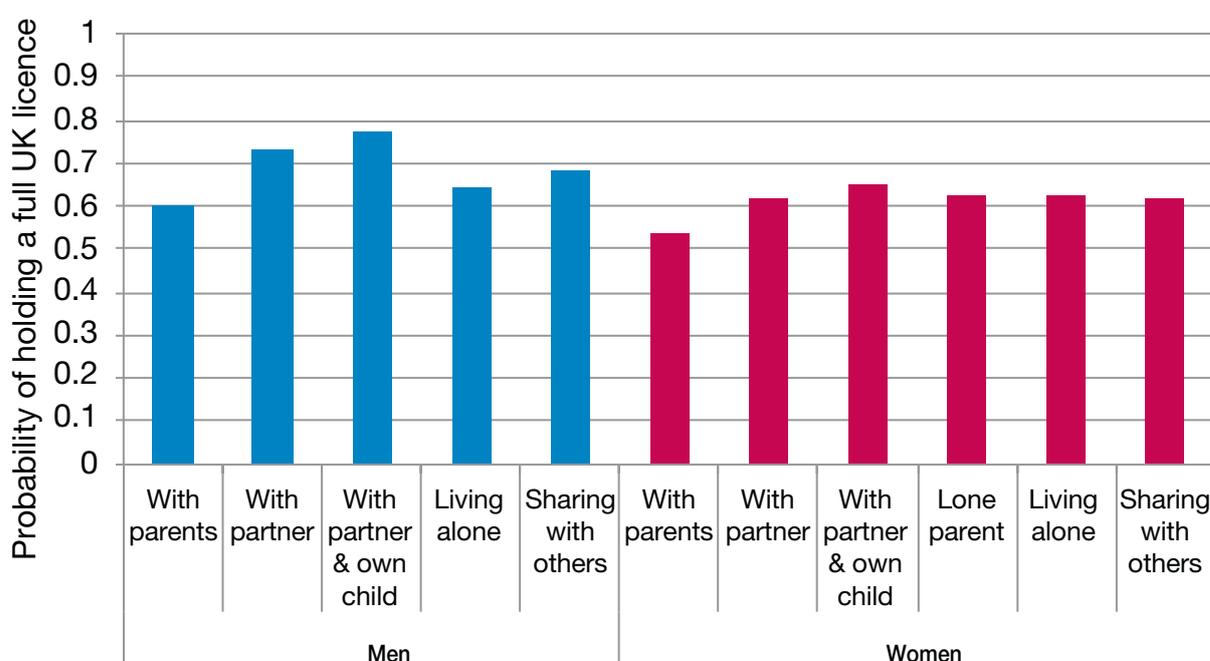
Figure 3: Predicted probability of holding a full UK licence, by gender and level of education, holding other variables at their means (based on logistic regression results from Figure 1)



Source: Weighted analyses of UKHLS Wave 1

Without controlling for other factors, young women living independently of the parental home with children of their own were found to be less likely to hold a driving licence. However, once the poorer socioeconomic characteristics of these young families is taken account of in the multiple regression analysis, it becomes apparent that family formation and living away from the parental home is associated with a higher likelihood of owning a licence. Holding other variables constant at their mean, the predicted probability of males and females who live at home holding a licence is 60% and 54% respectively, compared to 77% and 65% of males and females respectively who live independently with a partner and child (Figure 4).

Figure 4: Predicted probability of holding a full UK licence, by gender and living arrangement, holding other variables at their means (based on logistic regression results from Figure 1)



Source: Weighted analyses of UKHLS Wave 1

Note: As the number of lone fathers was very small in all age groups (less than 1% of the age group), lone fathers were coded together with men who live alone.

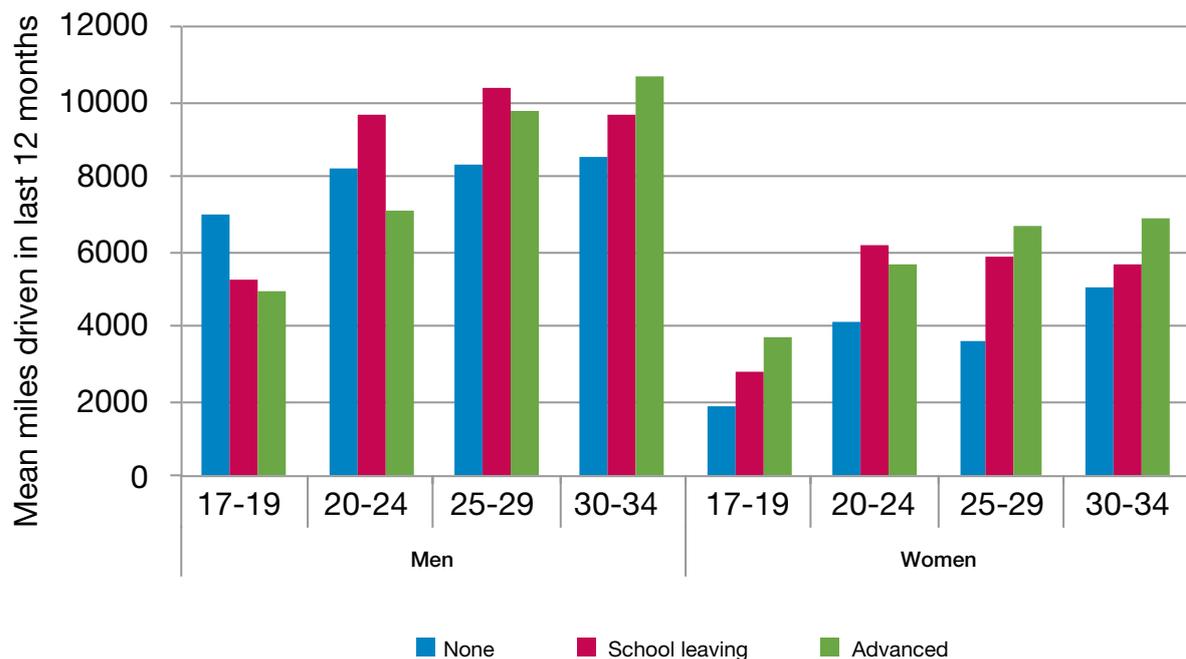
Even when other characteristics are held constant, housing tenure and area type show a significant association with licence-holding, with owner-occupiers and those living in rural areas being significantly more likely to hold a licence than those in private or social renting and those living in urban areas (particularly London).

1.3 Miles Driven Among Licence-Holders

Young male full UK licence-holders reported a higher car mileage (an annual mean of 8,970 miles) than young female full UK licence-holders (an annual mean of 6,067 miles). Average mileage increases rapidly by age for men, but less so for women.

Among men and women in their late twenties and early thirties, without controlling for other factors, car-driving mileage is higher for those with medium qualifications (GCSEs and other) and advanced-level qualifications (A levels, other higher education, and degree level education) than for those with no qualifications (Figure 5). This is not the case, however, among men younger than 25 – among these it is the lower-educated who clock up the highest mileage. Educational differences disappear once income and employment status, and whether or not the individual drives to work by car, are taken into account within the multiple regression analysis of mileage.

Figure 5: Mean annual car-driving mileage among full licence-holders, by gender, age, and education



Source: Weighted analyses of Wave 1 of UKHLS

Since a number of young adults who held a licence drove zero miles in the past 12 months, it was necessary to carry out regression analysis of mileage in two steps. In the first, the likelihood of having driven zero miles despite holding a full licence was modelled using logistic regression. Then the sample of full licence-holders who drove a car in the past year was used to model the factors predicting car mileage.

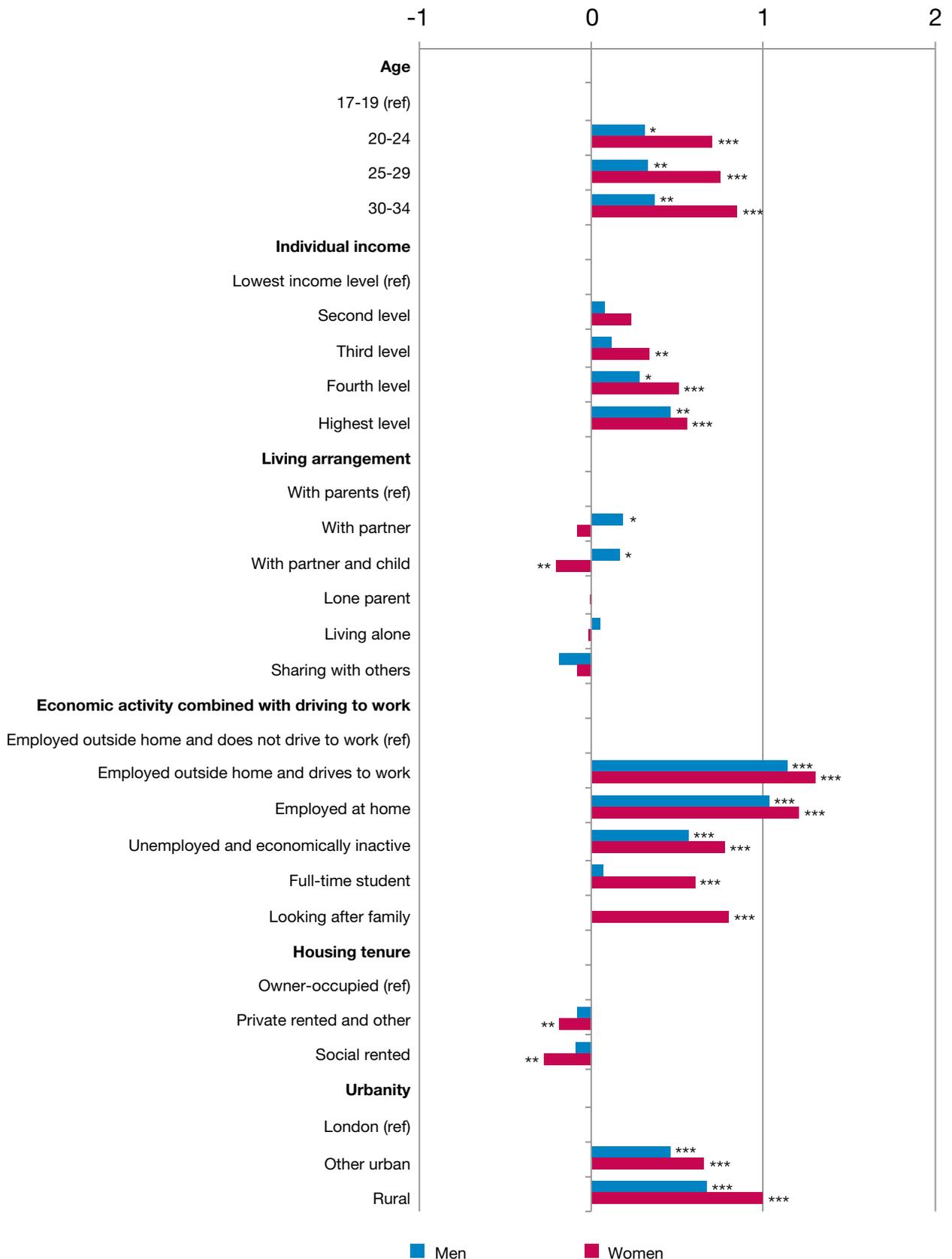
Increased odds of not driving *despite* holding a full licence are found among full-time students, the unemployed / economically inactive; those living in private rented accommodation; young adults living in socially rented accommodation; and those living in urban areas, especially London.

The next step was to perform ordinary least-squares linear regression, to model the association between several individual, household and local-area characteristics on the \log^4 of mean annual car-driving mileage among young licence-holders who had driven in the past 12 months (Figure 6).

4 For further explanation of this and other technical issues in the research, please refer to the appendices of the main research report.



Figure 6: Results of ordinary least-squares regression of log mileage – licence-holders aged 17–34 who drove in past year, by gender: standardised regression coefficients



Significance levels: * p < 0.05, ** p < 0.01, *** p < 0.001

Source: Weighted estimates using Wave 1 of UKHLS

In Figure 6, positive regression coefficients are associated with an increase in mileage compared to the baseline category for each variable.

The descriptive analyses suggested that there was a strong association between whether or not young adults drove themselves to work and the car mileage they covered. Since only those who are employed can drive themselves to work, it was necessary to create a combined indicator to cover both the respondent's economic activity and whether they drove to work. The combined variable has the following categories: employed outside the home but does not drive themselves to work; employed outside the home and drives themselves to work; employed but works at home; unemployed / economically inactive; full-time student; and (for women only) family carer.

Net of the effect of other factors, the most important **predictors of reported mileage** among young adult licence-holders are **age** and **whether or not the young person drove themselves to work**, combined with **economic activity status, individual income, and area type**.

Descriptive analyses which do not control for other factors tend to show a steady increase in mileage with age. When other characteristics are controlled for, however, there appears only to be a difference between the youngest age group (17–19) which is the reference group, and all of the other age groups (Figure 6). In other words, income, employment status, living arrangement and area type statistically explain the increase in mileage observed through drivers' twenties and early thirties.

Among licence-holders who have driven in the past 12 months, it can be seen that men and women who are employed outside home and drive to work report a higher mileage than those who are also employed outside the home but do *not* drive to work. More surprising, perhaps, is the finding that this group (who are employed outside the home but do not drive themselves to work) drive fewer miles than those who are employed at home, and even than those who are unemployed / economically inactive, or looking after family.

Once other factors are controlled for, income is positively associated with mileage among UK licence-holders who drove at all in the last 12 months; this is especially the case for women.

Men who live with a partner, or with a partner and a child, drive more miles on average than those who live with their parents. However, for women, the opposite pattern is seen: those who live with a partner and a child tend to drive fewer car miles than those who live with their parents.

The average mileage of licence-holders who drove in the past year is significantly higher among men and women in rural areas, and urban areas outside London, than it is for those who live in London.

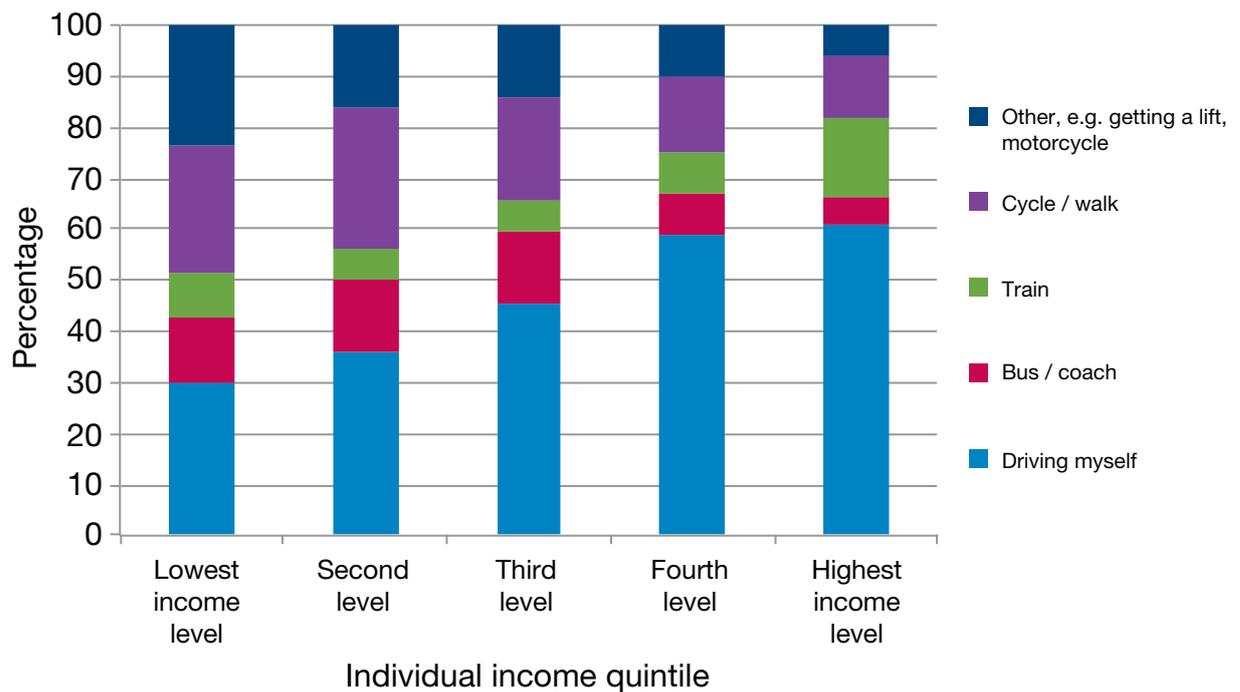
1.4 Commuting to Work

In Wave 1 of the UKHLS (2009–10), all employed young adults working away from home were asked about their mode of transport to work. This question was asked irrespective of whether the young adult held a full UK driving licence.

Overall, around half of employed men and women aged 17–34 drive themselves to work. Descriptive analyses suggest that there are significant associations between driving to work and age, level of education, individual income and area type.

As shown in Figure 7, young employed adults in the highest income quintile are the most likely to drive themselves to work, or to use the train, whilst those in the lowest income quintile are more likely to cycle or walk or use another method (which includes getting a lift and going by motorcycle or taxi).

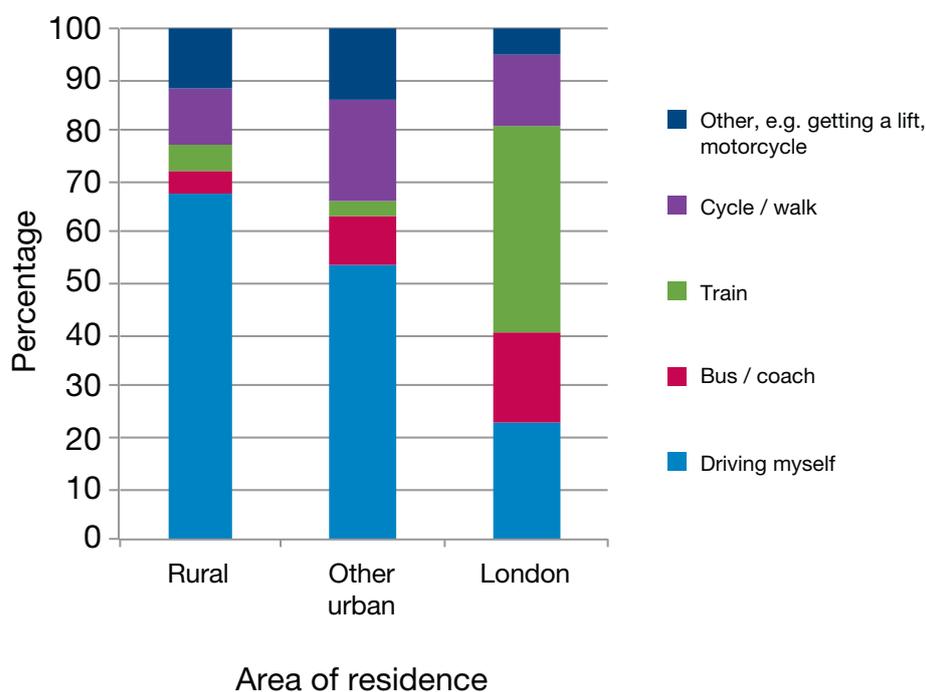
Figure 7: Mode of transport used to commute to work among employed young adults, according to individual income quintile



Source: Weighted estimates using Wave 1 of UKHLS

Note: All employed young adults include both those who do and who do not hold a full UK driving licence.

Figure 8: Mode of transport used to commute to work among all employed young adults, according to area type of residence



Source: Weighted estimates using Wave 1 of UKHLS

Note: All employed young adults include both those who do and do not hold a full UK driving licence.

As Figure 8 shows, driving to work is least common among employed young adults living in London (at 23%) and most common in rural areas (at 68%). In London, four out of ten young adults use the train/tube to travel to work, whilst 17% use the bus. These patterns for London are unlike those seen for other urban areas in the UK, where car use is much more prevalent and only 9% use the bus. Only 5% of employed young adults in rural areas reported using the bus to commute to work. Cycling and walking to work are far more commonly reported by young adults residing in urban areas outside London than in either London or rural areas.

In Wave 2 of the UKHLS (2010–11), young adults who reported that they used a car or van to commute to work were asked to identify the main difficulty they faced when commuting. Descriptive analyses suggest that traffic congestion and roadworks are the most frequently mentioned difficulties – cited by half of young men and young women aged 17–34 who commute by car or van. The second most commonly mentioned difficulty was the cost of fuel (indicated by 40% of men and 30% of women); around 10% of both genders mentioned the lack of parking facilities.

1.5 Conclusions

Controlling for other factors, the most important correlates of **licence-holding** among men and women aged 17–34 are **age, education, economic activity status, individual income, living arrangement, housing tenure** and **rural/urban locality**. Net of the effect of other factors, variables most associated with reported **mileage** among young adult licence-holders who drove in the past year are **age, whether or not they use a car to travel to work, economic activity status, individual income** and **area type**. It thus becomes apparent that many of the important predictors of licence-holding are also key predictors of car mileage.

The main factors predicting licence-holding and mileage are generally the same between the genders. The relationship of some variables with licence-holding and mileage is similar for men and women – for example locality and housing tenure. However, a consistent pattern has emerged wherein the socioeconomic gradient in the likelihood of holding a full UK licence is more consistent and sometimes steeper for women. That is to say, a higher proportion of poor, low-qualified teenage men hold a driving licence than do women in the same socioeconomic position.

Further research is needed to understand whether these trends relate to the different types of jobs undertaken by low-income young men and women, and the greater likelihood that low-income women will be out of the labour force looking after young children than is the case for men. Further research is also needed to understand whether this finding reflects the greater endurance of the car and licence-holding as a 'rite of passage' among low-income men as compared with higher-income men.

Some young adults report that they did not drive in the past 12 months, even though they had a full UK licence. It has been demonstrated that, controlling for other factors, this is associated with low socioeconomic status (e.g. low individual income, being unemployed / economically inactive, or living in social housing), or with the delayed transition to adulthood (e.g. being in full-time education, living in a shared house, and (in the case of women only) renting from the private sector), as well as being correlated with living in London.

The descriptive analyses have shown that one of the most important correlates of annual car mileage is whether respondents drive themselves to work. Those who drive to work display significantly higher annual mileage than those who do not. It is also seen that the impact on average mileage of other variables, for example education and income, depends upon whether the young adult drives themselves to work. This interaction may be an important area for future study.

In drawing conclusions about the implications of the results for future trends in young adult driving behaviour, it is important to bear in mind that these

multiple regression results are based on cross-sectional data. Hence causal relationships between the explanatory variables and the outcomes have not been established, merely associations. Nevertheless the results suggest that any future increase in educational enrolment and unemployment, or a rise in the proportions of young adults living in the parental home, may be associated with a decline in the proportions holding a full driving licence. Furthermore, increases in the proportion of the young population residing in urban areas, particularly London, might also imply a decrease in licence-holding. Counteracting these trends, likely future increases in level of education, and increased female employment (associated with the delay in family formation), may be associated with an increase in licence-holding among women.

If the decline over past decades in licence-holding and car mileage among those in their teens and early twenties is a phenomenon associated with the delayed transition to adulthood, some recovery would be expected in licence-holding when young adults come to the stage, or stages, in life in which the active use of a car is a feature, particularly when family formation takes place. This research supports the idea that living independently in a couple, especially with children, is associated with increased licence-holding. Among men, but not women, living as a couple is also associated with higher car mileage .

1.6 Further Information

Further in-depth information on all aspects of the study discussed in this summary can be found in the following detailed report, also produced by the study team: *Young Adults' Licence-Holding and Driving Behaviour in the UK: Full Findings*. Available from www.racfoundation.org

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