



# Is the urbanisation of young adults reducing their driving?

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## ABSTRACT

In recent decades, in many developed countries, licence-holding, car ownership and driving, amongst young adults have declined. One of the explanations advanced for these declines is the urbanisation of young adults, their growing concentration in the denser areas of larger cities. This study analyses the changing spatial patterns and travel behaviour of young adults over time using a complete national dataset for England between 2001 and 2011. It uses a fractional response model to analyse the changing relationship between the proportion of young adults driving to work, and using public transport to get to work, and population density and settlement size. It finds that urbanisation contributed to less driving and more public transport use amongst young adults aged 16–34. These changes followed a change in national planning policy which encouraged higher density development in urban areas. These policies caused a re-urbanisation of the population as a whole, with the strongest trends amongst young adults. The re-urbanisation of the population was accompanied by a widening of the differentials in travel behaviour between those in the densest areas and the largest settlements (who drove less) and the rest. These findings cast new light on the controversy over 'residential self-selection'. They suggest that a change in planning policy probably caused a modest national fall in driving. Residential self-selection, which is often considered a barrier to such policies, facilitated those outcomes.

## 1. Introduction

In recent decades, in many developed countries, licence-holding, car ownership and driving, amongst young adults have declined. A growing body of literature has sought to explain these trends, with respect to a range of economic, social and other causal factors (Delbosc and Currie, 2013; Aretun and Nordbakke, 2014; IFMO, 2013). A recent study commissioned by the UK Department of Transport conducted a comprehensive review of the international literature and analysed several UK datasets in order to explain the changing travel behaviour of young adults since the 1990s (Chatterjee et al., 2018). One element of that study analysed evidence on the changing spatial patterns of young adults, particularly their 're-urbanisation' (a shift towards the denser areas of larger cities and towns) in recent years. This article draws on that research.

Studies of re-urbanisation have generally found that much of the population growth in larger settlements has come from young adults (Rérat, 2016; Moos, 2014). A few studies have suggested that their growing concentration in larger settlements, particularly their inner districts, has contributed to their fall in licence-holding (Delbosc and Currie, 2013), car ownership and driving (Oakil et al., 2016; Chen et al., 2014). This study uses census data covering the population of England to compare where young adults lived in 2001 and 2011 and their use of the car for travel to work, relating those changes to settlement size and residential density. It is the

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first study to date that has analysed those relationships using national datasets.

The relationship between re-urbanisation and travel behaviour is controversial. Advocates of ‘smart growth’ (e.g. Litman, 2016) cite reductions in traffic and increases in active travel as two of several reasons for spatial planning policies that increase the density of development in urban areas. Others have argued that such policies force reluctant people (particularly young adults) to move towards inner urban areas because of a lack of new housing elsewhere (Bolick, 2000; Evans and Unsworth, 2012).

The effectiveness of such planning policies in achieving their transport objectives depends partly upon the potentially confounding force of ‘residential self-selection’. The fact that people in denser urban areas drive less and use other modes more than people in less dense suburban or rural areas is uncontested. To what extent those neighbourhood differences *cause* changes in travel behaviour, and to what extent they simply attract people with different travel preferences has been the subject of many studies. A consensus appears to suggest that a causal relationship does exist, notwithstanding the self-selection issue, although uncertainties around methodologies and data limitations remain (Cao et al., 2009). This study will provide some further evidence for that debate based on analysis of national data for England.

The next section reviews the international literature and the policy context in England where significant changes in planning policy were made in 2000 (England is the largest of the UK nations with 84% of its population; planning is a devolved power in the other nations of the UK, where policies differed). Section 3 explains how the 2001 and 2011 Census data for England was analysed. Section 4 shows the changes in the spatial distribution of young adults (aged 16–34) and the population as a whole, and their respective changes in commuting behaviour. It presents the results of regression modelling, examining the extent to which changes in the spatial distribution of young adults explain the changes in commuting behaviour. As the only travel questions in the Census ask about commuting, Section 4 also draws on the UK National Travel Survey to provide some broader context to the analysis. Section 5 discusses the implications of the findings for the population as a whole and for young adults and draws conclusions on the broader impacts of planning policy on travel behaviour.

## 2. Context

Section 2.1 will begin with a brief overview of the wider literature on the relationships between spatial factors and travel behaviour, focussing on two of the principal measures of urban form: density and settlement size, followed by the contested issue of causality. Section 2.2 will then examine the more specific evidence on the changing spatial patterns and travel behaviour of young adults. Section 2.3 will briefly review the changes in planning policy that contributed to the re-urbanisation of England’s population.

### 2.1. Density, settlement size and travel behaviour

The relationships between spatial factors and travel behaviour have generated a vast literature, which it would not be possible to fully review here; Litman and Steele (2018) and Ewing and Cervero (2010) provide two useful summaries. Much of that literature has focussed on the relationships between population densities and travel behaviour; higher densities are generally associated with reduced travel distances, less driving and more travel by other modes. Litman and Steele state that on its own the travel impacts of population density are “modest”; it is associated with a range of other factors that exert a more direct effect on people’s travel behaviour such as: regional accessibility, land-use mix, parking management and transport system diversity. Gorham (2002) characterised many studies in this area as sharing “a restless drive to displace density as the proxy for all things land-use”. The enduring use of density as a proxy partly reflects data availability but is also because rising population densities entail many of those other factors. For example: it is easier to provide better public transport in denser areas; pressure on road capacity tends to increase and the need for parking constraint becomes more pressing in such areas (Melia et al., 2011).

Population density is the most common proxy for *local* spatial factors; settlement size has been commonly used as a proxy for *sub-regional* spatial factors. There is a negative association between settlement size and travel by car in the UK (Headicar, 2013) and some other European countries (Limtanakool et al., 2006), although the picture is less clear in the United States (Stead and Marshall, 2001). The interactions between density, settlement size and settlement structure (e.g. centralised or decentralised, monocentric or polycentric) are complex, although Næss (2012) has observed that in general the association between population density and travel behaviour is strongest within larger settlements.

Although the aggregate relationships between these factors are clear, the direction of causality is less so. If residents of dense neighbourhoods in large cities drive less than suburbanites or small town dwellers is this difference *caused* by where they live, or do people choose to live in places that facilitate their pre-existing travel preferences (‘residential self-selection’)? Cao et al. (2009) reviewed 38 empirical studies of this issue; nearly all of them found that a statistically significant influence of spatial factors remained after controlling for residential self-selection, although self-selection also explained a significant part of the observed variations. The studies used a range of methods to model various interactions between attitudes, location and travel behaviour but none of them were able to capture all the possible influences. Residential self-selection is one possibility; so is the opposite mechanism, where moving to a different neighbourhood changes people’s transport attitudes (Næss, 2014a). The causal mechanisms behind gradual change over time are difficult to identify with any confidence, particularly where changing neighbourhoods are occupied by new generations whose attitudes are still evolving.

One reason for the plethora of studies on residential self-selection relates to the controversy over planning policy mentioned in the introduction. If most people retain their existing travel preferences when they move home, then urban intensification might fail to reduce motor traffic; its main impact would be to move reluctant people, determined to continue driving, into dense urban areas. Næss (2014b) argues that the confounding role of self-selection has been exaggerated and “hijacked” by advocates of “sprawl” to

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