

Transport for the North Expert Panel - Key drivers and uncertainties

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1 Introduction

Section Overview

Travel is a derived demand. It is the result of people needing and wanting to undertake activities: to travel to school or work, visit the dentist, purchase goods, undertake business, enjoy leisure activities, to name a few. How people meet these needs has a substantial impact on travel. And the future may not look like today. This short note sets out five important societal factors that could have an influence on future travel and the uncertainties surrounding them when thinking forward to 2050. Its aim is to generate discussion about how these may play out in the region in future and the potential impacts on travel.

This paper, drafted in 2019, prior to the Covid 19 pandemic provides examples of long term trends and potential policy developments relating to this theme which are likely to have an impact on travel outcomes, an influence on TfN's transport strategy, and on environmental, social and economic outcomes across the Northern Powerhouse. The current global impacts of COVID-19 are creating significant additional uncertainty, however basic conclusions in this note still remain or have been emphasised during 2020.

2. Income and wealth

There is a long-established relationship between income and travel, with increases in household income or GDP/capita leading to increases in travel. A recent review of the literature finds income elasticities for passenger travel demand in the region of 0.5 to 1.4.¹ Increasing wealth is associated with increasing consumption, which is associated with increasing levels of freight travel. Increases in wealth may also support transport infrastructure investment. However, future incomes and wealth are uncertain. Brexit, national policies on geographical and population wealth distribution, increased ageing of the population and increasing automation may mean that income growth rates are higher or lower than they have been in the past. There may also be changes in the distribution of wealth. Some segments of society, eg the elderly, may continue to hold more wealth as young people struggle to find permanent employment and pay off their debts or more equitable wealth may ensue. Further, there may be early evidence that people's consumption patterns are changing and that they are 'spending more on doing stuff, choosing instead to cut back on buying stuff'.

¹ Elasticities are a measure of the sensitivity of travel demand to key explanatory variables, in this case GDP/capita. They can be quantified by the ratio of the percentage change of one variable to another, with the latter being the explanatory variable. So, a GDP/capita elasticity of 0.5 means that if GDP/capita increases by 10 per cent, travel demand would increase by 5 per cent.

3. Changes in working patterns

Journeys to work place a disproportionate burden on the transport network because of their relative length and their concentration at particular times of the day. The [DfT report](#) a downward trend in the average number of commuting journeys per worker per week. A number of reasons were put forward for this decrease, including more people working from home, working fewer days per week, making [more complicated trips](#), working part-time or being self-employed. Changes in work patterns in future are likely to continue to impact on commuting travel. People are likely to work for longer as the retirement age increases and older people stay fitter and healthier for longer. The increased convenience of working at home - perhaps in combination with increasing costs of office space and improved information and communication technologies - may lead to increasing numbers of people who want to work from home; although, employers may push back against this. Fewer people may work in regular employment, with many working in the so-called [gig economy](#). Over the longer term, increased automation could change employment rates or types of employment.

4. Location of jobs and homes

The last decade has seen an increasing share of population growth in cities. This may reflect changing types of jobs in the economy, changing cultural and social preferences, both by business and the population, quality of services or migration trends, amongst other possible explanations. Increasing urbanisation is associated with lower levels of personal car ownership and car use, use of better public transport services as well as access to new modes of transport, such as ride hailing services (like Uber), shared bikes, etc. However, increased urbanisation can also bring planning challenges, particularly in terms of traffic congestion and increased housing prices. It is not clear whether urbanisation trends will continue in the future, how cities will accommodate such increases, or whether there could be a reversal of these trends.

5. Car ownership versus 'usership'

Despite the continued dominance of private car ownership, and the need for the use of a car for some, changes are taking place. The number of new car registrations in [2018 was lower than in 2017 and 2016](#). [Young people today are much less likely to have a driving licence or own a car compared to previous generations](#). Car sharing clubs (eg Zipcar, Car2Go) and ride hailing services (Uber) are growing in popularity, particularly in cities, offering people the chance to use a car when they need one, rather than owning a car that sits idle for most of the day. Many expect demand for these services to continue to grow. In the longer term, autonomous vehicles could have a disruptive impact on personal car ownership. For example, Arbib and Seba (2017) put forward a vision where the combination of [shared electric autonomous vehicle services make future car travel between two and ten times cheaper than now](#). They predict that "by 2030, within 10 years of regulatory approval of autonomous vehicles (AVs), 95% of U.S. passenger miles traveled will be served by on-demand autonomous electric vehicles owned by fleets, not individuals'. Such services could increase accessibility for many, including young people and others who can't drive now for medical or other reasons, supporting social mobility and inclusion; although

not if these services lead to increases in car travel and congestion. However, others predict that personal car ownership will remain high, even with convenient shared services available. A [2017 McKinsey](#) survey indicates that 67 per cent of all US respondents prefer driving their own cars over using ride-hailing apps, and 63 per cent are not interested in trading their vehicles for shared-mobility rides – even if they are free. A recent report for the [DfT](#) finds that ‘While participants realised that sharing ownership or occupancy could help achieve many of the potential benefits of CAVs, they were often reluctant to give up their current transport for those benefits’, even if it meant cost savings.

6. Attitudes to health and the environment

Currently, there is little evidence on whether attitudes to health or the environment are changing and whether such changes impact travel behaviour. However, in future, as the impacts of climate change become clearer, environmental awareness could increase leading to travel behaviour change, eg through purchase or use of vehicles with lower emissions, switching to “greener” modes or travelling less. There is some evidence that we may be starting to see the green-shoots of change in [reductions in air travel and switching to rail](#) for longer-distance travel. Increased environmental awareness may also mean that the public may be more open to policies to reduce carbon emissions. Alternatively, use of vehicles with lower emissions may lead to travel rebound effects, where people travel as much as now, or even more than now, because of potential reductions in the cost of travel, say from use of electric cars, and less “guilt” about their carbon footprint. A greater focus on the importance of health could lead to increased levels of walking and cycling and/or more awareness of air quality issues, which could again influence travel behaviour and amenability to policy change.

7. Initial List of Key Uncertainties

The following table sets out these factors and possible end states:

Factor	Uncertainty / end states			
Income and wealth / income distribution	Lower income growth/stagnation / high disparity	Lower income growth / stagnation / more equitable distribution	Moderate to strong income growth / high disparity	Moderate to strong income growth / more equitable distribution
Changes in working patterns	Employment rates similar to now / traditional work patterns	Employment rates similar to now / work much less patterned	Lower employment rates	
Location of jobs and homes	Jobs and homes increasingly being located in cities with increased densification	Jobs and homes increasingly being located in cities with increased sprawl	Jobs increasingly being located in cities with homes located in transport-friendly locations	Jobs and homes more dispersed
Ownership versus ‘usership’	Personal car ownership and use remains dominant	Mix of personal car ownership and use with shared car use	Shared car use dominant	
Attitudes to health and the environment	Climate change impacts lead to increasing environmental awareness and action / more emphasis on health	Climate change impacts starting to be felt, but with little impact on environmental attitudes / little impact due to health awareness	Climate change impacts starting to be felt, leading to polarisation of attitudes, behaviour and conflict around acceptability of green policies	



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