

The Role of Transport in Supporting a Healthy Future for Young People



Sustrans and the Centre for Transport & Society

17 October 2019

Kiron Chatterjee and Miriam Ricci (UWE Bristol) and Andy Cope and David Corner (Sustrans)



Centre for
Transport &
Society



UWE
Bristol
University
of the
West of
England



sustrans
JOIN THE MOVEMENT

Document details	
Reference ID:	SUSR
Version:	2.0
Circulation Status:	External
Issue Date:	17/10/2019
Author(s):	Kiron Chatterjee and Miriam Ricci (UWE Bristol) and Andy Cope and David Corner (Sustrans)
Contact:	Kiron Chatterjee (Kiron.Chatterjee@uwe.ac.uk)
Preferred form of citation:	Chatterjee, K., Ricci, M., Cope, A. and Corner, D. (2019). The Role of Transport in Supporting a Healthy Future for Young People. Report to Health Foundation. Sustrans and UWE.

For any queries or correspondence regarding the report, please contact the UWE Project Manager

Kiron Chatterjee
 Associate Professor of Travel Behaviour
 Centre for Transport & Society
 Faculty of Environment & Technology
 University of the West of England, Bristol
 Frenchay Campus
 Coldharbour Lane
 Bristol BS16 1QY

E-mail: Kiron.Chatterjee@uwe.ac.uk
 Tel: +44 (0) 117 32 82032

Sustrans is the charity making it easier for people to walk and cycle.

We connect people and places, create liveable neighbourhoods, transform the school run and deliver a happier, healthier commute.

Join us on our journey.

www.sustrans.org.uk

Registered Charity No. 326550 (England and Wales) SC039263 (Scotland).

Contents

Contents	2
Executive Summary	4
Review purpose	4
Policy and research recommendations	8
1. Introduction	11
1.1 Purpose and structure of this report	11
1.2 Context and methods	12
2. Concepts and theory	14
2.1 Transport, social exclusion and wellbeing	14
2.2 Capabilities and functionings	16
2.3 Life course perspective	20
3. Review of evidence on young people and transport	22
3.1 General transport trends	22
3.2 Young people aged 11 to 16	24
3.2.1 Travel behaviour	24
Travel in general	24
School travel	25
Investigation of trends in the travel of 11 to 16 year olds	26
Independent mobility	26
3.2.2 Attitudes to transport	27
Transport perceptions	27
Travel socialisation	28
Future intention to drive	28
3.2.3 Impacts of transport	29
Access to education	29
Access to social activities	30
Physical activity	30
Independence and self-worth	31
3.3 Young people aged 17 to 24	34
3.3.1 Travel behaviour	34
Driving licences and car access	34
Travel of 17-20 year olds	35
Travel of 21-24 year olds	37
The significance of getting a driving licence	38
3.3.2 Attitudes to transport	39

Attitudes to driving	39
Attitudes to public transport, walking and cycling	41
3.3.3 Impacts of transport	42
Access to education and training	42
Access to employment	43
Transport costs and housing	45
Physical activity	46
Independence, autonomy and wellbeing	47
4. Policy context and measures	49
4.1 Policy context and technological innovations	49
4.2 Policy measures to support access to education, training and employment	51
4.3 Policy measures to improve public transport	54
4.4 Policy measures to increase walking and cycling	56
4.5 Policy measures to make driving safe and affordable	56
4.6 General policy measures	56
5. Transport and young people's development	58
6. Policy and research recommendations	63
7. References	67
Appendix 1. The Capability Approach	77

Executive Summary

Review purpose

The Health Foundation is an independent charity committed to bringing about better health and health care for people in the UK. The Health Foundation's Young people's future health inquiry is a first-of-its-kind research and engagement project that aims to build an understanding of the influences affecting the future health of young people. The two-year inquiry, which began in 2017 aims to discover:

- whether young people currently have the building blocks for a healthy future
- what support and opportunities young people need to secure them
- the main issues that young people face as they become adults
- what this means for their future health and for society more generally.

The Health Foundation commissioned Sustrans and the University of the West of England as part of the Policy strand of this project. The overall aim of the current review was to 'assess the role of transport in supporting young people to develop and transition to an independent healthy future'.

This, along with six other commissions, aim to understand some of the structural and policy issues facing young people. Alongside this policy programme, the inquiry involved engagement work with young people, site visits in locations across the UK, as well as a research programme run by the Association for Young People's Health and the UCL Institute of Child Health. A findings report for the programme will be published in autumn 2019.

Young people, transport and health

Between the ages of 12 and 24, young people go through life-defining experiences and changes. During this time, most will aim to move through education into employment, become independent and leave home. This is also a time for forging key relationships and lifelong connections with friends, family and community.

These milestones have been largely the same across generations. But today's young people face opportunities and challenges that are very different to those experienced by their parents and carers, and from those they imagined themselves to be facing during their teenage years.

This report focuses on the transport available to young people and how it's functioning can shape the long-term health of young people today. The data shows us that young people are making less trips than they did 20 years ago and see cost as a major barrier. This raises questions about young people's opportunities to maximise their long-term health – throughout our engagement work young people told us about the importance transport to connect them to opportunities, whether this be work, a chance to develop skills, or places where they can build relationships.

Transport is often directly linked to health in terms of its ability to pollute the environment, or its role in encouraging an active lifestyle. What has become clear is its role not just as a determinant of health, but how it could enable or, when absent, block a young person's ability to access opportunities. Its presence or absence affects where a person chooses to live, and decisions about what jobs they accept. It can affect their personal relationships with family and friends, and their relationship with their wider community.

This matters because these building blocks – a place to call home, secure and rewarding work, and supportive relationships with their friends, family and community – are the foundations of a healthy life. There is strong evidence that health inequalities are largely determined by inequalities in these areas – the social determinants of health. So while young people are preparing for adult life, they are also building the foundations for their future health.

Young people's future health isn't simply their own concern, it is also one of society's most valuable assets. Their connectedness is therefore of paramount importance.

Transport use and attitudes

Society is organised around car transport but this presents difficulties for those groups in the population who are unable to drive, in particular young people, and it generates various societal problems. The bus is the most important alternative to the car but there have been reductions in bus service provision in recent years in the UK due to decreased public funding and bus and rail fares have risen considerably more than wages.

Getting lifts by car dominates the travel of under 17 year olds, making up over half of journeys made. As children get older they travel more independently and buses make up a larger share of their travel (see Figure 1). The journeys of 11-16 year olds have become lengthier over past decades and this has contributed to increasing car passenger travel and less walking. The share of car passenger travel increases with higher household income. Bus use is particularly important for those living in households without a car (see Figure 2).

Figure 1: Mode share percentage for trips made by children and young people in England in 2017

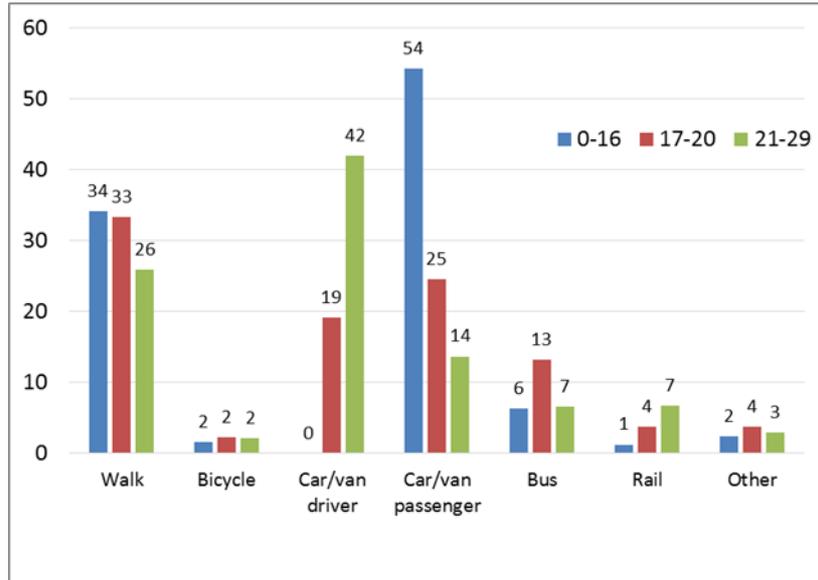
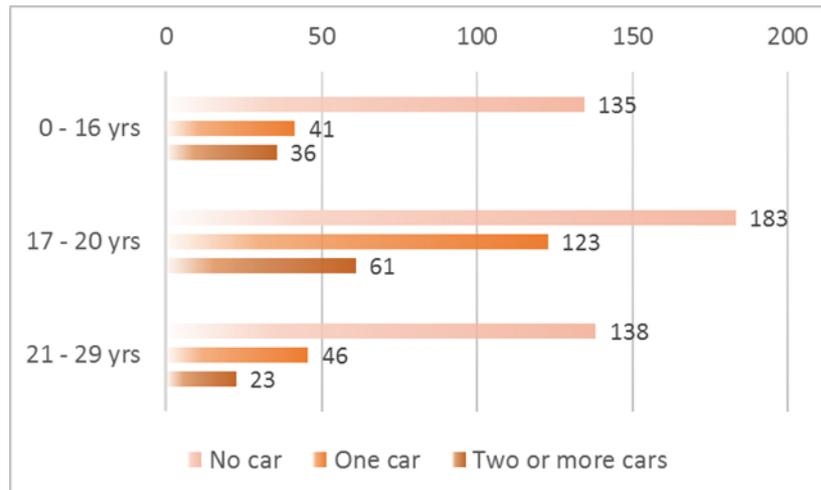


Figure 2: Bus journeys per year and household cars in England in 2016-17



Research has shown that young people of school age like the opportunity to use public transport for the independence it can give but they are critical of its quality. Hence when it comes to travel to school they would rather go by car or cycle. Looking ahead, most members of this age group express a desire to drive when they reach driving age, due to the freedom and autonomy it would give them, but they are aware of costs and risks of driving.

Three in ten 17-20 year olds have a driving licence, whereas 25 years ago it was nearly five in ten. There has also been a reduction in driver licence holding among 21-29 year olds from 75% to 67%. The high costs of learning to drive and run a car are noted by young people, but they also refer to lack of immediate necessity to drive (which can be connected to a smaller proportion of young adults being in full-time employment, living in their own home and starting a family than previously being the case). Driving is much more common for those in rural areas who drive three times the distance on average of those living in urban areas. There has been a fall in the number of journeys made by all age groups in the last 15 years but the reduction is particularly pronounced for those aged 17-20 and lack of transport options is likely to be a contributor to this. There has been a shift away from making journeys as a car driver or passenger to walking in the last 15 years for this age group.

Qualitative research with young people of driving age range has found some people still see cars as the key to freedom and pursuing their goals and lifestyles, but face obstacles in doing this from costs of learning to drive and insurance in particular. Other young people prefer to live in urban centres and manage without a car. They express positive attitudes towards public transport, walking and cycling. The car no longer is a status symbol in the way it was in the past. Young people have a desire to be mobile while at the same recognising the detrimental impacts of mobility. This highlights the potential for engaging young people on sustainable transport solutions.

There is no evidence for the UK that use of shared mobility services (such as Uber) is replacing other forms of transport to any substantial extent. Research in the United States indicates millennials (born in the 1980s/1990s) use smartphone mobility apps and new shared mobility services more than older generations but this is associated more with economically advantaged young people living in highly urbanised areas.

Impacts of transport

The impacts of transport on young people's development and future prospects identified from the literature review can be summarised in terms of eight 'impact pathways'. These are different ways in which transport affects the lives of young people. They concern how transport affects the long-term realisation of potential of young people through the opportunities they have available to them and the quality of those opportunities. Previous research has focused on the physical health impacts on young people of traffic exposure and these impact pathways offer important additional knowledge on how transport affects young people's lives.

Figure 3: Impact pathways

1. Education and training options	Young people can have limited local education and training options due to lack of transport to get to more distant opportunities
2. Participation in out-of-school activities	A household car enables children to participate to a greater extent in out-of-school activities; participation in out-of-school activities has been shown to benefit children economically in the long run
3. Physical activity and mental wellbeing	Walking and cycling contribute significantly to recommended physical activity levels for young people who travel in these ways and physical activity is linked to better mental wellbeing
4. Independence, autonomy and self-worth	Independent mobility allows young people to develop social connections and choose their own activities, providing increased autonomy in their lives
5. Capabilities and willingness to use transport options	Young people supported and encouraged to use alternatives to the car as children are more likely to be willing to use them when older
6. Employment opportunities	Young people are disinclined from considering jobs with difficult journeys by public transport and employers are reluctant to offer jobs to them
7. Stress, fatigue and low self-esteem	Poor quality of the built environment for walking (unattractive, mistreated and 'forgotten' places) causes psychological and emotional stress
8. High transport costs and job/housing immobility	Young people are less likely to change their job or move home to seek improved career opportunities than previously was the case with high transport (and housing) costs seen as contributory factors

Policy and research recommendations

The call has been made by young people themselves to improve the transport offer to them, particularly with respect to public transport affordability. There are notable initiatives such as free bus travel for under 18 year olds in London and 16-18 year olds in Manchester. Government and the transport industry is placing great importance on new transport technologies but there is concern that current developments are not available to all segments of society, including young people. Our policy and research recommendations follow based on our review of existing literature and analysis of how transport can affect young people's development and future prospects.

Re-prioritising investment

1 Transport subsidies should be redirected as a force for positive change for young people

A more equitable transport system would reflect the full environmental and other negative costs to society of private car use and reward young people for travelling sustainably.

Subsidies and policies that stimulate car use carry negative effects to public health, and tend to impact disproportionately on those living in more deprived areas. The full costs of environmental impacts of driving (e.g. air quality, carbon emissions, noise) are not paid by the motorist. A transformative transport system would reward positive travel choices, rather than locking-in behaviours with a greater negative cost to society, and thereby benefit younger people.

2 Government needs to support systems for concessionary fares, bursaries and loans that are clear, universal and consistently applied

The high cost of and lack of access to good quality public transport is limiting opportunities available to young people and holding back their potential. Concessionary fares systems need to be non-discretionary and funded across the UK to benefit those younger people who are most in need of reduced travel costs. Concessionary fares should cover all those subject to compulsory study or training (16 and 17 year olds) and all those people under 25 looking for work and in the first months of employment. Educational institutions should review their transport bursary schemes and ensure they are adequately addressing the needs of all students facing hurdles in travelling and all employers should be required to provide transport loans so that younger people can access more affordable public or active transport through season tickets and other discount schemes.

3 Government should invest a greater proportion of the overall transport budget in walking and cycling and encourage younger people to travel actively

Transport investment should align with the move towards preventive healthcare. Too few young people are walking or cycling, partly due to poor physical environments to do so and partly due to not developing skills and capabilities. This represents a risk factor for their current and future physical health and mental wellbeing. Active travel by walking or cycling is better for young people's health and wellbeing than using cars. The planning system should prioritise the creation and retention of jobs for younger people in locations that can be served by walking, cycling or public transport. Shared bicycle and other transport schemes should allow for those without a bank card to sign up. Young people should have access to free cycle training designed to achieve the take up of cycling for routine journeys. Schools and other educational institutions should have appropriate infrastructure to provide for them to be reached by walking and cycling, and infrastructure for cycling and walking should address the needs of younger people in terms of destinations, amenity and convenience.

Enhancing decision-making

4 Transport planning decisions should acknowledge impacts of transport on young people and reflect the need to reduce inequality in transport access in the investment decision making process

Decisions on transport planning do not sufficiently acknowledge the wider societal and wellbeing impacts of transport for young people. Transport appraisal and planning needs

to take a whole-system approach and to ensure that the wider benefits to young people of well-connected places, both in the short-term and longer-term impact on their wellbeing, are taken into account when appraising investment. Investment decisions should be guided by whether they reduce inequality in transport access, including for young people.

5 Planning regulations should ensure that housing connects younger people to sustainable transport options

The design and location of where people live has a significant influence on how people travel. New development that is attractive to younger people should wherever possible be located within or adjacent to existing urban areas or commuter hubs. Existing housing stock that is suited to younger people should be connected to transport infrastructure that supports mobility for younger people.

Better understanding young people's needs

6 Transport regulators and providers should engage with local youth councils and other fora to ensure they are aware of the needs and views of younger people on local transport issues

There needs to be a clearer voice for young people in planning and delivering transport services. Stakeholders in local authorities with similar characteristics should share learning with each other about the approaches they are adopting to give young people a voice and address their needs. Public transport planners and providers need to recognise many younger people's work increasingly involves shift or weekend work and services need to respond appropriately.

7 Government needs to initiate in-depth research and analysis of young people's travel patterns, needs and attitudes, and of the role of transport access and choice in supporting young people to develop and transition to an independent, healthy future

The role of transport as one of the key building blocks in supporting young people to develop and transition to an independent healthy future has not been sufficiently acknowledged and it is surprising there is not a better understanding of young people's travel patterns, needs and attitudes. Our review identified a large range in young people's experiences and attitudes depending on their income, location and the nature of the transport offer near them. It is therefore important for this research to cover different socio-economic circumstances and geographical areas and to examine the relationship between access to different modes of transport and educational, employment and social outcomes for young people.

1. Introduction

“Transport is not an end in itself, but rather a means allowing people to access what they need: jobs, markets and goods, social interaction, education, and a full range of other services and amenities contributing to healthy and fulfilled lives.”

(United Nations Secretary-General's High-Level Advisory Group on Sustainable Transport 2016)

1.1 Purpose and structure of this report

The Health Foundation has identified that a flourishing and prosperous society is dependent on healthy, educated young people with the life skills to become thriving adults. The Health Foundation's Young people's future health inquiry is a research and engagement project that aims to build an understanding of the influences affecting the future health of young people. The Foundation's engagement with young people as part of this inquiry has shown that transport is one of the potential building blocks to young peoples' ability to thrive. The Foundation therefore commissioned this evidence review of the transport circumstances of young people in Great Britain and Northern Ireland. The review considers young people between 11 and 24 years of age. The overall aim of the review was to:

Assess the role of transport in supporting young people to develop and transition to an independent healthy future.

It sought to answer four questions:

- 1 What is known about how transport influences young people's development and transition to independence, both positively and negatively?
- 2 What is known about the current context and factors that shape young people's use of transport in this respect? What geographical differences and regional policy decisions shape young people's experiences?
- 3 What are the current trends with respect to these issues and what are the likely implications of these trends?

- 4 What would a transport system which supported young people's development and transition to independence look like?

This report on the outcome of the review is arranged as follows:

- In section 2 we consider concepts and theory that are helpful in interpreting research on the role of transport in supporting young people's development;
- In section 3 we set out what the literature tells us about how transport is used and viewed by young people and how it impacts on their lives;
- In section 4 we review policy measures (proposed and implemented) aimed at better enabling transport to meet the needs of young people;
- In section 5 we summarise how transport affects young people's development and future prospects based on the literature review; and
- In section 6 we set out policy and research recommendations in the light of our review.

1.2 Context and methods

As part of its Young people's health inquiry, the Health Foundation conducted an engagement exercise with approximately 100 young people aged 22–26 across the UK to identify the assets which they felt had contributed to their current situation and also commissioned an online survey of a sample of 2,000 young people aged 22–26 to gather their views on the challenges they faced. It then explored these questions with young people and interested stakeholder organisations in five places across the UK. The importance of transport and the challenges young people faced accessing it, was perhaps the most unexpected finding across all the five sites. These challenges were cited as a barrier to education, employment and other activities. Transport provided a connecting role in young people's lives and when absent, limited their ability to take advantage of opportunities and increased the inequalities in access to the services and activities that would help them build the assets needed for a smooth transition into adulthood.

The Health Foundation commissioned us to develop an evidence review on transport and young people. We undertook a Rapid Evidence Assessment (REA) to enable a policy-relevant synthesis of evidence to be achieved in a relatively short period of time. We identified relevant literature based on previous projects we had conducted on transport and young people, a search of bibliographic databases and following up promising sources mentioned in the items we reviewed ('snowballing'). We did not confine our search to academic literature but also considered 'grey literature' such as government/professional/think-tank reports. We scored items on four criteria (topic relevance, quality of evidence, applicability to the UK, currency) and selected those items scoring

strongly overall. We designed a pro forma to ensure we had a mechanism for capturing key information from reviewed items. Initially, we identified 51 items to review in full with reference made to numerous other items as the review proceeded. Our initial findings, including a synthesis of previously identified policy issues and recommendations, were presented at a roundtable. These were then refined in the light of discussion at a roundtable meeting to which key stakeholders were invited from the sector as well as several young people from the Health Foundation's digital engagement panel.

2. Concepts and theory

In this section we introduce concepts and theory that are helpful in interpreting research on the role of transport in supporting young people's development.

2.1 Transport, social exclusion and wellbeing

The social determinants approach to health emphasises the importance of creating the conditions that promote good health across the life course and acting early in life to increase people's ability to build the foundations needed to thrive (Lovell and Bibby, 2018). The social determinants of health are the circumstances in which people are born, grow, live, work, and age. These circumstances can enable individuals and societies to flourish, or not. In this review we consider how the transport circumstances of young people, combined with their broader circumstances, affect their development. In line with the Young people's future health inquiry we investigate how transport affects young people gaining key assets in youth (in particular financial and practical support, emotional support, personal connections and skills and qualifications) and thus securing building blocks in adulthood for a healthy future (in particular housing, good quality work, stable relationships and good self-esteem).

The role of transport in influencing people's life chances was the subject of a major review by the Government's Social Exclusion Unit in 2003 (SEU, 2003). This showed how transport disadvantage can be an important factor in social exclusion (see Box 1 for definitions of terms). The barriers to accessing jobs and services identified in the review were:

- Availability, reliability and physical accessibility of transport that takes people to desired destinations at the time they need to get there;
- Affordability of transport;
- Services people need/want to access located in places inaccessible by public transport;
- Safety and security, especially by bus and on foot; and
- Limited travel horizons.

Young people are at particular risk of transport-related social exclusion due to lower incomes, depending on parents, not being old enough to drive or unable to afford a vehicle and being

reliant on public transport (Harper, 2005). Specifically when it comes to the affordability of transport, the concept of transport poverty has been coined (see Box 1) which is helpful at distinguishing those people who have access to transport but find it difficult to afford its costs.

The links between transport-related social exclusion and wellbeing have been conceptualised by Delbosc (2012). Transport is suggested to influence subjective wellbeing (see Box 1) via three pathways:

- 1 Accessibility – enabling access to activities that are important to people’s lives.
- 2 Mobility - providing freedom to travel and opportunity to be physically active.
- 3 Infrastructure – impacting directly or indirectly on physical and mental health through people’s exposure to traffic.

This conceptualization is considered to hold across the population but with notable differences in needs and priorities according to life stage. For example, younger adults may place a higher importance on access to education, training and work, while those who are retired may place a higher importance on access to social opportunities and healthcare.

Delbosc regarded the accessibility pathway as the most important of the three pathways since it facilitates access to activities in key domains of life (such as employment and relationships). However, traditionally more attention has been given in transport to the third pathway and in particular the impacts of traffic exposure on health (see WHO (2011) for a comprehensive review).

This review is concerned with how transport affects young people’s life opportunities and hence it mainly focuses on the first and second pathways – the accessibility and mobility afforded to young people. However, the impacts of traffic exposure on the health of young people should not be disregarded since they are not equally distributed across the population (for example, see Richardson et al., 2013, for particulates air pollution and health inequalities).

Definition of concepts

Social exclusion – the process whereby individuals are prevented from participating in social, economic, cultural and political life (Levitas, 1996). Social exclusion is multi-dimensional, cumulative and broader than poverty: limited financial resources are often associated with other factors such as poor health, low skills and qualifications, lack of political agency, etc. Social exclusion is a relative, and not an absolute concept and is dynamic rather than static. It is multi-scalar in that it can affect individuals and households, as well as neighbourhoods and larger communities.

Transport disadvantage – denotes difficulties in accessing and using transport (both public and private). Delbosc and Currie (2011, p.171) define transport disadvantage as “a multidimensional construct with characteristics associated with location, access to mobility and the limitations on personal access associated with the physical, social and psychological characteristics of individuals”.

Transport poverty – this is a term that has been used to describe the condition of individuals or households who need to spend a disproportionately high share of their income on transport.

Subjective wellbeing is defined formally in the 2013 OECD Guidelines on Measuring Subjective Well-Being (OECD, 2013) as “Good mental states, including all of the various evaluations, positive and negative, that people make of their lives, and the affective reactions of people to their experiences”.

2.2 Capabilities and functionings

Delbosc’s conceptual model is helpful at emphasising the importance of transport in being able to access activities and having the freedom to travel and be physically active, but it does not indicate what is needed for transport to play this role. Having access to transport options is not always sufficient for people to participate in activities. It is also necessary for people to have the capabilities to use those transport options. This is particularly an issue for young people who may not have developed the knowledge, skills and confidence to use transport options or may not be permitted to use them by others. For this reason, we have identified the Capability Approach of Amartya Sen as the key conceptual framework to organise and interpret the evidence around the role of transport to achieve these aims. Sen (1979) proposed that human development, wellbeing and equality are evaluated in terms of an individual’s ‘capabilities’.

The capabilities are the combination of all the possible ‘beings’ and ‘doings’ a person can achieve, what are called their ‘functionings’. These can be elementary achievements such as being adequately nourished or in good health, as well as more complex activities and states, such as taking part in the life of the community, being happy, etc. (More details and bibliographic references about the Capability Approach are included in Appendix 1.) Having the capabilities and freedom to achieve the functionings people value is crucial for their health and wellbeing (Sen, 1979 and 1992).

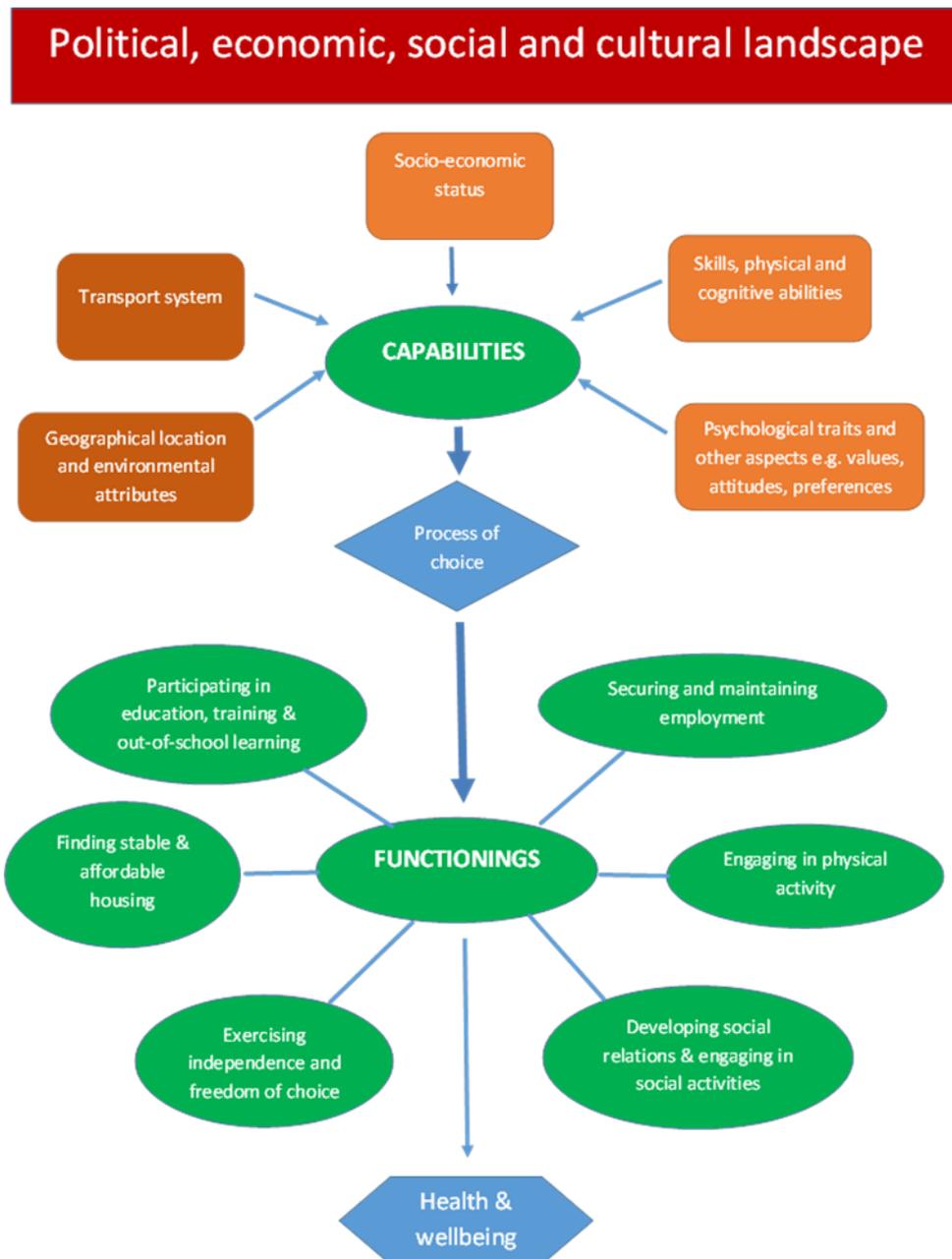
In the context of this review, examples of functionings relevant for young people could be: pursuing further education in a subject of their choice, doing a job that reflects their interests

and competences, practising a sport or a hobby, socialising with family and friends, and developing and nurturing meaningful relationships.

The capability set of a young person (i.e. the set of all the possible combinations of achievable functionings) is determined by different factors, as follows (see Figure 4):

- At a micro (individual) level: psychological traits, values and attitudes (including those related to transport, e.g. perceptions of different transport modes); skills, physical and cognitive abilities (e.g. ability to find one's way, being able to drive, etc. and physical and/or mental disabilities); and the specific socio-economic situation of the individual and their household (e.g. access to social and financial capital).
- At a meso (contextual, local) level: the transport system (e.g. access to a vehicle, access to public transport, etc.) and the geographical location and its environmental attributes (e.g. whether is it urban, suburban or rural, walkable, connected or severed by roads, safe, exposed to air and noise pollution, etc.).
- At a macro (societal) level: exogenous factors such as the political situation and the social, cultural and economic landscape of the community and broader society where young people live.

Figure 4: Capability Approach applied to transport and its impacts on young people's



Health and wellbeing

Figure 4 illustrates how the transport system can influence, positively and negatively, young people's health and wellbeing. We argue that transport plays a role in determining the possible functionings an individual can achieve by affecting their capability set.

Access to well-connected, reliable and attractive public transport, for example, increases the range of opportunities people can reach. These include education and employment, but also

other activities that are important for young people's personal growth, e.g. taking part in out-of-school activities or social and leisure outings with family and friends.

The way certain functionings are achieved entails the use of the transport system, for example in the journey that connects the home to the destination where the functioning takes place. These journeys can affect positively and negatively the functionings they support, and hence health and wellbeing. For example, the unreliability of public transport can make it difficult to be punctual for school or work and directly affect the performance of students and employees. Poor air quality experienced while travelling can impact on people's health in the short, medium and long term. In other cases, mobility constitutes the functioning itself, for example a day out walking or cycling with friends, and as such can have direct implications for people's wellbeing.

The diagram needs to be interpreted as a dynamic, not a static tool. Achieving functionings is one part of the process of growing up and developing into independent and autonomous adults. As children grow up, their capability set changes according to the beings and doings they have achieved. For example, they can find employment (thanks to an improved capability set) after gaining an education qualification (the beings and doings they achieved).

Transport can also affect capabilities in the longer term by influencing micro-level and meso-level factors as follows¹. The experience of using different transport modes as children grow up (in particular walking and cycling) can affect their cognitive abilities and skills with respect to travelling. For example, if a young person walks, cycles and uses public transport with an adult as they are growing up, they will be more able to confidently navigate their environments and able to use these types of transport without adult supervision later in life. This in turn creates more opportunities and increases their capability set, because of their ability to use additional transport modes.

Perceptions and preferences towards different transport modes also matter. For example, negative experience with public transport at a younger age may contribute to long-term negative attitudes towards public transport. As young people become more independent (including financially) through their life course, such ingrained attitudes and preferences may affect their travel choices and other choices that have a transport element (e.g. where they look for work). This means that the process of choice (i.e. translating capabilities into functionings) that young people use can change through their life course due to their past experiences (both positive and negative) with the transport system.

¹ These complex feedback loop and recursive relationships are important but for the sake of clarity and readability have not been shown in the diagram.

2.3 Life course perspective

The Capability Approach recognises that people develop capabilities over their lives and that functionings achieved can create the scope for further capabilities and functionings in future. This highlights the importance of taking a life course perspective that recognises people arrive at their current life situation within trajectories that are developed over the course of their lives and shaped by the environments they encounter as well as transitions that they have made and life events that they have experienced. Glen Elder identified four primary analytic themes of the life course perspective (Elder, 1998).

- 1 Historical time and place – the life course of individuals is embedded in and shaped by the historical times and places they experience over their life-time. This signals the importance of cohort effects where distinctive formative experiences are shared at the same point in the life course by birth cohorts.
- 2 Timing of lives – the development impact of a succession of life transitions or events is contingent on when they occur in a person’s life. The timing of life transitions and events can be considered as ‘on-time’ or ‘off-time’ based on social norms – whether people make major life changes at the same age as their peers or not.
- 3 Linked lives – lives are lived interdependently, and social and historical influences are expressed through this network of shared relationships. The family has been the prime focus of life course research in this respect, but social relationships can be considered in a wider sense. Social relationships can both support and control behaviour. Intergenerational influences such as from parent to child and vice versa can be highly influential.
- 4 Human agency – individuals construct their own life course through the choices and actions they take within the opportunities and constraints of history and social circumstances. This acknowledges that individuals act with an orientation to the future (with an eye for ‘possible selves’) and not just present.

Related to the theme of linked lives is the concept of socialisation. Socialisation has been defined as “the ways in which individuals learn skills, knowledge, values, motives, and roles appropriate to their position in a group or society” (Bush and Simmons, 1981, 135). With travel behaviour it has been suggested that the agents of socialisation for children are family, school, media and peer groups (Baslington, 2008). Socialisation contributes to societal integration. It tends to reproduce and, hence, reinforce existing structures. For instance, the social norm to use the car in a strongly motorised society may be understood as an outcome of socialisation. Aggregate car use produces and reproduces this norm which in turn reinforces car use. Socialisation may thus work against change in the short to medium term.

In the review that follows we interpret evidence from the literature in the light of the concepts and theories discussed in this section.

3. Review of evidence on young people and transport

In this section we summarise the evidence from the review of literature on young people and transport. We start, however, by setting the context with a summary of general transport trends. The evidence on young people is organised into two sub-sections: section 3.2 considers 11-16 year olds (typically in secondary school education); and section 3.3 considers 17-24 year olds (typically in continued education, training or employment). For each of these age groups we start by reporting how transport is used at this stage in life, before looking at how transport is viewed and then what is known about impacts on young people's lives.

3.1 General transport trends

Growth in car ownership in the UK in the second half of the twentieth century, accompanied by changes to the ways in which towns and cities were designed, revolutionised lives with people able to work at increasing distances from where they lived and to access new activities and opportunities. While car travel increased during this time, the extent to which people walked, cycled and used public transport decreased. The benefits of this transport revolution were not equally shared. Those with more limited car access (including young people, the subject of this review) experienced diminishing availability of public transport and difficulties in accessing employment and services.

The increase in car use and road traffic has brought other problems. These include road collisions, congestion, physical inactivity, inefficient use of space, air and noise pollution and greenhouse gas emissions. The prevalence of obesity has grown with 64% of adults and 30% of children aged 2 to 15 classified as overweight or obese in 2017 (NHS Digital, 2018) and only 63% of adults in 2017/18 meeting recommended physical activity guidelines (Sport England, 2019). Air quality is the largest environmental threat to human health in the UK with particulate levels exceeding World Health Organization guidelines in most towns and cities. In the face of growing public concern about climate change, the UK government has recently set a national target of zero net carbon emissions by 2050. Transport accounts for 27% of greenhouse gas emissions, more than any other sector, and most of this is from road transport (DfT, 2019a). While carbon emissions have been falling in other sectors, they have not been falling in transport.

At the current time, three-quarters of households (76%) have at least one car. The cost of car ownership and use can be a large burden for households and those without cars may rely on lifts and taxis to meet their travel needs. The cost of travel for motoring and for bus and rail travel has risen more than the cost of living in the period 1997-2017 (DfT, 2019b). Between 2011 and 2017 the cost of rail travel rose by 19% and bus by 24%, while the cost of motoring did not rise and the consumer price index rose by 11% (TSGB1308²). Household expenditure on transport adjusted for inflation has increased from £68 per week in 2011 to £80 in 2016/17 (TSGB1306). Hence, transport costs represent an increasing burden on households, especially low-income households.

While the car is still by far the most dominant form of personal travel with 61% of personal trips by car and 79% of personal trip mileage by car (DfT, 2019a), growth in car travel has levelled off since the mid-1990s. Car mileage per person has fallen 12% in the last 15 years (NTS06053). The decrease in personal car travel has not been compensated by significant increases in use of other forms of transport. As well as a reduction in the distance travelled per person, there has been a reduction in the number of journeys made. Commuter trips and shopping trips have seen particularly large falls which are attributed to changes in working practices and the impact of on-line shopping deliveries (Marsden et al., 2018).

The aggregate trend of decreasing car travel masks differential trends within the population with younger people driving less than previous cohorts of young people and older people driving more than previous cohorts of older people (Chatterjee et al., 2018). There have been greater reductions in car travel for young men than young women to the extent that gender differences in travel amongst this age group have become negligible. The trend of decreasing car travel also differs by geographic area. Reductions in car travel have been largest for those living in Greater London and smallest for those living in rural areas (*ibid*). There are also contrasts within large urban areas with reductions in car travel and increases in public transport use in central areas and continued rises in car travel in peripheral areas and on inter-urban routes (*ibid*).

Personal travel trends over the last twenty years have been influenced by changes to society and the economy, changes in technology and change to transport itself. Outside transport, key changes include longer life expectancy and the ageing population, rising housing costs relative to incomes (especially for young people) and the impact of the internet and social media on working and social practices. In transport itself, efforts have been made to reduce car travel in towns and cities. Mass transit systems (light rail, trams, bus, rapid transit) have been expanded in some cities and progress has been made in developing walking and cycling networks in London and some other towns and cities. However, bus provision and patronage have generally declined outside London where they are deregulated (UTG, 2018).

² Result from Transport Statistics Great Britain (TSGB) are referenced in terms of data table numbers such as TSGB1308. The data tables can be found at <https://www.gov.uk/government/collections/transport-statistics-great-britain>

³ Results from National Travel Survey are referenced in this paper in terms of data table numbers such as NTS0605. The data tables can be found at <https://www.gov.uk/government/collections/national-travel-survey-statistics>

Bus service miles in England outside London have decreased by 12.9% since 2004/05 driven by a 49% decrease in local authority supported mileage (DfT, 2019c). Bus use in England outside London has been in decline since 2008/09 with a 3.2% drop in journeys between 2016/17 and 2017/18 (*ibid*). The taxi and private hire vehicle (PHV) market has been transformed by the arrival of ride-hailing services such as Uber, although no significant increase in personal travel by taxi/minicab has been recorded in national travel statistics (NTS0601).

3.2 Young people aged 11 to 16

3.2.1 Travel behaviour

Travel in general

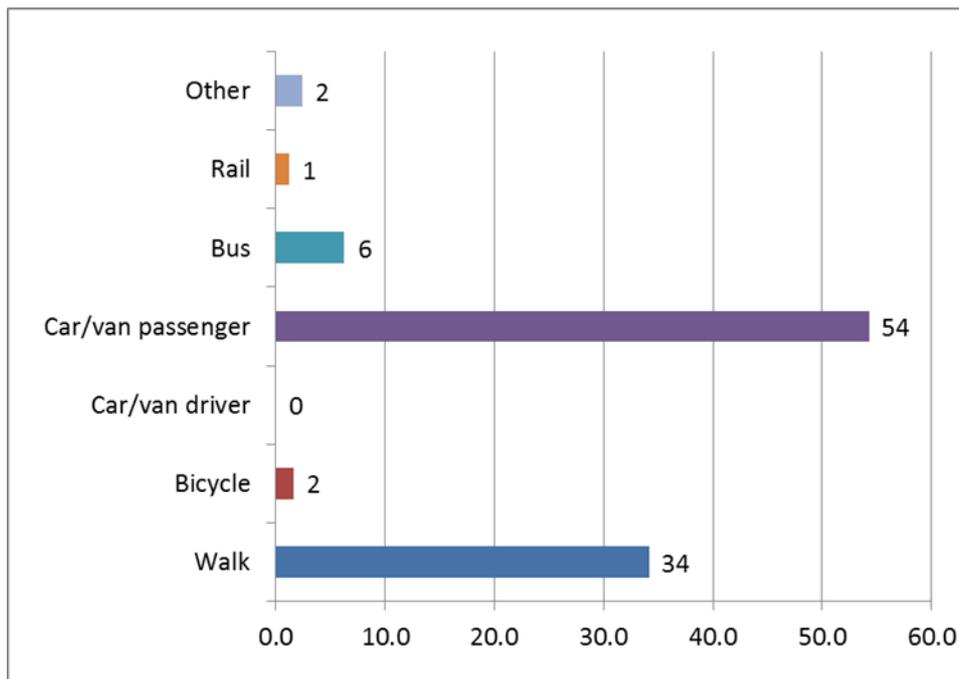
Published results from the National Travel Survey (NTS) mainly refer to the travel of under 17 year olds in general without separate results being available for 11-16 year olds (DfT, 2019d)⁴. The latest available results for 2017 show that under 17 year olds make 869 journeys per year (2.4 per day) compared to 975 journeys per year (2.7 per day) for all ages (NTS06015). The number of journeys made by under 17 year olds had decreased from 942 per year in 2002 to 869 per year in 2017 in line with decreases for other age groups.

More than half of the journeys of under 17 year olds are made as a car passenger (54%) with one third on foot (34%) (see Figure 5). The share of modes used has hardly changed in the last 15 years with equivalent figures of 55% and 33% in 2002. Travel as a car passenger is even more dominant when considered in terms of distance with it making up 79% of all distance travelled by under 17 year olds in 2017 (NTS0605).

⁴ NTS has not historically collected data for Northern Ireland and has not collected data for Scotland and Wales since 2013, hence the latest trends could only be considered with respect to England.

⁵ Result from NTS are referenced in terms of data table numbers such as NTS0601. The data tables can be found at <https://www.gov.uk/government/collections/national-travel-survey-statistics>

Figure 5: Mode share percentage for trips made by under 17 year olds in England in 2017



Only 6% of journeys are made using publicly available buses. The importance of buses is greater for under 17 year olds living in households without a car with 135 bus journeys per year in households without a car compared to 41 journeys per year in households with one car and 36 journeys per year in households with two or more cars (NTSA19007).

Only 2% of journeys by under 17 year olds from A to B were made by bicycle. The equivalent figure for the Netherlands has been reported to be 35% for under 16 year olds (Pucher and Buehler, 2007). The reason for this stark difference is not access to bicycles given 82% of 5-10 year olds in England and 70% of 11-16 year olds own or have access to a bicycle (NTS0608). Our own analysis of National Travel Survey data for 2008-10 shows that 38% of 11-15 year olds reported using their bike at least once per week which implies that many in this age group use bicycles but not for journeys from A to B.

School travel

Travel to school results are separately reported for 5-10 year olds and 11-16 year olds (NTS0615). Walking is the usual method of travel to school of 35% of 11-16 year olds with 31% taking a bus (18% using a public bus and 13% using a private 'school' bus), 26% travelling by car and 4% riding a bicycle. This highlights the importance of buses for this age group. Just over a third of journeys to school by 11-16 year olds (37%) are undertaken alone (i.e. without a family member) and the average journey distance is 3.5 miles. In 1995/97 the average journey distance was 2.9 miles and 42% of trips were undertaken alone. At that time,

walking to school was the usual method of travel for 41% of 11-16 year olds with 33% taking a bus and 21% travelling by car. Hence, travel to school by car has increased and walking and bus travel have decreased.

Investigation of trends in the travel of 11 to 16 year olds

An RAC Foundation study of changes in the travel of pre-driving age young people between 1995/97 and 2008/10 provides some useful insights (Chen et al., 2014). It showed a shift over time in the purposes of travel undertaken by 11-16 year olds with education travel increasing from a 35% share of travel in 1995/97 to 39% in 2008/10, social/leisure travel increasing from 18% to 23%, while work-related travel decreased from 6% to 1% and shopping travel decreased from 15% to 10%. The reduction in work-related travel was partly attributed to fewer 16 year olds entering the workforce and partly attributed to fewer 11-16 year olds taking on part-time work while in education. This trend emphasises that the main travel needs of this age group today are getting to and from education and social/leisure destinations.

The RAC Foundation study showed that use of buses was much higher for the 11-16 year old group (in 2008/10) than children aged 10 and younger with it accounting for 14% of all journeys and car passenger travel accounting for 42% of journeys. Car passenger share decreased with age between the ages of 11 and 16 with public transport (mainly bus) share increasing and walking and cycling relatively constant. Car passenger share had increased over time from 35% (1995/97) to 42% (2008/10) with walking decreasing and bus use stable. Over the period from 1995/97 to 2008/10 the average length of journeys increased from 4.4 miles to 5.3 miles for 11-16 year olds which may go some way to explain the reduction in walking since longer journeys are less likely to be walked.

The RAC Foundation study also gave indications of variation in travel within the 11-16 year old population. Bus share was higher in London/Metropolitan areas and rural areas with walking higher in other urban areas. Young people in higher income households had a higher proportion of social/leisure travel and lower proportion of travel to visit friends/relatives at private homes. This shows that children in lower income households undertake fewer social/leisure activities outside of people's homes but make more visits to friends/relatives. This could be a factor limiting developmental opportunities. Car passenger share increased with income and walking and bus use share decreased such that "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)".

Independent mobility

The extent of independent mobility of children in England has been the subject of a series of studies between 1971 and 2010 (Shaw et al., 2013). Children's independent mobility is considered to be important from both a rights-based perspective (as something valued and enjoyed by children) and because of the benefits it provides to children's health and social

development. The latest report (ibid) found there had been no notable change between 1990 and 2010 in six 'licences' for independent mobility given by parents to secondary school children. This contrasted to the period between 1971 and 1990 when there had been a substantial decline. Most secondary school children have licence to cross main roads alone, travel back from school alone and travel to other places than school alone, but few have licence to go out alone after dark. About six in ten have the licence to use buses alone.

Parental concern about the risk of their child being injured in a traffic accident decreased between 1990 and 2010. However, contradictorily, more secondary school children were accompanied to school in 2010 than 1990 (9% in 1990, 17% in 2010). Adult accompaniment on other journeys also increased. A possible explanation for this is increased concern about non-traffic threats. This is borne out by secondary-school children citing strangers, getting lost and bullying more than traffic as potential threats in their local area (ibid).

3.2.2 Attitudes to transport

Transport perceptions

There has been relatively little research carried out with young people aged under 17 on what they think about transport. It has been found that younger teenagers enjoy the independence offered by public transport where they can travel with friends and spend time together away from parents (Harper, 2005). As they get older, they take independence more for granted, seeing public transport as more of a necessity and becoming more critical of it. Barriers to young people using public transport have been found to be the following (ibid):

- Financial constraints;
- Paucity and unreliability of services;
- Fears of crime and for safety;
- Hostile treatment by staff and other users;
- Cleanliness and comfort; and
- Lack of information.

While these are similar to barriers for adults, young people express greater concern about the cost of travel, the attitudes of transport staff and the availability of evening and weekend services. It has been found that cycling is not popular for journeys from 'A to B' but is used by 12-14 year olds to spend time with friends (Harper, 2005).

Research with 11-12 year olds and 14-15 year olds from schools in a mixture of urban and rural contexts in England provides some useful insights (Martin et al., 2004). It showed that travelling by car is perceived as fast and comfortable but polluting. Travelling by bus is

perceived positively as a social experience but also as slow and uncomfortable. Walking is seen as healthy but slow. More children wanted to cycle to school or go by car than reported doing so, but fewer wanted to walk or go by bus than do so. The result for cycling is particularly notable as no children in this study reported cycling to school regularly, while 18% reported wanting to cycle. This is a similar finding to that of an earlier study of children aged 13-14 from three schools in the Midlands (Jones et al., 2000) which showed a strong preference for cycling, even though very few children cycled to school.

Travel socialisation

The influence of transport experiences in childhood on subsequent attitudes and behaviours has been highlighted in research looking at travel socialisation. Baslington (2008) found that children experienced cars as a tool to enable families to manage time pressure and often experienced home and school environments where the car was normalised. Children from households with more cars had stronger positive feelings towards cars, but even in households with no cars there were expectations of learning to drive. Haustein (2009) found that young people whose parents emphasised the environmental problems of car use when they were teenagers were more likely to have stronger social and personal norms to use alternative travel modes to the car.

With respect to cycling, Driller and Handy (2013) found that “parents influence child bicycling behavior by setting rules about where children can travel, helping them to negotiate barriers, and shaping their attitudes toward bicycling”. They suggest therefore that parents should be targeted in terms of their attitudes, and also behaviour, for encouraging children to cycle. Qualitative research has demonstrated how cycling in youth plays an important role in inspiring and practically facilitating engagement with cycling later in life (Chatterjee et al., 2013, Jones et al., 2015).

Future intention to drive

A number of studies have specifically explored the intentions of young people in this age group in relation to their future transport use. Overall, the evidence suggests that most teenagers anticipate getting a car and driving. Martin et al. (2004) found from a questionnaire survey of 11-12 and 14-15 year olds that 86% of them thought it very important or important to learn to drive at 17 years of age. Line et al. (2010) found from focus groups with 11-18 year olds a strong desire to learn to drive in the future with climate change concerns not having a notable influence. It would be interesting to repeat this research in 2019 given the worldwide strike action by school-children protesting about lack of action on climate change. The young people in the focus groups saw the car as offering practical advantages (speed, comfort) and social recognition (identity) with the authors suggesting the latter is particularly important due to the development of identity in adolescence. However, it was found that some participants accepted the idea of using alternative modes if there are viable alternatives and restrictions on car use applied to everyone.

Barker (2014) found from qualitative research with 13-19 year olds that the aspiration for car ownership is driven by the idea of freedom and autonomy with car ownership seen as central to a transition to adulthood and moving away from reliance on parents as lift givers.

“Driving is so ... I see it as more freedom, more freedom to do what I want. When I can drive, I can take myself places and go where I want to go, take people to go places. More convenient than having to wait for a bus or walk, that would just take longer. It's much quicker to drive places.”

Dean, aged 15, West Sussex, from Barker (2014)

However, young people acknowledge that parents are important in facilitating car access by subsidising or paying for driving lessons and giving them access to the parental car (ibid). Some young people recognise that gaining a licence and getting a car is not something they will do immediately but still see it as a future aspiration, especially related to starting their own family.

Mixed findings were found from a questionnaire survey in Denmark (Sigurdardottir et al., 2013) where more than 80% of 15 year olds intended to learn to drive and own a car, but cycling also featured strongly in how they would like to travel as future adults with 47% saying they would prefer to drive a car to work and 28% saying they would prefer to cycle and 34% saying they would prefer to drive for leisure activities and 43% saying they would prefer to cycle. This is reasonably in line with how adults travel in their twenties in Denmark. Positive bicycle experiences and positive beliefs in a bicycle-oriented future vision were associated with greater intentions to cycle to work as adults. Residence in Copenhagen, which is characterized by an extensive bicycle infrastructure, was negatively correlated with social norms of car use and general interest in cars. The study therefore indicates that cycling is seen as an attractive option in a physical environment which supports cycling and with more people cycling.

3.2.3 Impacts of transport

This section presents evidence on the impacts of transport on the lives of young people aged 11-16.

Access to education

The Government's Social Exclusion Unit report (SEU, 2003) noted that children from low-income groups have more restricted school choices and are less able to access learning outside school hours. This is supported by an analysis of National Travel Survey data which showed that distances travelled to school by pupils aged 11-15 from professional/managerial families were longer than other pupils when they lived in areas with above average neighbourhood density (typically inner urban areas) or in rural areas (Gordon and

Monastirioti, 2007). This suggests that access to transport enables professional/managerial families to choose from a wider range of school options in those types of areas.

Access to social activities

Access to out-of-school activities is particularly a problem for low-income groups due to the cost of public transport or the inability to collect children by car (SEU, 2003; Harper, 2005). In rural areas, travel to leisure activities is particularly dependent on lifts. Lack of transport may force young people to participate in activities or use services that are nearer to them, but not necessarily of the best quality. In rural areas, absence of good quality transport has been found to contribute to young people engaging in anti-social behaviour and experiencing boredom and frustration through lack of choice (Harper, 2005).

Research on the Minimum Income Standard (MIS) produces budgets for different household types based on what members of the public think is needed for a minimum acceptable standard of living in the UK. It has been carried out since 2008 funded by the Joseph Rowntree Foundation. It was determined in 2012 that a household car was necessary for families with children “to provide sufficient choices and opportunities for social participation and employment”. Public transport was no longer considered sufficient as it has been in 2008 (Davis et al., 2018, 22). This was interpreted as a consequence of declining bus services outside of London. For working age adults without children and pensioners a car is not considered necessary. Research from the United States is in line with the position taken for the MIS. An analysis of American time use data has shown that more travel (particularly by car) by young people is associated with greater engagement with out-of-school activities (Ralph and Iacobucci, 2018).

Where the affordability of public transport has been addressed by transport authorities, children and young people have benefitted from such policies in various ways. An exemplary case is London, where under-17s have been entitled to free bus travel since 2005 (and under-18 year olds since 2006). This has been found to contribute to increased social inclusion for young Londoners (Jones et al., 2012), by allowing young people from less affluent backgrounds to travel together with their peers and with their families without restriction and for journeys they would not normally be able to undertake because they were deemed not essential such as for social and leisure purposes. Other impacts of the universal provision of bus travel for young London residents are reported later in this section.

Physical activity

The latest data suggests that only 20% of 11 to 13 year olds (years 7 and 8) and 14% of 13 to 16 year olds (years 9 to 11) meet the Chief Medical Officer guidelines of taking part in sport and physical activity for at least 60 minutes every day (Sport England, 2018). Three in ten 11 to 13 year olds (30%) and 37% of 13 to 16 year olds do less than 30 minutes per day. It also shows a positive association between physical activity and mental wellbeing.

A meta-analysis of the impact of walking to school on physical activity has estimated that it contributes 36% of moderate to vigorous physical activity (MVPA) for high school (14-18 year old) students who get to school in this way (Martin et al., 2016). However, as noted earlier, walking is the usual method of travel to school for about one-third (35%) of 11-16 year olds and riding a bicycle is the usual method for only 4% of 11-16 year olds.

The relatively low proportion of 11 to 16 year olds walking and cycling is contributing to lower than desirable levels of physical activity which presents a risk for their future adults lives given it is known that physical activity tracks from childhood and adolescence to adulthood (Telama, 2009). It is therefore important to develop effective initiatives to increase children's and adolescents' physical activity. A review of school-based interventions to promote active travel found results overwhelmingly positive for both walking and cycling (Cavill et al., 2019).

For the example of Bikeability cycle training, it has been found that those children aged 10-11 receiving the training are more confident to cycle, enjoy cycling more and are more likely to cycle to school but not to cycle more overall (Johnson et al., 2016). For older children (aged 11-14) it has been found receiving the training associated with an increased likelihood of cycling to school and cycling for at least 30 minutes during the previous week: this indicates a long-term impact of the training. These results are based on cross-sectional data where it is possible that those children already cycling are more likely to take the training, rather than the training leading to more cycling.

Another study used a natural experiment design where it was able to draw upon survey data for children at schools where Bikeability cycle training was delivered but where some children had received the training before they participated in the survey and some had not (Goodman et al., 2016). This study found that children aged 10-11 in schools where Bikeability cycle training had been delivered were more likely to have undertaken the training but not more likely to cycle as a result of the training (cycle to school, cycle in general or cycle independently from adults). It was observed that children who undertook the training were more likely to cycle frequently which suggested that children who cycle already are more likely to take the training. The authors also noted that cycling to school was very uncommon in their sample (3% usually cycled to school), while cycling weekly was common (about half reported this), which indicates cycling is mostly recreational. It is concluded that cycle training cannot overcome wider barriers to cycling, in particular lack of safe infrastructure, at least for children of the age receiving the Bikeability training (aged 9-11).

Independence and self-worth

The transition to independent mobility, or the use of transport modes without adult supervision, has been the subject of several studies reviewed for this report. It has been suggested that relying on parents for transport may contribute to feelings of lack of mobility, independence and freedom among young people and even isolation (Harper, 2005). However, it has been argued that reliance on lifts is accepted, as young people do not know

anything different and are happy with the comfort, convenience and flexibility of being taken to activities by car (Martin et al., 2004).

A study of 13-14 year olds from three schools in high-, medium- and low-density areas in the English Midlands investigated how young people handled travel risks (Jones et al., 2000). While parents sought to secure safety through accompanied travel, young people tried to have some extent of independent mobility. A key part of how they managed this was to travel in groups to minimise dangers. There were contrasting perceptions of local areas with the high-density, inner-city area seen as unsafe due to traffic, and the other locations seen as safe, quiet and friendly, but boring and distant from friends. Consequently, young people in the inner-city area called for safe cycling and pedestrian infrastructure, while young people in the other areas called for more facilities (youth clubs, leisure centres) and improved, less costly public transport. All complained their voices were not heard on these matters.

Everyday walking in the neighbourhood ('just walking') was valued by the young people aged 9 to 16 in Milton Keynes/South Midlands considered by Horton et al. (2014). The research found that young people spend considerable time walking outdoors, and this time can be spent engaging in rich, playful, social, exploratory and imaginative walking practices, which are essential to friendships and for emotional and social development. Although the young people were limited by their parents on how far they could go without an adult, they had considerable freedom of action and movement within these boundaries. Through everyday walking, children developed a close detailed knowledge of the built environment of their communities, including features, quirks and secret places.

A major study by the London School of Hygiene and Tropical Medicine (LSHTM) of the health impacts of free bus travel for under-18 year olds in London found bus travel increased for 12-17 year olds but also for the wider population and hence could not be attributed to the intervention (Green et al., 2014). Nevertheless, qualitative data (interviews, focus groups) indicated that the scheme contributed to the bus becoming the 'default' mode for many journeys. While the number of journeys with walking as a main mode decreased, there was no evidence that overall levels of active travel reduced, since bus travel involves walking and total journeys increased.

Qualitative data collected in the LSHTM study was used to consider the concept of independent mobility (Goodman et al., 2014). Their view is that independent mobility is not just about obtaining parental permission, it is also about having the capabilities and confidence to act, via a learning process involving peers and the security of a safety net provided by the public transport system. Even with parental permission, young people also need to be able to afford the cost of travel to make their journeys and the universal provision of free bus travel supports this. Whilst research has conceptualised independent mobility as travelling without an adult, young people framed the concept in a different way. If the adult is paying for the trip, then it is not independent travel. Travelling with friends and companions of their choice is instead independent mobility. Free bus travel had the biggest impact on travel

decisions that were not necessary but extremely valued by young people, for example, bus hopping to explore London, meeting with friends on the bus and using the bus to go and meet other friends. The bus was therefore a social space, not just a means of transport. Free bus travel expanded not just individual-level but also group-level capabilities. This was due to the universal nature of the scheme. The universal nature of the scheme might also have challenged the notion that bus is a low status transport mode.

It is suggested that the labelling of walking and cycling as active modes and bus travel as passive is problematic. The evidence from the LSHTM study shows that bus travel can be physically and socially active for young people. Independence is not associated with specific modes, but instead the way the mode of transport is accessible without restrictions (Jones et al, 2012). Universal access to bus travel can positively affect wellbeing more generally by: broadening the capacity of all young people to travel without adult supervision; by opening up a network of public mobile spaces in which young people can actively maintain their community of friends. We note that similar positive outcomes could apply if cycling were made safer for all young people to use as a means of travel.

Another paper on the effects of the free bus travel scheme in London looked at the concept of entitlement and compared the views of under 17 year olds with those of older people who are also entitled to free bus travel (Jones et al., 2013). It found that young Londoners expressed a weaker sense of being entitled to free travel than older people, but recognised the benefits from it and valued it none the less. They felt their entitlement was weak since if they forgot their bus pass or lost it they would still have to pay the fare. Entitlement to concessionary bus travel, if understood as resulting from the social worth it provides, has potentially positive effects on wellbeing, through the symbolic meanings attached to that entitlement. The main implication of the paper by Jones et al. (2013) is that concessionary public transport has a set of effects on wellbeing (e.g. on self-worth, sense of belonging and being valued as a citizen) that are hard to measure but as important as objective health effects. Where the entitlement fits with a sense of personal entitlement then wellbeing can be enhanced. But when entitlement is based on needs rather than rights, it can negatively affect wellbeing. The research suggests that policy makers should communicate a cogent rationale on entitlements in such a way that recipients understand and value it.

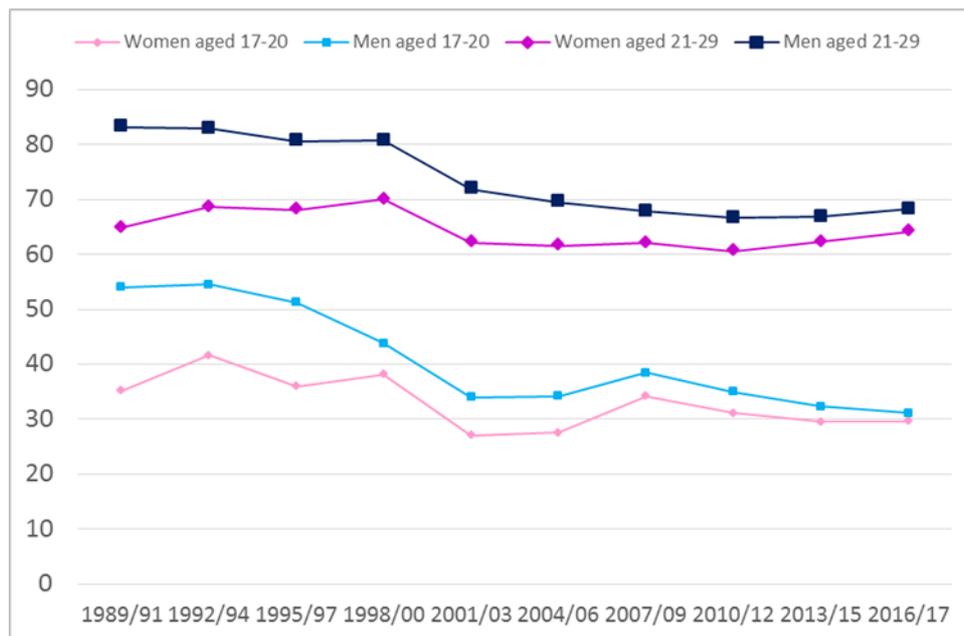
3.3 Young people aged 17 to 24

3.3.1 Travel behaviour

Driving licences and car access

Seventeen represents a potentially pivotal point in young people's lives in the UK where they can take the driving test to get a full driving licence and drive on public roads. According to the latest statistics, three in ten (30%) young people aged 17 to 20 have a full driver licence, down from a peak value of 48% in 1992/94 (NTS0201) (see Figure 6). Only 21% of 17-20 year olds identify themselves as the main driver of a household car with 7% identifying themselves as the other driver of a household car (NTSA19015b). About half of this age group (52%) live in a household with a car but are non-drivers themselves, while 19% live in a household without a car.

Figure 6: Driving licence holding percentages in England between 1989-91 and 2016-17



Driving licence statistics are not reported separately for 21-24 year olds but two-thirds of 21-29 year olds (67%) hold a full driver licence, down from a peak value of 75% in 1998/2000 (NTS0201). One half (49%) of 21-29 year olds identify themselves as the main driver of a household car, while 11% identify themselves as the other driver of a household car

(NTSA19015b). Just under one in five (18%) live in a household with a car but are non-drivers themselves, while 23% live in a household without a car.

In the National Travel Survey, when asked why they are not learning to drive, young people aged 17-29 most frequently refer to costs (costs of learning to drive, buy a car and insure a car) and second most frequently refer to it not being a priority (family/friends can drive me when necessary, not interested in driving, other forms of transport available, too busy to learn). It has been found that those with a lower income are likely to only cite costs, while those with a higher income are likely to cite costs and lack of priority (Le Vine and Polak, 2014). This implies that those with a lower income have greater need to drive but are unable to afford to do so.

It has been shown that licence holding among 17-24 year olds in the UK increases with economic advantage (in terms of education, employment, personal income and housing tenure) and decreases with level of urbanisation (Berrington and Mikolai, 2014). The relationship between licence holding and these variables is stronger for women than men, implying licence holding is important to men in disadvantaged economic circumstances. Another analysis showed that, after controlling for other factors, licence holding was less likely for those not born in the UK, with a long-standing health condition, working part-time or temporarily employed (Chatterjee et al., 2018). It also showed that the likelihood of acquiring a licence the following year for someone without a licence was much higher for those employed or gaining employment. This highlights that those young people that are not working are unlikely to be able to learn to drive.

The unforeseen large decrease in young people getting a driving licence and driving over the last 25 years has been the subject of considerable interest. A study commissioned by the UK Department for Transport to explain the trend concluded that it has been driven “by changes in young people’s socio-economic situations (increased higher education participation, rise of lower paid, less secure jobs and decline in disposable income) and living situations (decline in home ownership and re-urbanisation)” and also “changes in when people start a family, their social interactions (substituting face-to-face interaction with digital communication, for example) and the importance that people attach to driving” (Chatterjee et al., 2018).

Travel of 17-20 year olds

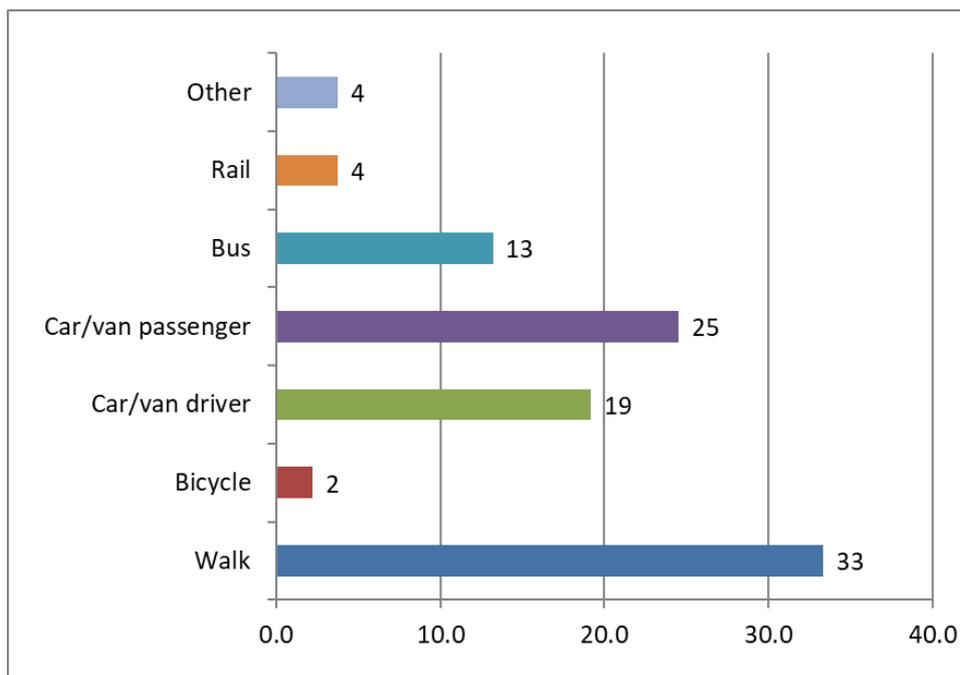
The relatively low proportion of the 17-20 age group in a position to drive provides important context for interpreting statistics on their travel behaviour. National Travel Survey results for 2017 show that 17-20 year olds make fewer journeys than all other age groups, except those over 70 years of age, making 806 journeys per year (2.2 per day) compared to 975 journeys per year (2.7 per day) for all ages (NTS0601). It is notable that the number of journeys made has decreased from 1,003 per year in 2002. The reason for this could be that there are particular barriers to travel for this age group which have emerged in recent years (such as reduced driver licence holding), or that there has become less need for travel amongst this

age group given their life circumstances and other means of accessing opportunities than travel (e.g. internet access).

One third of journeys are made on foot (as with under 17 year olds) with one quarter of journeys as a car passenger and one fifth as a car driver (see Figure 7). Of the 5,110 miles travelled per year on average by members of this age group, 63% is by car as a driver or passenger. Public transport use is important to this group with 13% of journeys made using publicly available buses and 4% by rail. Bicycle use is low at only 2% of journeys (NTS0608). Equivalent figures for bicycle use are reported to be 36% for 16-25 year olds in the Netherlands, 20% for 16-19 year olds in Denmark and 18% for 14-18 year olds in Germany (Pucher and Buehler, 2007). This low figure in England is despite 43% of 17-20 year olds owning or having access to a bicycle. Our own analysis of National Travel Survey data for 2008-10 shows that 16% of 16-19 year olds reported using their bike at least once per week which implies that many in this age group, like 11-15 year olds (see section 3.2.1), use bicycles but not for journeys from A to B.

Unlike the under 17 year olds, there has been a shift in the travel of 17-20 year olds in the last 15 years away from car use. The mode share of walking has increased from 25% to 33%. Car passenger mode share has decreased from 28% to 25% and car driver mode share has decreased from 22% to 19%. Bus use has decreased from 15% to 13%.

Figure 7: Mode share percentage for trips made by 17-20 year olds in England in 2017



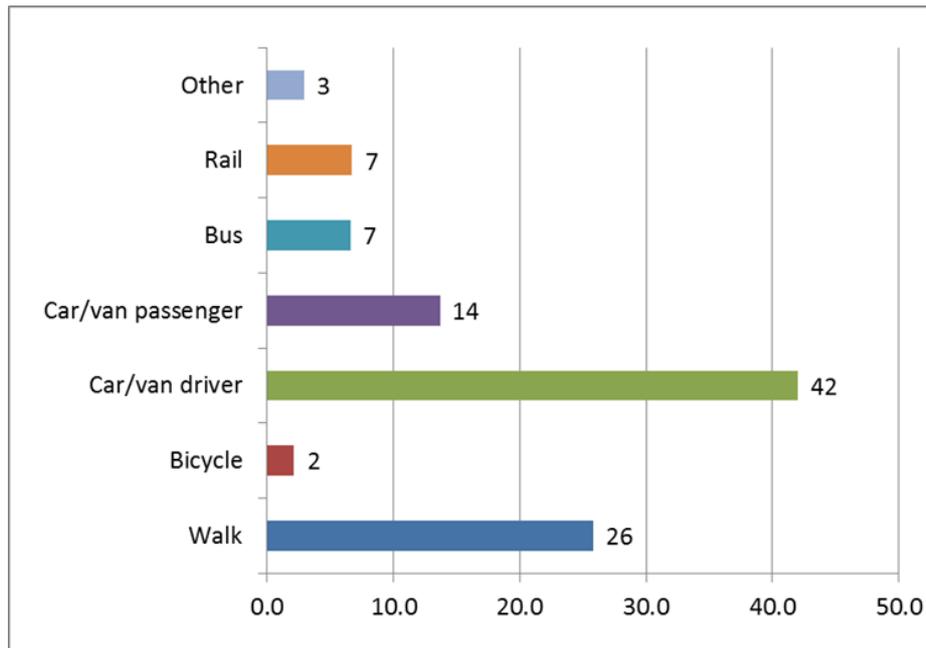
There is some information available from the National Travel Survey on how travel differs within the 17-20 year old population. It is reported that 17-20 year olds living in households without a car (19% of this age group) make 183 bus journeys per year compared to 123 journeys per year in households with one car and 61 journeys per year in households with two or more cars (NTSA19007). It is also reported that the average distance driven by 17-19 year olds in England in 2013-17 is 1,065 miles per year but it is 2,440 miles for those living in rural areas and 830 miles for those living in urban areas (NTSA19033). It hardly varies by gender.

Travel of 21-24 year olds

National Travel Survey results for 2017 show that 21-29 year olds make 915 journeys per year (2.5 per day) compared to 975 journeys per year (2.7 per day) for all ages (NTS0601). It is notable that the number of journeys by this age group has decreased from 1,061 per year in 2002.

Over four in ten journeys (42%) are made as a car driver with one quarter of journeys (26%) on foot and one in seven (14%) made as a car passenger (see Figure 8). Of the 7,073 miles travelled per year on average by members of this age group, 72% is by car as a driver or passenger. Bus use is lower than for 17-20 year olds with 7% of journeys made using publicly available buses (compared to 13% for 17-20 year olds). Rail use is higher at 7% (compared to 4% for 17-20 year olds). Bicycle use is again low at only 2% of journeys, although 32% of 21-29 year olds own or have access to a bicycle (NTS0608). There has not been a substantial shift in the mode share of 21-29 year olds in the last 15 years.

Figure 8: Mode share percentage for trips made by 21-29 year olds in England in 2017



There is some information available from the National Travel Survey on how travel differs within the 21-29 year old population. As with 17-20 year olds, those 21-29 year olds living in households without a car (23% of this age group) make many more bus journeys - 138 bus journeys per year compared to 46 journeys per year in households with one car and 23 journeys per year in households with two or more cars (NTSa19007). It is also reported that the average distance driven by 20-24 year olds in England in 2013-17 is 2,597 miles per year but it is 5,726 miles for those living in rural areas and 2,154 miles for those living in urban areas (NTSA19033).

The significance of getting a driving licence

A comparison of the total travel of young people who acquire a driving licence and those who do not acquire a licence based on 2008-10 National Travel Survey data (Chen et al., 2014) shows that 17-29 year olds who do not acquire a licence have about the same annual mileage as 11-16 year olds but travel more by modes other than car passenger, in particular bus and rail. Those who acquire a driving licence have about twice as much annual mileage with a large share of their mileage as car driver. This implies that acquisition of a driving licence is a pivotal step in transforming travel behaviour.

Another interesting finding is that the majority of the car passenger mileage of 11-16 year olds is using a car kept by a household member, and the same applies to 25-29 year olds, but between 17 and 24 years of age it is mostly using a car from outside the household such

as a hire car, an employer's pool car or a private car owned by someone that does not live in their household (ibid). This highlights that 17-24 year olds have limited personal car access.

3.3.2 Attitudes to transport

Attitudes to driving

Given the reductions in the proportion of young people getting driving licences there has been considerable interest amongst transport policy makers, planners and academics in how attitudes to driving are changing. Taylor et al. (2007) found attitude orientations towards cars varied from enthusiasts to those neutral to those sceptical. Learning to drive was natural and expected for some and a calculated decision for others. Factors encouraging it were perceived benefits, perception of it as a transition to adulthood (by self and parents), group identity and seeking independence. Discouraging it were cost and difficulty of learning to drive and parental anxiety. Two future life aspirations were commonly mentioned: living in cities (with more opportunities and good transport) and acquiring a car to fulfil future life expectations. The first aspiration is compatible with living without a car.

Given concerns about the impacts of high motoring insurance costs for young people, Watt et al. (2012) carried out research for the Department for Transport seeking to understand young people's attitudes to learning to drive and the insurance market. From focus groups conducted across the UK with pre-drivers (aged 15-16) and young drivers (17-24), they found learning to drive is associated with independence, freedom, spontaneity and becoming an adult but young people feel that they are not treated fairly (as adults) because of high insurance costs and other barriers to driving. Some young people are desperate to get a licence and others happy to wait (until after education, for example). For those that pass the driving test, there is initial elation and excitement but reality sinks in of costs and over time the car becomes seen as a tool rather than a toy. This study shows how the realities of driving collide with the dreams of young people and how expectations are moderated as a result.

More recently, SRA (2015) conducted qualitative research with young people which showed that cost concerns are the dominant reason for not driving with insurance costs the most frequently cited cost factor. Young people also referred to living in an urban area, not starting a family yet and lack of parking as reasons for not driving. Concerns for personal security were identified by women as encouraging them to drive. Young people did not associate cars with high status. Positive attitudes towards public transport were expressed, including real-time information and the ability to do other activities during journeys. Young men were positive about cycling and both young men and women perceived walking as sociable and healthy. The authors concluded that the current generation of young people are not likely to have the same car ownership as previous generations as they get older. Although they will tend to move to the suburbs on starting families (with limited affordable housing provision in

urban areas), they have become accustomed to using alternatives to the car and are reasonably satisfied with these.

In the light of the observed reductions in car use, Green et al. (2018) explored the desires to drive and practices of driving of 16-21 year olds through focus groups in areas outside the large metropolitan areas of the UK. Driving was seen to enable transition from childhood dependence, especially in rural areas and for those starting work, but this was accompanied by concerns over costs and safety. Having a car was valued in what it could offer in terms of a social space/tool but concerns were also raised about uncomfortable aspects (e.g. getting lifts from risky drivers). Alternatives to the car were seen as a 'last resort', but it was understood could be adequate in other (urbanised) contexts. The authors concluded: "Cars ... no longer evoked the high status of conspicuous consumption. Rather, access to a car (whether as driver or passenger) offered freedoms of a rather mundane sort: to engage in the world of work or sociability. These mundane freedoms were framed in the context of responsibilities: to earn sufficient money to keep a car; to acquire skills to manage the risks of the road".

Fylan and Caveney (2018) explored motivations to drive amongst 16-24 year olds through conducting focus groups in different areas of England. From the data, motivations were grouped into two categories: 'mature benefits' (independence; personal space; and kudos) and 'broadening horizons' (expanding social world; and greater career opportunities). For some in urban areas these goals could be gained without a car. For career opportunities most participants referred to advantages of being able to drive, but discussed this in terms of convenience and being able to get more sleep, rather than making the difference in being able to take up an opportunity.

Similar conclusions have been made from studies outside the UK. Delbosc and Currie (2014) found from online discussion groups of 17-23 year olds in Victoria (Australia) that the car is seen as facilitating entry into independent adulthood. The car facilitates a lifestyle, it is not an object of desire in its own right, and the lifestyle choice does not bring into consideration the environmental impact of driving. Being able to drive was seen as enabling greater freedom in seeing friends and maintaining connections. Relying on lifts and public transport prevented spontaneity in meeting up with friends.

Hopkins (2016) found from in-depth interviews with young people aged 18-35 in New Zealand, who were at different stages of learning to drive, that some participants were not motivated to learn to drive by the need to drive itself but by gaining a driving licence for other reasons such as employability and the expectations of others. Other participants felt the need to drive themselves for their independence and to relieve others of giving lifts, while others expressed intrinsic motivations to drive to achieve something (e.g. freedom) or for enjoyment. In some cases learning to drive was simply a consequence of it being easily possible (through family support with driving lessons, for example). On the other hand, not learning to drive was explained by competing priorities, not being perceived necessary (due to close

proximity to destinations, for example), not wishing to incur costs and negative impacts (including environmental impacts) and lack of means (financial in particular) to learn to drive and to acquire and run a car.

An earlier study by Jensen (2006) looked at the meaning of mobility and the car for young people based on in-depth interviews of young people aged 16-25 in a neighbourhood of Copenhagen. She found that mobility is integral to life in the city in supporting young people's search for new experiences. However, having a car is not essential to this with the bicycle and public transport use enabling mobility in the city. The participants were critical of cars and the effects they have on other road users and on children, although nostalgic towards memories of family car trips. They did not express a direct wish to acquire a car, although they did not rule it out one day. Jensen argued that there is a tension between young people's desire to be constantly mobile and dislike of the impact of car traffic in the city.

In the contrasting setting of Reykjavik (Iceland), Collin-Lange (2014) reports on the attitudes towards driving of 16-20 year olds. Reasons given for car ownership were instrumental (poor bus provision), symbolic (freedom) and affective (enjoyment). Learning to drive is highly normalised in Iceland and to not have passed a test at 17 years of age is extremely rare. For young people there is an emphasis of learning to drive in order to cruise the streets as a social activity and there is a lot invested in what their car looks like, thus the car is linked with a playfulness and emotional involvement. The author states "More than simply providing their users with autonomy and independence, cars promise unlimited access to space and control over it". However, some ambivalence was also shown to driving, even in this context, with suggestions from some participants that if other modes of transport satisfied their need for autonomy and mobility, they would opt for those.

[Attitudes to public transport, walking and cycling](#)

A small number of studies have focused on attitudes to alternatives to the car. Passenger Focus (now Transport Focus) carried out focus groups with 16-25 year olds to seek explanations for why young people are the age group with the least positive opinion on value for money of buses (Passenger Focus, 2013). They found the key factors for value for money are punctuality, frequency, ability to board the first bus that arrives and provision of information. Young people think they should only pay an adult fare at 18 years and need ticket flexibility. In her study of young people aged 16-22 living in a socially disadvantaged community in Bristol, Ricci (2016) found that consistently negative experiences with public transport reinforce the belief that car travel is preferable.

Some interesting research has been carried out in New Zealand where public transport share of travel is similar to the UK. Rive et al. (2015) found that the increase in public transport (and active transport) use among Generation Y 15-35 year olds is a generational effect and is set to continue but needs to be served well to fulfil its potential. Ward et al. (2016) asked non-car drivers aged 16-24 in an urban context to tell them about their experience of using public

transport and active transport (walking and cycling). They concluded "... it was clear that the participants were comfortable with their non-driving status, noting that public and active transport was more cost-effective, easy and convenient".

Research in California has compared attitudes towards and use of new shared mobility services between generations based on a questionnaire survey (Circella et al., 2016). It found members of Generation Y use smartphone mobility apps and new shared mobility services, such as on-demand ride services (Uber, Lyft), more often than members of Generation X and are more supportive of measures to fund public transport and reduce the environmental impacts of transport. An analysis of factors influencing usage of on-demand ride services found that usage is associated with older millennials (more than younger millennials), a higher level of education and living in more highly urbanised areas (Alemi et al., 2018). This suggests that these services may only be meeting the travel needs of a sub-section of younger adults.

Taking a broad view of why transport preferences vary across generations, a US study on long-distance travel found members of Generation Y to have different values to older generations (Coogan et al., 2016). They have a weaker 'auto orientation' – a term meaning the 'propensity to value the freedom and independence gained from owning cars and to disagree with the concept that borrowing or sharing a car is just as good as owning'. They also have greater interest in information and communication technologies (ICTs) and greater concern for privacy when travelling. The propensity to take rail for long-distance journeys was greater in Millennials with less interest in cars and more interest in ICTs, but lower in Millennials with greater concern for privacy for travel.

3.3.3 Impacts of transport

The evidence reviewed next suggests that education, training and employment opportunities can be adversely affected by limited and costly public transport options. Active travel makes a valuable contribution to the physical activity of some 17-24 year olds but there is scope for this to be extended to a higher proportion of this age group. Finally, transport independence helps in improving personal autonomy and wellbeing.

Access to education and training

The National Foundation for Educational Research (NFER) published a study on barriers to participation in UK education and training of 16-17 year olds in 2010 (Spielhofer et al., 2010). The results of a questionnaire survey of young people reaching the end of their compulsory schooling showed that 14% faced barriers in doing what they want, whilst 63% faced constraints affecting their choice of options. Transport availability was a lesser issue than transport costs with 29% of young people not in education, employment or training saying that they would have engaged in education after year 11 if they had received more help with transport costs. The figure was 39% for those in jobs without training. Transport costs were

more important to those living in rural areas or reporting poor public transport. Interviews showed that a sizeable proportion of young people have difficulty understanding bus and train times. This study confirms the importance of transport costs to young people, highlighting their importance at the post-16 transition point for continuing in education and training.

The Commission for Rural Communities (2012) looked in depth at the issue for young people in rural areas. Young people in rural areas are more dependent on public transport to access education and training but low availability and high cost can act as a barrier. Driving is too expensive for many of them. It noted that cuts in rural bus services along with reduced support from local authorities for post-16 travel to learning and abolition of the Education Maintenance Allowance have exacerbated the situation. The Wheels to Work scheme, which provides vehicle loans and other help for those out of work getting to work and training, was noted as a useful scheme but under financial pressure.

One study has examined the impact of transport on access and achievement in higher education (Kenyon, 2011). It conducted focus groups with undergraduate students (including non-traditional students not relocating to attend university) at the University of Kent. It found the students experienced exclusion from multiple academic-related activities (formal and informal teaching, peer assisted learning, placements, extra-curricular activities, printing and submitting coursework) because of inadequate transport access to these activities. Travel could have negative effects on available time for independent learning if travel times are too long. Students thought that physical presence was essential, even when online/remotely accessible alternatives were provided. Some considered abandoning their studies and some would have chosen another university had they known about transport difficulties with inadequate public transport provision and parking availability. The study found that most students, regardless of their socio-economic backgrounds, were experiencing some form of travel-related difficulty impacting on their university studies.

Access to employment

A number of studies have focused on transport-related difficulties to finding, securing and retaining employment. The Government's Social Exclusion Unit report (SEU, 2003) found that 16-24 year olds are more likely than average (25% compared to 13%) to have not applied for a job in the last 12 months due to transport problems. The most commonly cited problems for young people seeking work are no jobs nearby and lack of personal transport. It found that transport (lack of personal transport or poor public transport) was a barrier for two out of five jobseekers in getting a job and transport costs were a problem for one in four jobseekers getting to a job interview.

More recently, an evidence review found that transport barriers to employment and training have a disproportionate impact on young people because they have lower incomes to cover costs of transport, are less likely to have private transport and are more reliant on public

transport (Jones, 2012). This is particularly relevant for those in low paid, temporary, part-time employment and shift-work outside of peak times, especially when workplaces are located away from public transport routes and hubs. Jones concluded that UK policy does not do enough to address the transport disadvantage of young jobseekers. Apart from one-off initiatives to subsidise travel for jobseekers (e.g. free bus travel for one month), concessionary policies benefit primarily older and disabled people. Transport barriers to youth unemployment demand co-ordinated action by both local and national government and other relevant stakeholders.

Research by the Campaign for Better Transport (2012) found that the location and accessibility of Jobcentre Plus offices is a problem for jobseekers living in rural areas. Jobcentre Plus staff do not always recognise and acknowledge people's transport problems accessing their offices, e.g. daily or weekly sign-in can be a problem for jobseekers living in remote areas with no private transport and infrequent/unavailable or costly public transport.

Transport emerged as a particularly important issue for the young jobseekers considered by Tunstall et al. (2012) in research conducted for the Joseph Rowntree Foundation. As 76% of the low skill jobs analysed were part-time or involved non-standard hours and most were low paid (i.e. below the minimum and living wage), young jobseekers with no car, living far from these jobs and in areas poorly served by public transport would be at a disadvantage reaching them and also affording the extra transport costs. More than half of the vacancies examined in the study would be difficult to get to by public transport. Interviews with employers and labour market intermediaries showed that candidate qualifications is not the most important criterion in the selection process. Experience in the type of job, soft skills, personal traits and location (distance between home and workplace and ease of access by transport) are the key criteria. Employers offering part-time or shift work are reluctant to hire candidates from far and prefer local candidates or those who did not rely on public transport. This means that policies demanding much wider geographical searches may not necessarily get more people into work.

According to a review by Davis (2014), young people may have a highly localised geographical outlook, so their mental maps of potential workplaces can be highly localised. Young people from deprived areas may look for jobs and training opportunities in their local area and other areas accessible by public transport. If they rely on lift by friends, they will also tend to train and work where their friends work. There can be spatial mismatch between where young people live and the location of jobs for which they are qualified.

A recent Joseph Rowntree Foundation funded study into transport-related barriers to employment in low-income neighbourhoods looked in depth at the situations of out-of-work residents of six neighbourhoods in England and Scotland (Crisp et al., 2018). It did not specifically focus on young people, but it found that the residents considered employment opportunities difficult to reach by public transport and were therefore unwilling to look for jobs, especially if they perceived jobs to be insecure.

The above evidence provides a credible case for transport disadvantage adversely impacting on the employment prospects of young people, but is largely based on qualitative research and would be strengthened by robust, quantitative evidence. There are a few studies that have looked quantitatively at the relationship between transport availability and employment outcomes but most of these do not focus on young people. Kawabata (2003) found that improved public transport job-accessibility increased the likelihood of being employed for those without cars in Los Angeles and San Francisco, cities with high car dependency, but not in Boston which is a more compact city with a well-developed public transport system. A recent study used English Census data for 2011 to show that areas with longer public transport times to employment were associated with lower employment rates, after accounting for population characteristics and car availability (Johnson et al, 2017). Blumenberg and Ong (2001) reviewed studies on the role of transport and spatial context for welfare recipients in the United States finding work and reported that better access to jobs reduces the proportion of people on welfare and car ownership is a stronger correlate for a transition into work from welfare than education or training. They showed welfare recipients living in job-poor neighbourhoods in Los Angeles who were reliant on public transit had significantly more limited access to employment than those with a car.

An analysis of longitudinal data from the US Panel Study of Income Dynamics (PSID) found that young people in the lowest two income household quintiles who lacked access to cars growing up were less likely than matched peers to graduate from high school (Ralph, 2018). In turn, they were also less likely to attend college and less likely to eventually graduate from college. Teens who were carless growing up were 5.9 percentage points more likely to be unemployed at age nineteen. Twenty-five-year-olds who grew up without consistent access to cars were less likely to work and more likely to be unemployed than those with consistent car access. It was found being carless as a teen was more significant than being carless at a younger age. Ralph concluded that "Ultimately, car ownership likely helps transmit low-economic standing from one generation to the next; children whose parents' could not afford cars growing up earn less than their peers". It is hypothesised this is caused by children in families without cars being less able to access structured activities and suffering from their parents having poorer employment opportunities and access to services.

The American findings indicate that young people in lower income households without a car are likely to experience poorer education and employment outcomes than those with a car. The question is to what extent this applies to the UK. Qualitative data from the LSHTM study of free bus travel in London suggests that "transport exclusion is not a barrier for young people in London" (Green et al., 2014, xxv) due to the comprehensive public transport network and the concessionary fare scheme.

Transport costs and housing

We noted in section 3.1 that bus and rail costs have risen far more than retail prices between 2011 and 2017. This is a particularly important issue for the 16-24 age group who use public

transport more than other age groups. The over 60s also use buses more than average but benefit from free off-peak local bus travel.

Total expenditure on transport in young households (where the household head is aged under 30) has developed in similar ways to the average household since 2000 (LCFS, 2016). For both young and average households, expenditure in real terms declined between 2001/2 and 2011 and increased slightly afterwards. The pattern of decreasing overall expenditure among young households applies to vehicle ownership and personal transport but not to 'transport services' (bus, rail, taxi and other services). Young households spent more than the average household on 'transport services' (11% more in 2008 and 40% more in 2014). Over time there has therefore been a shift in expenditure away from motoring for all households, but especially for young households.

Young adults who do acquire a car have to pay much more for motor insurance than older motorists. Data on motor insurance premiums suggests that the price of motor insurance has increased faster than the costs of other goods and services over the long term, despite a reduction since 2012 as a result of government intervention (CMA, 2014). Transport costs are particularly difficult to bear for young adults given lower wage growth than for older adults in the post-credit crunch period and larger increases in housing expenditure. The percentage of weekly expenditure on housing increased from 15% in 2001/02 to 23% in 2014 for households headed by a person younger than 30 (LCFS, 2016). The Resolution Foundation has identified that young adults aged 25 to 34 are less likely to move job and home (usually done for a better career opportunity) now than in the past. One reason is that high costs of private renting in high wage areas discourage such moves (Judge, 2019). With less job and housing mobility than the past, it is not surprising to note that commuting times of this age group have risen from 25 minutes in 1996 to 32 minutes in 2017.

Physical activity

The latest data suggests that 72% of 16 to 34 year olds in England meet the Chief Medical Officer guidelines of achieving 150+ minutes of activity a week (Sport England, 2019) but 18% achieve less than 30 minutes a week. As with 5-16 year olds, a positive association exists between engagement in physical activity and mental wellbeing. An analysis of Active Lives Survey data has shown that 7% of all adults are dependent on active travel (walking and cycling for travel) for meeting physical activity guidelines (Cavill et al., 2019). Another analysis has found that those who report cycling for travel are four times more likely to be classified as active as other adults (Stewart et al., 2016). These findings demonstrate that walking and cycling for travel can make an important contribution to young adults' physical activity levels and hence their physical and mental health.

The 16-24 age group has higher prevalence of walking and cycling for travel than all other age groups (9% cycling at least once per week and 64% walking at least once per week

compared to 6% and 42% respectively for all ages) (CW0305⁶). Much higher prevalence of adults cycling than average occurs in places such as Cambridge (49% cycling at least once per week), Oxford (32%), Hackney (23%), Exeter (21%), York (20%) and Norwich (20%) (CW0302). This highlights that if more places were made cycle friendly then the contribution of cycling to physical activity could be much greater.

Independence, autonomy and wellbeing

A study in the United States has looked at how mobile phones are used in the daily lives of high school teenagers (Cope and Lee, 2016). It found mobile phones are used alongside cars to organise and enact a wide range of activities. Teens who could not drive and lived in low-income households had reduced scope for participation in social activities. The teens from a school in a higher density area were more able to manage activities without advance planning than those in a lower density area, indicating the importance of good physical access even in the smartphone era.

Qualitative research in a peripheral area of Bristol (Ricci, 2016) found that young people felt they did not have the power to affect decisions that would impact on them such as decisions on youth policy and on spatial and transport planning. They felt it unfair that older people could get a free bus pass when they have a pension, while younger people with no or low incomes have to pay a fare. They also bemoaned the lack of youth facilities in their area. Physical mobility through all means of transport was perceived as essential for personal development, growing up and wellbeing for young people.

A study focusing on disadvantaged mothers without car access (age not specified) found that walking in their local neighbourhood can actually undermine health and wellbeing in three ways (Bostock, 2001): through psychological and emotional stress suffered when walking with worn out children; physical fatigue due to long journeys on foot; limitation in the choice and quality of shops, facilities and amenities accessible on foot, compounded with the often neglected state of local walking environments. The above issues increased the sense of social exclusion experienced by these mothers. Walking in a deprived environment was a daily reminder of their marginalised conditions.

A quantitative study of young Australians aged 17-25 (Delbosc and Vella-Brodrick, 2015) found that transport independence, i.e. having mobility freedom and not having to rely on others for transport, is positively related to psychological autonomy, i.e. the ability to think, feel and make one's own decisions and choices, and indirectly related to wellbeing. Conversely, the findings suggest that lacking access to a car is associated with reduced transport independence, which in turn is associated with reduced autonomy and wellbeing. Although the study could not establish causality between transport independence and

⁶ Result from Walking and cycling statistics (CW) are referenced in terms of data table numbers such as CW0305. The data tables can be found at <https://www.gov.uk/government/statistical-data-sets/walking-and-cycling-statistics-cw>

autonomy, it is reasonable to suggest that increasing transport independence may be one method to increase autonomy and improve wellbeing.

4. Policy context and measures

In this section we summarise the current policy context and review policy measures (proposed and implemented) aimed at better enabling transport to meet the needs of young people.

4.1 Policy context and technological innovations

Apart from nationally significant transport schemes, policy making in transport is largely devolved to city regions and local authorities. The Government provides some investment funding to assist devolved administrations and local authorities improve transport in their area with any additional funding needing to be generated locally. The Government has taken a step to allow local authorities to take on greater powers over local buses. The Bus Services Act 2017 and subsequent regulations and guidance have extended the ability of local transport authorities to introduce franchising or partnership arrangements in their local area. In seven regions of England, Mayors have automatic access to the bus franchising powers contained in the Act. The Government also has a current call for evidence on light rail and other forms of rapid transit solutions.

The Government has required local authorities which are set to fail legal air quality levels in 2020 to introduce Clean Air Zones to tackle the problem. London has already introduced one and other cities are set to follow in 2020. The Clean Air Zones can be based on charging for use of the most polluting vehicles or based on other measures.

The Government does not have an overall transport policy at the current time or a strategy for public transport. The Government has a cycling and walking investment strategy intended to make walking and cycling the natural choices for shorter journeys and to double cycling by 2025 (DfT, 2017). This is accompanied by competitively-awarded funding initiatives such as the Access Fund, Cycle City Ambition grant programme and funding for Bikeability cycle training in schools.

Cities in the UK are seeking to reduce car traffic and improve public realm and quality of life. In London, the Mayor's Transport Strategy 2018 aims for 80% of all trips in London to be made on foot, by cycle or using public transport by 2041 (GLA, 2018). It adopts a Healthy Streets Approach to make health and personal experience a priority and is accompanied by

action plans for walking and for cycling. Similarly, the Greater Manchester Transport Strategy 2040 (TfGM, 2017) emphasises developing a multi-modal highway network, a fully integrated public transport system (bus, rail and Metrolink) and a comprehensive network of on and off-road walking and cycling routes. A 2017 report by Greater Manchester's Cycling and Walking Commissioner announced an aim to double and then double again cycling in Greater Manchester and make walking the natural choice for as many short trips as possible (GMCWC,2017).

Much of the emphasis in current national transport policy is on exploring the potential benefits of technological developments. It is said that "Britain is on the verge of a transport revolution" (DfT, 2019a). Transport is one of four grand challenges identified by the government in its Industrial Strategy in the form of the Future of Mobility Grand Challenge. Areas where major developments are taking place in transport are briefly discussed below.

The sharing of vehicles has been made more possible via information and communication technologies which link people to vehicles they can drive or enable them to get lifts from others. While the number of members of formal car clubs has grown steadily in the UK in the last decade, it has not noticeably affected car ownership. Peer to peer car sharing has also become possible where people agree to make their own vehicles available for use by others. Studies of the impact of ride-hailing (Uber and Lyft) in the United States suggest they make up a significant share of travel in cities such as San Francisco, but are largely used to replace active travel and public transport trips rather than car use. Bicycle sharing systems have been introduced in some cities in the UK but are not a major contributor to personal travel yet.

Mobility-as-a-Service (MaaS) is the concept where a single mobility solution can be offered to people allowing them access to multiple modes of transport via a one-stop online interface, comprising an intermodal journey planner, a single payment portal and a booking system for entire end-to-end journeys (GOS, 2019). It could promote a move away from car ownership. There are examples of partial MaaS offers such as Citymapper providing end-to-end journey planning across modes without a payment platform and digital ticketing across modes available via Oyster in London. A MaaS trial, Whim, has been launched in the West Midlands and offers packages covering public transport, taxi-share, car-share and bike-share services.

The electrification of transport is seen as pivotal to addressing carbon emissions and air quality challenges. Sales of battery electric and plug-in hybrid electric cars still represent a small share of new vehicle sales (2.4% of all new vehicle sales in the year to October 2018 (GOS, 2019)). Electric cycles and scooters have seen large growth in sales worldwide and have been shown to have strong potential to lengthen the journeys possible by pedal cycles and to replace car use. The cost of purchasing electric vehicles remains high relative to conventional vehicles and represents a barrier for widespread adoption.

There is a large amount of investment in the UK in connected and autonomous vehicles (CAVs) and an ambitious goal from the Chancellor of the Exchequer to introduce driverless vehicles on to UK roads by 2021. However, there is great uncertainty about the adoption rates of CAVs and how society will adapt to this technology. More fundamentally, it is unclear to what extent CAVs will be shared or privately owned. On the one hand CAVs could open up mobility for those unable to drive but on the other hand could price out those with the lowest incomes.

In its aim to maximise the benefits of new transport technologies, the Government has set out ten principles in its 'Future of Mobility: Urban Strategy' (DfT, 2019a). These include "The benefits of innovation in mobility must be available to all parts of the UK and all segments of society" and "Walking, cycling and active travel must remain the best options for short urban journeys" and "Mass transit must remain fundamental to an efficient transport system". These principles highlight the expectation that traditional transport options will continue to be important and new innovations need to be accessible to all groups in society, including young people.

4.2 Policy measures to support access to education, training and employment

As part of its inquiry on the participation by 16-19 year olds in education and training, the House of Commons Education Committee looked at the difficulty young people can face with travel costs (House of Commons Education Committee, 2011). It concluded "Some 16 to 18 year olds struggle with the cost of travel to and from study. There is a strong argument for saying that 16 and 17 year olds subject to compulsory study or training should be eligible for free (or perhaps subsidised) travel in the same way as children of compulsory school age. We recommend that the Government should, as part of its review of school transport, assess the cost of offering free or subsidised travel to all 16 to 18 year olds travelling to and from learning". As far as we know, there has not been a formal response on this from the Government.

The Intergenerational Foundation has estimated that the total cost of fare concessions for older people in England was almost £900 million in 2011/12 and almost £1.1 billion across the whole of the UK (Leach, 2013). The total cost of concessionary fares for older people has doubled in real terms in England since 2000. In 2012/13 concessions to young people of various types were offered in 28 of the 89 Travel Concession Authorities (TCAs) outside London (TCAs fund public transport operators) and in 80 TCAs concessions were offered by one or more bus operators on a commercial basis (Bourn, 2013). Examples of current concessionary fare offers for young people are as follows:

- London – young people under 18 years of age can travel free on buses and trams with a Zip Oyster Card and students and apprentices of 18 years or above can get 30% discounts on bus and tram travel.
- Manchester – a bus pass (Our Pass) is available enabling free bus travel for 16-18 year olds.
- Wales - a bus pass (MyTravelPass) is available for 16-21 year olds allowing 30% off fares for both local buses and long-distance buses in Wales.

Lancaster University's Work Foundation reviewed policies and initiatives taken to tackle transport disadvantage and made a set of recommendations (Jones, 2012).

- The Government should ensure that young, long-term unemployed people can access concessionary fares during their job search and first month of employment.
- Transport assistance for school-age children should increase in line with increases in participation age for education and training (up to the age of 18 in 2015).
- Jobcentres and other support agencies should identify and address transport barriers faced by young jobseekers.
- Young people should be consulted effectively over the planning and provision of local transport services.
- Local transport budgets should provide stable and long-term support for effective community and personal transport schemes.
- Information services such as Traveline should be improved, well-advertised accessible and accurate.

The Campaign for Better Transport came up with a set of recommendations to help those on low incomes looking for work, or staying in work, based on an analysis of the experience of clients who have approached Citizens Advice Bureaux for help and information (Campaign for Better Transport, 2012). Their recommendations were aimed directly at Government and its agencies.

- All agencies whose policies or decisions have a transport impact (e.g. policies on benefits and decisions on re-location or re-organisation of public services) should demonstrate that they have taken transport implications into account.
- The Departments for Work and Pensions and Transport should guarantee joint funding with local authorities of WorkWise schemes (offering unemployed people discounted travel along with advice on planning journeys).
- The Department for Work and Pensions should review guidance to Jobcentre Plus offices on meeting transport needs of jobseekers.

- The Department for Transport should develop proposals for the reform of bus policy to take account of those on low incomes and include sufficient funding for concessionary fare schemes.
- The Department for Transport should conduct research on the importance of bus services to disadvantaged groups and the impacts of bus funding cuts
- The Department for Transport should develop a package of measures to help the needs of people in rural areas (e.g. demand responsive public transport, measures to improve access to services, support for local bus services, improved integration of rail and bus services, development of local walking and cycling networks).

Many of the recommendations above are not calling for new initiatives but instead calling for secure funding for existing ones. However, there is little evidence on the benefits of previously implemented initiatives. This is largely because of the difficulty of monitoring and evaluating them. In the case of free bus travel for under 18 year olds in London, a well-resourced study was unable to identify changes in travel behaviour and safety amongst the target group which were attributable to the intervention, despite large-scale, travel data being available and qualitative research indicating that “the scheme increased opportunities for independent travel, social inclusion, and a sense of belonging and that it ‘normalised’ bus travel” (Green et al., 2014, vi). It is challenging to isolate the impacts of transport interventions from other trends/changes taking place, especially when they are relatively modest in the short run.

The difficulties of assessing the impacts of transport interventions is also evident from experience with initiatives undertaken by local authorities after the government required them to introduce accessibility plans after the Social Exclusion Unit report was published in 2003 (SEU, 2003). A review of the accessibility planning process in 2012 (Kilby and Smith, 2012) found there was a lack of systematic monitoring and evaluation of accessibility initiatives. In-depth assessment of a number of different types of initiatives showed that they were well-targeted at those in need and tangibly improved access, but data was not available to assess specific impacts on people’s lives (short-term or long-term).

One published study has been able to identify tangible, long-term impacts on young people’s employment opportunities. It looked at the impacts of a transport to employment scheme (T2E) in rural Highland Scotland. The scheme involved a centrally co-ordinated shared transport service using taxis which provided access to workplace, training and childcare where no alternative transport is available. A survey of users found it succeeded in enabling young people to access employment they would not have been able to access otherwise and social benefits were found to outweigh the investment by 3:1 (Wright et al., 2009). However, the scheme was found to not be financially sustainable without subsidy and was discontinued after three years.

Some local initiatives have focused on supporting access to employment for young people through active travel modes rather than motorised transport. Nottingham City and Derby City Councils have funded Sustrans to develop personal travel plans for jobseekers and to provide a range of support and training activities including reconditioned cycles, maintenance courses, and cycle training (Sustrans, 2019).

4.3 Policy measures to improve public transport

The importance of affordable public transport to young people is apparent from the recommendations above. Recommendations have been made for improvements to public transport to better meet the needs of young people without a particular focus on access to education, training and employment.

The British Youth Council conducted an inquiry on the safety, affordability and accessibility of public transport after a poll of young people identified transport as a priority issue (British Youth Council, 2012). Its Youth Select Committee recommendations were:

- 1 Adult fares should only apply at 18 years of age and government should set expectations for concessionary fare schemes with the ultimate aim of a national concessionary fare scheme.
- 2 Better passenger online information should be required and made available.
- 3 Research should be carried out to see if bursaries to assist young people access education are serving this role.
- 4 Every transport authority should have a youth forum.
- 5 Improve staff training regarding disabilities.
- 6 Assess rural transport provision for young people.

At about the same time, PTEG (now Urban Transport Group) responded to concerns about spending cuts affecting bus services with ideas on a good bus offer for young people (PTEG, 2012). PTEG looked at case studies of real-world practice and recommended specific measures to support affordability, availability and acceptability of buses (with some suggestions beyond buses) with these separately identified for under 5 year olds, 5-11 year olds, 11-16 year olds and 17-20 year olds. This is said to recognise that transport needs vary over the life course. For example, with affordability, the emphasis for under 5 year olds is making transport more affordable for parents and carers, the emphasis for 5-11 year olds is enabling access to out-of-school activities, the emphasis for 11-16 year olds is to develop flat, simple and consistent fare offers to support growing independence and the emphasis for 17-20 year olds is to develop flat, simple and consistent fare offers to enable this group to meet

work, study and social commitments. Simple, flat and consistent fares and better information on services/fares are core recommendations. Three key messages accompany the recommendations: engaging young people in the process, the need for a package of measures and the need for simplicity.

More recently, Transport Focus (formerly Passenger Focus) has carried out research investigating what young people think of buses (Transport Focus, 2018) after noting young people aged 16-25, especially 16-18 year olds, have the lowest satisfaction levels with buses of any age group. The fieldwork carried out in 2017, comprising a questionnaire survey and focus groups, found young people aged 14-19 years of age are becoming spontaneous and independent in their lives but have anxiety about 'getting it right' when using buses. Those at the older end of the spectrum (17-19 years of age) are prepared to pay more for convenience and consider using Uber if available in their area. Young people are put off by poor quality and their top three priority improvements are value for money, Wi-Fi and more buses at times they need them. The conclusion is that young people want many of the same things as other age groups but do not feel services are designed with them in mind, have concern about how the system works, want a better journey experience and find fares confusing and inconsistent.

Transport Focus held five workshops around England to get feedback on the findings and gather additional information. This led to a final set of recommendations for making bus a better choice for young people:

- Get the basic service right;
- Help young people feel more confident;
- Use technology to engage them; and
- Offer simple, consistent fares.

It is interesting to note that research in New Zealand showed strong potential for future growth in public transport given the higher use of public transport by members of Generation Y (aged 15-35 at time of the research) compared to previous generations and their expressed willingness to continue using it (Rive et al., 2015). When asked about priority areas for improvement of public transport, it was found improved service coverage and frequency are priorities both to members of Generation Y and older generations, while pricing mechanisms around transfers and improved information (both real-time travel information and general information access through a Wifi service) are priorities for members of Generation Y. Hence, it was recommended that service improvements are targeted first of all followed by smarter ticketing options, real-time information and Wi-Fi.

4.4 Policy measures to increase walking and cycling

We did not find policy recommendations specifically to improve the conditions and opportunities for young people to walk and cycle but the policy goals identified by the EPSRC Understanding Walking and Cycling Project (Pooley et al., 2011) apply to all age groups:

- Create a safe physical environment for pedestrians and cyclists where most people feel comfortable either walking or cycling;
- Encourage motorists to be more aware of the vulnerability of pedestrians and cyclists and thus reduce perceptions of risk associated with active travel;
- Reduce trip distances in urban areas by providing more retail, social and educational facilities close to residential areas, and facilitate access to such services;
- Create a social and economic environment in which active travel (walking or cycling) is seen as achievable by most people for short trips in urban areas; and
- Promote the normality of walking and cycling.

4.5 Policy measures to make driving safe and affordable

The study of young people's attitudes to learning to drive and the insurance market carried out by Watt et al. (2012) for the Department for Transport explored young people's opinions on various matters related to driving. Young people felt insurance was expensive and unfair and wanted Government to act to ensure insurance premiums are set fairly for young people. Young people did not positively perceive black box technology in cars or night-time driving restrictions but were more positive about phased driver licensing, especially if it reduced insurance premiums.

4.6 General policy measures

Titheridge et al. (2014) reviewed the literature on transport and poverty and produced a broad set of policy and research recommendations. Specifically concerning young people, they recommended sustained travel assistance for jobseekers and low income students (for example, through a combination of concessionary fare schemes, wheels to work schemes,

bicycle loan schemes and season ticket loans). They recommended efforts to ensure walking environments are safe, secure and high quality given those on low income rely on walking. They also recommended paying attention to access and equity in planning infrastructure and services and extending the London bus provision model to the rest of the UK.

In reviewing the international body of research on the decline in driving of young people, Delbosc and Ralph (2017) put forward the view that this trend has occurred both because of multimodal, urban, tech-savvy millennials and because of struggling, low-income suburban/rural millennials. They suggested that current developments in mobility-as-a-service, electric vehicles and road pricing are likely to assist the urbanites and policies are needed to support the mobility needs of suburban/rural millennials such as requiring ride-sharing firms to serve unprofitable areas and compensation from road pricing for those who have no alternatives to the car.

5. Transport and young people's development

In this part of the report we summarise how transport affects young people's development and future prospects based on the evidence from the literature review. We present this in terms of eight 'impact pathways' that have emerged from the literature review. These are different ways in which transport affects (positively and negatively) the lives of young people. Some of the impact pathways apply to young people at a certain life stage (e.g. at school) but they all have potential relevance and implications for young people's lives ahead. Not all of the impact pathways we have identified have received the same level of attention in academic research and policy-making. In many cases, they have been examined in different (and often disconnected) disciplinary domains (e.g. labour market economics, public health, cultural geography, transport studies).

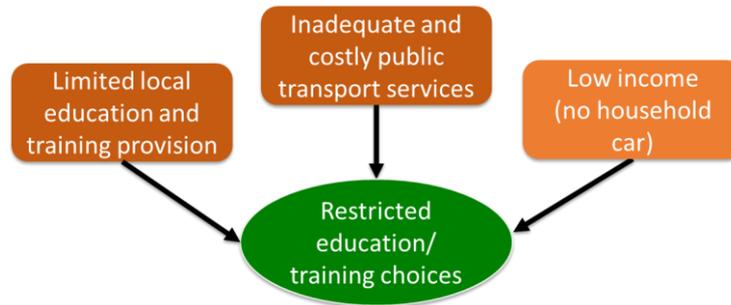
What is distinctive about the impact pathways is that they concern how transport affects the long-term realisation of potential of young people through the opportunities they have available to them and the quality of those opportunities. Previous research has focused on the physical health impacts on young people of traffic exposure and this offers important additional knowledge.

An impact pathway diagram is shown in each case for how transport and other life circumstances can affect young people's capability set and functionings ('beings' and 'doings') and health and wellbeing using the terminology of the Capability Approach. Capability set and functionings are shown with green-shaded ellipses and health and wellbeing impacts are shown (where they have been evidenced in the literature) with blue hexagons. Factors influencing the capability set or functionings are shown with brown or orange rectangles (brown rectangles representing meso-level factors and orange rectangles representing micro-level factors). Quotes are used to illustrate the impact pathways with these taken from the studies reviewed or from the digital engagement with young people that took place within the Young people's future health inquiry.

- 1 **Education and training options.** Young people can have limited local education and training options due to lack of transport to get to more distant opportunities. For example, research has shown children from non-professional families living in dense, urban areas, or rural areas, travel shorter distances to school than children from professional families (Gordon and Monastirioti, 2007).

"I also had to go to sixth form instead of college due to the transport."

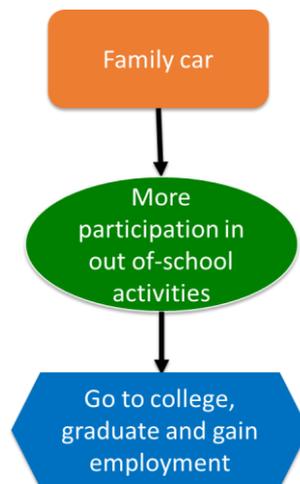
F-17, Denbighshire



- 2 **Participation in out-of-school activities.** A household car has been found to enable children to participate to a greater extent in out-of-school activities (Davis et al., 2018; Ralph and Iacobucci, 2018) and a link has been shown between growing up without a car in the household and being less likely to go to college/university and get employment (Ralph, 2018).

“Ultimately, car ownership likely helps transmit low-economic standing from one generation to the next; children whose parents’ could not afford cars growing up earn less than their peers.”

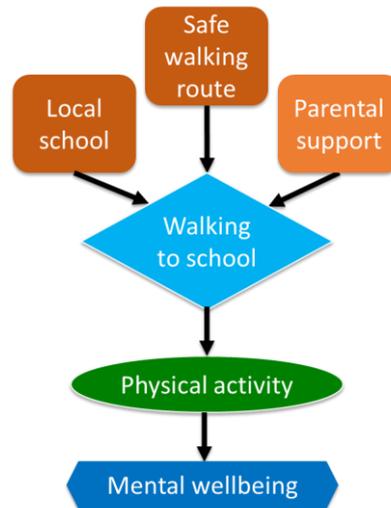
Ralph, 2018



- 3 **Physical activity and mental wellbeing.** Walking has been shown to contribute 36% of moderate to vigorous physical activity for high school (14-18 year old) students who get to school in this way (Martin et al., 2016) and a positive association has been demonstrated between physical activity and mental wellbeing (Sport England, 2018). It is also known that physical activity tracks from adolescence into adulthood (Telama, 2009). Walking is, however, the usual method of travel to school for only about one-third (35%) of 11-16 year olds in England and riding a bicycle is the usual method for only 4% of 11-16 year olds.

“Walking is a good time to think and relax outside after stressful days and makes me feel calmer.”

M-16, Bradford



- 4 **Independence, autonomy and self-worth.** Making it possible for school-age young people to use transport independently from parents/adults (both physically and financially) has been shown to have multiple benefits. For example, free bus travel for under 18 year olds in London has been found to provide a space for interaction with peers and to engage in activities that they choose and value (Jones et al., 2012). It has been shown greater transport independence is associated with increased autonomy in young people’s lives (to make their own decisions) (Delbosc and Vella-Brodrick, 2015).

“I go places more...than I would normally [without the free pass]...Like football, just places to out with my friends [I go to] more... if I had to pay for the bus then it would cost more to go out...than I’ve got.”

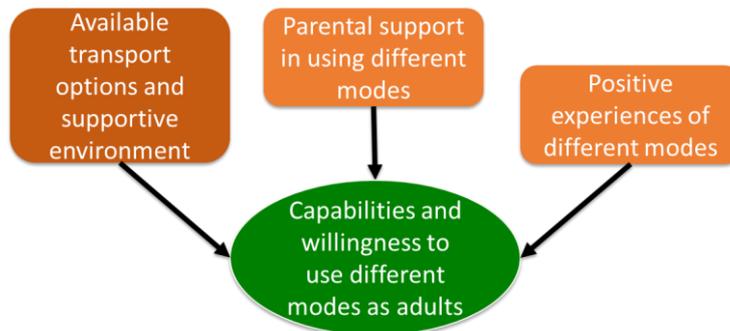
from focus group with males 14-18 quoted in Jones et al., 2012



- 5 **Capabilities and willingness to use transport options.** Cycling training has been found to increase children’s confidence and enjoyment of cycling (Johnson et al., 2016), although not to overcome wider barriers to cycling such as lack of safe infrastructure (Goodman et al., 2016). Nevertheless, positive experiences and parental support in childhood have been found to increase the willingness of young people to cycle as adults (Sigurdardottir et al., 2013) and young people whose parents emphasised the environmental problems of car use have greater willingness to use alternatives to the car as adults (Haustein, 2009).

“It’s really good for young people to almost, like, have to get the bus because it does give you some kind of, like, knowledge, because when I asked my friends [...] they were literally like, you need to give us directions to the bus, you need to tell us what to ask the bus driver”.

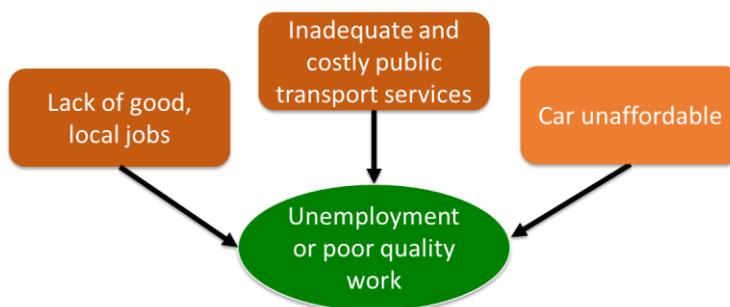
F17-19 quoted in Ricci, 2016



- 6 **Employment opportunities.** It has been found that areas with better public transport access to jobs have higher employment rates after accounting for car availability (Johnson et al., 2017) and that out-of-work residents of deprived areas found employment opportunities difficult to reach by public transport and were therefore unwilling to look for jobs, especially insecure jobs (Crisp et al., 2018). Employers offering part-time or shift work are reluctant to hire candidates from far and preferred local candidates or those who did not rely on public transport (Tunstall et al., 2012).

“I think employers from further afield find it difficult to understand why you’re applying for a low paid job that you’ll have to travel to. I don’t think I will be able to support myself living here in the future. I may have to move.”

M-23, Bradford

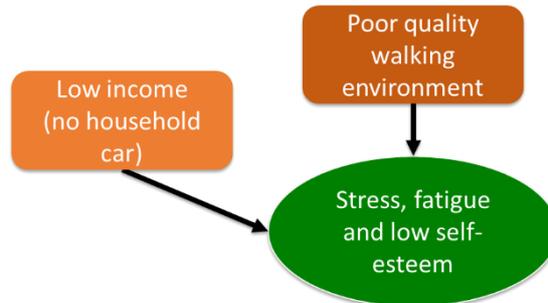


- 7 **Stress, fatigue and low self-esteem.** While walking is a healthy and environmentally sensitive method of travel, it can have negative connotations if the quality of the walking environment and local amenities is poor and other transport options are not available. For those of school-age it can mean they have restricted independent mobility (Jones et al., 2000) and for those older it can cause psychological and emotional stress (Bostock, 2001).

“I try not to think about it even. But when I walk up the shops and you pass the houses that have been boarded up, the pub that has been burnt out and the

park that is covered in glass, dog mess and God-knows-what, it does get to you... You feel forgotten and it doesn't feel good."

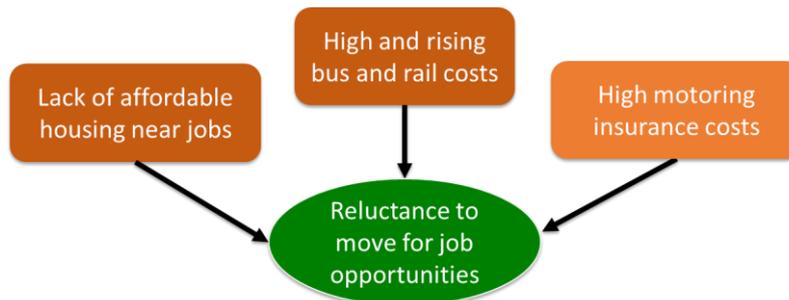
Lone mother on income support quoted in Bostock, 2001



- 8 **High transport costs and job/housing immobility.** Increases in public transport costs above inflation since 2011 are particularly significant for young people aged 16-24 who use public transport more than other age groups and have seen stagnant wage growth and large increases in housing expenditure. Young adults aged 25-34 are less likely to move job and home for better career opportunities than in the past with the costs of private renting in high wage areas discouraging such moves (Judge, 2019). At the same time, transport costs discourage travelling long distances to work in high wage areas.

"I'll be 23 by that point so hopefully I'll be able to live somewhere close enough to my place of work or study so I won't have to drive, or that public transport has become a more viable option for me."

F-18, Lisburn



6. Policy and research recommendations

This section makes policy recommendations in the light of our review of existing literature and our analysis of how transport can affect young people's development and future prospects. It also makes recommendations for research that can assist with further understanding how transport affects young people.

Re-prioritising investment

1 **Transport subsidies should be redirected as a force for positive change for young people**

A more equitable transport system would reflect the full environmental and other negative costs to society of private car use and reward young people for travelling sustainably. Subsidies and policies that stimulate car use carry negative effects to public health, and tend to impact disproportionately on those living in more deprived areas. The full costs of environmental impacts of driving (e.g. air quality, carbon emissions, noise) are not paid by the motorist. A transformative transport system would reward positive travel choices, rather than locking-in behaviours with a greater negative cost to society, and thereby benefit younger people.

2 **Government needs to support systems for concessionary fares, bursaries and loans that are clear, universal and consistently applied**

The high cost of and lack of access to good quality public transport is limiting opportunities available to young people and holding back their potential. Concessionary fares systems need to be non-discretionary and funded across the UK to benefit those younger people who are most in need of reduced travel costs. Concessionary fares should cover all those subject to compulsory study or training (16 and 17 year olds) and all those people under 25 looking for work and in the first months of employment. Educational institutions should review their transport bursary schemes and ensure they are adequately addressing the needs of all students facing hurdles in travelling and all employers should be required to provide transport loans so that younger people can access more affordable public or active transport through season tickets and other discount schemes.

3 **Government should invest a greater proportion of the overall transport budget in walking and cycling and encourage younger people to travel actively**

Transport investment should align with the move towards preventive healthcare. Too few young people are walking or cycling, partly due to poor physical environments to do so

and partly due to not developing skills and capabilities. This represents a risk factor for their current and future physical health and mental wellbeing. Active travel by walking or cycling is better for young people's health and wellbeing than using cars. The planning system should prioritise the creation and retention of jobs for younger people in locations that can be served by walking, cycling or public transport. Shared bicycle and other transport schemes should allow for those without a bank card to sign up. Young people should have access to free cycle training designed to achieve the take up of cycling for routine journeys. Schools and other educational institutions should have appropriate infrastructure to provide for them to be reached by walking and cycling, and infrastructure for cycling and walking should address the needs of younger people in terms of destinations, amenity and convenience.

Enhancing decision-making

4 Transport planning decisions should acknowledge impacts of transport on young people and reflect the need to reduce inequality in transport access in the investment decision making process

Decisions on transport planning do not sufficiently acknowledge the wider societal and wellbeing impacts of transport for young people. Transport appraisal and planning needs to take a whole-system approach and to ensure that the wider benefits to young people of well-connected places, both in the short-term and longer-term impact on their wellbeing, are taken into account when appraising investment. Investment decisions should be guided by whether they reduce inequality in transport access, including for young people.

5 Planning regulations should ensure that housing connects younger people to sustainable transport options

The design and location of where people live has a significant influence on how people travel. New development that is attractive to younger people should wherever possible be located within or adjacent to existing urban areas or commuter hubs. Existing housing stock that is suited to younger people should be connected to transport infrastructure that supports mobility for younger people.

Better understanding young people's needs

6 Transport regulators and providers should engage with local youth councils and other fora to ensure they are aware of the needs and views of younger people on local transport issues

There needs to be a clearer voice for young people in planning and delivering transport services. Stakeholders in local authorities with similar characteristics should share learning with each other about the approaches they are adopting to give young people a voice and address their needs. Public transport planners and providers need to recognise many younger people's work increasingly involves shift or weekend work and services need to respond appropriately.

7 Government needs to initiate in-depth research and analysis of young people's travel patterns, needs and attitudes, and of the role of transport access and choice in supporting young people to develop and transition to an independent, healthy future

The role of transport as one of the key building blocks in supporting young people to develop and transition to an independent healthy future has not been sufficiently acknowledged and it is surprising there is not a better understanding of young people's travel patterns, needs and attitudes. Our review identified a large range in young people's experiences and attitudes depending on their income, location and the nature of the transport offer near them. It is therefore important for this research to cover different socio-economic circumstances and geographical areas and to examine the relationship between access to different modes of transport and educational, employment and social outcomes for young people. We have identified the key priorities for such research and analysis in Figure 9.

Figure 9: Research priorities

Topic	Research questions	Approach
Understanding the role of the household car and other transport options for children's participation in out-of-school activities	<p>A household car is now considered an essential item for families with children (according to Minimum Income Standard research).</p> <ul style="list-style-type: none"> • What are the impacts on children in the UK of growing up without a household car and how does this vary by location? • Do other transport options offer suitable alternatives? 	Combination of analysing household longitudinal data and conducting in-depth interviews with families
Identifying how more children can be encouraged to cycle for utilitarian travel purposes after undertaking cycle training	<p>Cycle training has been found to increase children's confidence to cycle and their cycling skills but to lead to limited increases in cycling to school and for other utilitarian travel purposes.</p> <ul style="list-style-type: none"> • What barriers exist to children making journeys from A to B after undertaking cycle training? • What steps can be taken to increase the number of children who cycle for utilitarian travel? 	Conducting follow-up research with children who have undertaken cycle training across a variety of schools/contexts
Understanding the social and economic benefits of concessionary bus travel for young people	<p>Useful knowledge was gained from research assessing the health impacts of free bus travel for under 18 year olds in London but more can be learned on how concessionary bus travel supports young people's lives.</p> <ul style="list-style-type: none"> • What activities are young people able to do which they were previously unable and how does this affect their long-term prospects? • What is the role of concessionary bus travel in reducing inequalities? 	Establishing a panel of young people in an area where a new concessionary scheme is being introduced and tracking changes in travel and activities after scheme introduction
Evaluating the effectiveness of local initiatives to support young people's employment opportunities	<p>In the past there has been a lack of systematic monitoring and evaluation of local initiatives to improve access to education, training and jobs for disadvantaged young people.</p> <ul style="list-style-type: none"> • What opportunities do these initiatives provide that would not have been available otherwise and what differences does this make in the long-term? • How can such initiatives be financially sustainable? 	Identifying beneficiaries of such initiatives and tracking their career development
Understanding how the social distribution of impact component of transport economic appraisal frameworks address the needs of young people	<p>Transport economic appraisal approaches include analysis of social distribution of impact. It is not immediately clear how these tools deal with the impacts of transport investment on younger people.</p> <ul style="list-style-type: none"> • What do the tools identify as the impact on young people? • Do these impacts align with the issues identified in this study and in the wider literature? • How are the impacts valued? • Do the tools support equality? 	Combination of analysis of social distribution of impacts components of DfT economic impact appraisal tools and testing mechanisms to enhance assessment in this area

7. References

Alemi, F., Circella, G., Handy, S. and Mokhtarian, P., 2018. What influences travelers to use Uber? Exploring the factors affecting the adoption of on-demand ride services in California. *Travel Behaviour and Society*, 13, pp.88-104.

Baslington, H. (2008). Travel socialization: A social theory of travel mode behavior. *International Journal of Sustainable Transportation*, 2(2), 91-114.

Berrington, A. and Mikolai, J., 2014. Young adults' licence-holding and driving behaviour in the UK: full findings. London: RAC Foundation. Available from https://www.racfoundation.org/assets/rac_foundation/content/downloadables/Young-Adults-Licence-Holding-Berrington-Mikolai-DEC-2014.pdf (24/06/19)

Blumenberg, E. and Ong, P., 2001. Cars, buses, and jobs: welfare participants and employment access in Los Angeles. *Transportation Research Record*, 1756(1), pp.22-31.

Bostock, L., 2001. Pathways of disadvantage? Walking as a mode of transport among low-income mothers. *Health and Social Care in the Community*, 9(1), pp.11-18.

Bourn, R., 2013. *No Entry! Transport Barriers facing Young People*. Report to Campaign for Better Transport. London: Intergenerational Foundation. Available from <http://www.if.org.uk/research-posts/no-entrytransport-barriers-facing-young-people-government-policy-hits-young-hardest/> (24/06/19)

British Youth Council, 2012. Youth Select Committee Report: Transport and Young People. British Youth Council. Available from <https://www.byc.org.uk/uk/youth-select-committee/reports> (24/06/19)

Bush, D.M. and Simmons. R.G., 1981. Socialization processes over the life course. In: Rosenberg, M. and Turner, R.H. (Eds) *Social Psychology*. New York: Basic Books.

Campaign for Better Transport, 2012. *Transport barriers to getting a job – Evidence from Citizens Advice clients*. London: Campaign for Better Transport. Available from <https://bettertransport.org.uk/sites/default/files/research-files/Transport-barriers-to-getting-a-job.pdf> (24/06/19)

Cavill, N., Davis, A., Cope, A. and Corner, D. 2019, *Active Travel and Physical Activity Evidence Review*. Sport England. Available from <https://www.sportengland.org/research/understanding-audiences/active-travel/> (24/06/19)

Chatterjee, K., Sherwin, H. and Jain, J. (2013). Triggers for changes in cycling: The role of life events and modifications to the external environment. *Journal of Transport Geography*, 30, 183-193.

Chatterjee, K., Goodwin, P., Schwanen, T., Clark, B., Jain, J., Melia, S., Middleton, J., Plyushteva, A., Ricci, M., Santos, G. and Stokes, G., 2018. *Young People's Travel – What's Changed and Why? Review and Analysis*. Project Report. Department for Transport, Bristol. Available from <https://www.gov.uk/government/publications/young-peoples-travel-whats-changed-and-why> (24/06/19)

Chen, Q., Levine, S. and Polak, J., 2014. *Generation Next: The Changing Travel Habits of Pre-Driving Age Young People in Britain*. London: RAC Foundation. Available from <https://www.racfoundation.org/research/mobility/generation-next-teenage-travel-behaviour-report-october-2014> (28/05/19)

Circella, G., Fulton, L., Alemi, F., Berliner, R.M., Tiedeman, K., Mokhtarian, P.L. and Handy, S., 2016. *What Affects Millennials' Mobility? PART I: Investigating the Environmental Concerns, Lifestyles, Mobility-Related Attitudes and Adoption of Technology of Young Adults in California*. Research Report from the National Center for Sustainable Transportation, UC Davis. Available from <https://ncst.ucdavis.edu/project/ucd-ct-to-11/> (24/06/19)

Collin-Lange, V., 2014. 'My Car is the Best Thing That Ever Happened to Me' Automobility and Novice Drivers in Iceland. *Young*, 22(2), pp.185-201.

Commission for Rural Communities (2012). *Barriers to Education, Employment and Training for Young People in Rural Areas*. Gloucester: Commission for Rural Communities. Available from <https://dera.ioe.ac.uk/15199/1/Barriers-to-education-employment-and-training-for-young-people-in-rural-areas.pdf> (24/06/19)

Competitions and Markets Authority (CMA) (2014) *Private Motor Insurance Market Investigation: Final Report*. Available at: https://assets.digital.cabinet-office.gov.uk/media/5421c2ade5274a1314000001/Final_report.pdf (17/04/16).

Coogan, M., Ajzen, I., Bhat, C., Lee, B., Ryerson, M. and Schwieterman, J., 2016. *Intercity Passenger Rail in the Context of Dynamic Travel Markets*. National Cooperative Rail Research Program (NCRRP) Report 4. Washington, DC: Transportation Research Board. Available from <http://www.trb.org/Main/Blurbs/173822.aspx> (24/06/19)

Cope, M. and Lee, B.H., 2016. Mobility, communication, and place: Navigating the landscapes of suburban US teens. *Annals of the American Association of Geographers*, 106(2), pp.311-320.

Crisp, R., Ferrari, E., Gore, T., Green, S., McCarthy, L., Rae, A., Reeve, K. and Stevens, M. 2018. *Tackling Transport-related Barriers to Employment in Low-income Neighbourhoods*. York: Joseph Rowntree Foundation. Available from <https://www.jrf.org.uk/report/tackling-transport-related-barriers-employment-low-income-neighbourhoods> (24/06/19)

Davis, A., 2014. *Addressing attitudes of young people aged 16-24 and young mothers towards sustainable travel modes, barriers to behaviour change, and channels to engage them in voluntary travel behaviour change*. A literature review. Bristol: Wheels to Work West.

Davis, A., Hirsch, D., Padley, M and Shepherd, C. 2018. *A Minimum Income Standard for the UK, 2008–2018: continuity and change*. York: Joseph Rowntree Foundation. Available from <https://www.jrf.org.uk/report/minimum-income-standard-uk-2018> (10/09/19)

Delbosc, A. (2012) The role of well-being in transport policy. *Transport Policy*, 23, pp.25-33.

Delbosc, A. and Vella-Brodrick, D., 2015. The role of transport in supporting the autonomy of young adults. *Transportation Research Part F: Traffic Psychology and Behaviour*, 33, pp.97-105.

Delbosc, A. and Currie, G., 2011. Transport problems that matter—social and psychological links to transport disadvantage. *Journal of Transport Geography*, 16, pp.170–178.

Delbosc, A. and Currie, G., 2014. Using discussion forums to explore attitudes toward cars and licensing among young Australians. *Transport Policy*, 31, pp.27-34.

Delbosc, A. and Ralph, K., 2017. A tale of two millennials. *The Journal of Transport and Land Use*, 10(1), pp.903-910.

Department for Transport (DfT), 2017. *Cycling and Walking Investment Strategy*. London: Department for Transport. Available from <https://www.gov.uk/government/publications/cycling-and-walking-investment-strategy> (24/06/19)

Department for Transport (DfT), 2019a. *Future of Mobility: Urban Strategy*. London: Department for Transport. Available from <https://www.gov.uk/government/publications/future-of-mobility-urban-strategy> (20/06/19)

Department for Transport (DfT), 2019b. *Transport Statistics Great Britain*. Available from <https://www.gov.uk/government/collections/transport-statistics-great-britain> (24/06/19)

Department for Transport (DfT), 2019c. *Annual Bus Statistics: England 2017/18*. Available from <https://www.gov.uk/government/annual-bus-statistics-year-ending-march-2018> (10/09/19)

Department for Transport (DfT), 2019d. *National Travel Survey Collection*. Available from <https://www.gov.uk/government/collections/national-travel-survey-statistics> (24/06/19)

Driller, B. K. and Handy, S.L. (2013). *Exploring the influence of parents on children's bicycling in Davis, CA*. Online proceedings of 92nd Transportation Research Board Annual Meeting, 13-17 January, Washington, D.C.

Elder Jr, G.H., 1998. The life course as developmental theory. *Child Development*, 69(1), pp.1-12.

Fylan, F. and Caveney, L., 2018. Young people's motivations to drive: expectations and realities. *Transportation Research Part F*, 52, pp.32–39.

Goodman, A., Jones, A., Roberts, H., Steinbach, R. and Green, J., 2014. 'We can all just get on a bus and go': Rethinking independent mobility in the context of the universal provision of free bus travel to young Londoners. *Mobilities*, 9(2), pp.275-293.

Goodman, A., van Sluijs, E.M. and Ogilvie, D., 2016. Impact of offering cycle training in schools upon cycling behaviour: a natural experimental study. *International Journal of Behavioral Nutrition and Physical Activity*, 13(1), p.34.

Gordon, I. and Monastiriotis, V., 2007. Education, location, education: a spatial analysis of English secondary school public examination results. *Urban Studies*, 44(7), pp.1203-1228.

Government Office for Science (GOS), 2019. *Future of Mobility: A Time of Unprecedented Change in the Transport System*. Foresight, Government Office for Science. Available from <https://www.gov.uk/government/publications/future-of-mobility> (24/06/19)

Greater London Authority (GLA), 2018. *Mayor's Transport Strategy*. Available from <https://www.london.gov.uk/what-we-do/transport/our-vision-transport/mayors-transport-strategy-2018> (24/06/19)

Greater Manchester Cycling and Walking Commissioner, 2017. *Made to Move: 15 steps to transform Greater Manchester by changing the way we get around*. Available from https://assets.ctfassets.net/nv7y93idf4jq/1a6j4qoJe6OwcKIAly0qs/9e1429b07eacde218045d327ecef90dc/Made_to_move.pdf

Green, J., Steinbach, R., Jones, A., Edwards, P., Kelly, C., Nellthorp, J., Goodman, A., Roberts, H., Petticrew, M. and Wilkinson, P., 2014. On the buses: a mixed-method evaluation of the impact of free bus travel for young people on the public health. *Public Health Research*, 2(1).

Green, J., Steinbach, R., Garnett, E., Christie, N. and Prior, L., 2018. Automobility reconfigured? Ironic seductions and mundane freedoms in 16–21 year olds' accounts of car driving and ownership. *Mobilities*, 13(1), pp.14-28.

Harper, H., 2005. An Investigation into the Social Exclusion of Young People in Relation to Transport Provision: A Literature Review. TRL REPORT TRL 628. Crowthorne: TRL Limited.

Haustein, S., Klöckner, C. A., and Blöbaum, A. (2009). Car use of young adults: The role of travel socialization. *Transportation Research Part F: Traffic Psychology and Behaviour*, 12(2), 168-178.

Hopkins, D., 2016. Can environmental awareness explain declining preference for car-based mobility amongst generation Y? A qualitative examination of learn to drive behaviours. *Transportation Research Part A: Policy and Practice*, 94, pp.149-163.

Horton, J., Christensen, P., Kraftl, P. and Hadfield-Hill, S., 2014. 'Walking... just walking': how children and young people's everyday pedestrian practices matter. *Social & Cultural Geography*, 15(1), pp.94-115.

House of Commons Education Committee (2011). *Participation by 16-19 year olds in education and training*. Fourth Report of Session 2010–12: Volume I. London: The Stationery Office Limited.

Jensen, M., 2006. Mobility among young urban dwellers. *Young*, 14(4), pp.343-361.

Johnson, D., Ecolani, M. & Mackie, P., 2017. Econometric analysis of the link between public transport accessibility and employment. *Transport Policy*, Volume 60, pp. 1-9.

Johnson, R., Frearson, M. and Hewson, P., 2016. Can bicycle training for children increase active travel? *Proceedings of the Institution of Civil Engineers*.

Jones, K., 2012. *Missing Million Policy Paper 2: Transport Barriers to Youth Employment*. The Work Foundation. Available from <https://bettertransport.org.uk/blogs/campaigns/transport-barriers-to-youth-employment> (24/06/19)

Jones, H., Chatterjee, K. and Gray, S., 2015. Understanding change and continuity in walking and cycling over the life course: A first look at gender and cohort differences. In *Räumliche Mobilität und Lebenslauf* (pp. 115-132). Springer VS, Wiesbaden.

Jones, L., Davis, A. and Eyers, T., 2000. Young people, transport and risk: comparing access and independent mobility in urban, suburban and rural environments. *Health Education Journal*, 59(4), pp.315-328.

Jones, A., Goodman, A., Roberts, H., Steinbach, R. and Green, J., 2013. Entitlement to concessionary public transport and wellbeing: a qualitative study of young people and older citizens in London, UK. *Social Science & Medicine*, 91, pp.202-209.

Jones, A., Steinbach, R., Roberts, H., Goodman, A. and Green, J., 2012. Rethinking passive transport: bus fare exemptions and young people's wellbeing. *Health & place*, 18(3), pp.605-612.

Judge, L. 2019. *Moving Matters: Housing costs and labour market mobility*. Resolution Foundation, June 2019. Available from [https://www.resolutionfoundation.org/publications/\(24/06/19\)](https://www.resolutionfoundation.org/publications/(24/06/19))

Kane, M. and Bibby, J., 2018. *A Place to Grow: Exploring the Future Health of Young People in Five Sites across the UK*. The Health Foundation. Available from <https://www.health.org.uk/publications/a-place-to-grow> (20/06/19)

Kawabata, 2003. Job access and employment among low-skilled autoless workings in US metropolitan areas. *Environment and Planning*, 35(9), pp. 1651-1668.

Kenyon, S., 2011. Transport and social exclusion: access to higher education in the UK policy context. *Journal of Transport Geography*, 19(4), pp.763-771.

Kilby, K. and Smith, N. 2012. *Accessibility Planning Policy: Evaluation and Future Direction - Final Report to DfT*. Available from <https://www.gov.uk/government/publications/accessibility-planning-policy-evaluation-and-future-directions> (4/1/19)

Le Vine, S. and Polak, J., 2014. Factors associated with young adults delaying and forgoing driving licenses: Results from Britain. *Traffic Injury Prevention*, 15(8), pp.794-800.

Living Costs and Food Survey (LCFS) (2016) UK Data Service series record. Available from <https://discover.ukdataservice.ac.uk/series/?sn=2000028> (26/04/16)

Leach, J., 2013. *Fare Concessions For Older People: Identifying the Numbers*. Intergenerational Foundation. Available from <http://www.if.org.uk/research-posts/fare-concessions-for-older-people-identifying-the-numbers/> (24/06/19)

Levitas, R., 1996. The concept of social exclusion and the new Durkheimian hegemony. *Critical Social Policy*, 16(46), pp.5-20.

Line, T., Chatterjee, K. and Lyons, G., 2010. The travel behaviour intentions of young people in the context of climate change. *Journal of Transport Geography*, 18(2), pp.238-246.

- Lovell, N. and Bibby, J., 2018. *What Makes us Healthy? An Introduction to the Social Determinants of Health*. London: The Health Foundation. Available from <https://www.health.org.uk/publications/what-makes-us-healthy> (28/05/19)
- Marsden, G. et al. (2018) *All Change? The future of travel demand and the implications for policy and planning, First Report of the Commission on Travel Demand*, ISBN: 978-1-899650-83-5. Available from <http://www.demand.ac.uk/commission-on-travel-demand/> (24/06/19)
- Martin, A., Kelly, P., Boyle, J., Corlett, F. and Reilly, J.J., 2016. Contribution of walking to school to individual and population moderate-vigorous intensity physical activity: systematic review and meta-analysis. *Pediatric exercise science*, 28(3), pp.353-363.
- Martin, A., Moreland, V., Harper, H. and Huggins, P., 2004. *An Investigation into the Social Exclusion of Young People in Relation to Transport Provision*. TRL REPORT TRL 616. Crowthorne: TRL Limited.
- Mattioli, G. and Colleoni, M., 2016. Transport disadvantage, car dependence and urban form. In: Pucci, P., Colleoni, M. (Eds.), *Understanding Mobilities for Designing Contemporary Cities*. Heidelberg: Springer.
- NHS Digital, 2018. *Health Survey for England 2017: Summary of key findings*. Available from <https://digital.nhs.uk/data-and-information/publications/statistical/health-survey-for-england/2017> (24/06/19)
- OECD (2013). *OECD Guidelines on Measuring Subjective Well-being*, Paris: OECD Publishing. Available from <https://www.oecd.org/statistics/oecd-guidelines-on-measuring-subjective-well-being-9789264191655-en.htm> (28/05/19)
- Passenger Focus, 2013. *Bus passenger views on value for money*. London: Passenger Focus. Available from <https://www.transportfocus.org.uk/research-publications/publications/bus-passenger-views-on-value-for-money/> (24/06/19)
- Pooley, C., Tight, M., Jones, T., Horton, D., Scheldeman, G., Jopson, A., Mullen, C., Chisholm, A., Strano, E. and Constantine, S., 2011. *Understanding walking and cycling: Summary of key findings and recommendations*. Lancaster University.
- PTEG, 2012. *Moving On: Working towards a better public transport offer for young people in tough times*. Leeds: PTEG. Available from http://www.urbantransportgroup.org/resources/children-and-young-people?qt-contextual_resources=2&page=1 (24/06/19)

Pucher, J. and Buehler R., 2007. At the frontiers of cycling: Policy innovations in the Netherlands, Denmark and Germany. *World Transport Policy & Practice*, 13(3), pp.8-56.

Ralph, K.M., 2018. Childhood Car Access: Long-term Consequences for Education, Employment, and Earnings. *Journal of Planning Education and Research*, p.0739456X18798451.

Ralph, K.M. and Iacobucci, E., 2018. *Driven to Participate (Literally): Transportation Barriers to Teen Activity Participation*. Paper presented at Transportation Research Board 97th Annual Meeting.

Ricci, M., 2016. Young age, mobility and social inclusion in a disadvantaged urban periphery in England. In *Intergenerational Mobilities* (pp. 136-150). Routledge.

Richardson, E.A., Pearce, J., Tunstall, H., Mitchell, R. and Shortt, N.K., 2013. Particulate air pollution and health inequalities: a Europe-wide ecological analysis. *International Journal of Health Geographics*, 12(1), p.34.

Rive, G., Thomas, J., Frith, B. and Chang, J., 2015. *Public Transport and the Next Generation*. New Zealand Transport Agency. Available from <https://www.nzta.govt.nz/resources/research/reports/569> (24/06/19)

Schwanen, T., Lucas, K., Akyelken, N., Solsona, D.C., Carrasco, J.A. and Neutens, T., 2015. Rethinking the links between social exclusion and transport disadvantage through the lens of social capital. *Transportation Research Part A: Policy and Practice*, 74, pp.123-135.

Sen, A.K., 1979. Equality of what? In McMurrin, S. (Ed.), *Tanner Lectures on Human Values* (pp. 195–220). Cambridge: Cambridge University Press.

Sen, A.K., 1992. *Inequality Reexamined*. Oxford University Press.

Sen, A.K., 2009. *The idea of Justice*. Harvard University Press.

Social Exclusion Unit (SEU), 2003. *Making the Connections: Final Report on Transport and Social Exclusion*. London: Social Exclusion Unit.

Shaw, B., Watson, B., Frauendienst, B., Redecker, A., Jones, T. with Hillman, M., 2013. *Children's Independent Mobility: A Comparative Study in England and Germany (1971-2010)*. London: Policy Studies Institute. Available from http://www.psi.org.uk/site/publication_detail/852 (28/05/19)

Sigurdardottir, S.B., Kaplan, S., Møller, M. and Teasdale, T.W., 2013. Understanding adolescents' intentions to commute by car or bicycle as adults. *Transportation Research Part D: Transport and Environment*, 24, pp.1-9.

Spielhofer, T., Golden, S., Evans, K., Marshall, H., Mundy, E., Pomati, M. and Styles, B., 2010. *Barriers to participation in education and training*. Slough: NFE National Foundation for Educational Research. Available from <https://www.nfer.ac.uk/barriers-to-participation-in-education-and-training/> (24/06/19)

Sport England, 2018. *Active Lives Children and Young People Survey Academic Year 2017/18*. Sport England. Available from <https://www.sportengland.org/news-and-features/news/2018/december/06/first-active-lives-children-and-young-people-survey-report-more-than-40-of-children-lead-active-lives/> (24/06/19)

Sport England, 2019. *Active Lives Adult Survey November 17/18 Report*. Sport England. Available from <https://www.sportengland.org/research/active-lives-survey/> (24/06/19)

SRA, 2015. *On the Move: Exploring Attitudes to Road and Rail travel in Britain*. London: Independent Transport Commission. Available from <http://www.theitc.org.uk/wp-content/uploads/2015/07/ITC-ORR-Road-Rail-Attitudinal-Report-Final.pdf> (24/06/19)

Stewart, G., Anokye, N.K. and Pokhrel, S., 2016. Quantifying the contribution of utility cycling to population levels of physical activity: an analysis of the Active People Survey. *Journal of Public Health*, 38(4), pp.644-652.

Sustrans, 2019. *Helping Jobseekers get on their bikes in Nottingham and Derby*. Available from <https://www.sustrans.org.uk/our-blog/opinion/2019/april/helping-jobseekers-get-on-their-bikes-in-nottingham-and-derby/>

Telama, R., 2009. Tracking of physical activity from childhood to adulthood: a review. *Obesity facts*, 2(3), pp.187-195.

Taylor, J., Barnard, M., White, C., Lewis, J., 2007. *Understanding the Travel Aspirations, Needs and Behaviour of Young Adults*. Report to Department for Transport by NatGen. Available from <http://dera.ioe.ac.uk/7358/> (24/06/19)

Titheridge, H., Mackett, R.L., Christie, N., Oviedo Hernández, D. and Ye, R., 2014. *Transport and Poverty: A Review of the Evidence*. University College London. Available from <http://discovery.ucl.ac.uk/1470392/1/transport-poverty%5B1%5D.pdf> (24/06/19)

Transport Focus, 2018. *Using the Bus: What Young People Think*. Summary Report. London: Transport Focus. Available from <https://www.transportfocus.org.uk/research-publications/publications/using-bus-young-people-think/> (24/06/19)

Transport for Greater Manchester (TfGM), 2017. *Greater Manchester Transport Strategy 2040*. Available from <https://tfgm.com/2040> (24/06/19)

Tunstall, R., Lupton, R., Green, A., Watmough, S. and Bates, K., 2012. *Disadvantaged Young People Looking for Work: A Job in Itself?*. York: Joseph Rowntree Foundation. Available from <http://eprints.lse.ac.uk/47212/> (24/06/19)

Urban Transport Group (UTG), 2018. *Number Crunch: Transport Trends in the City Regions*. Leeds: Urban Transport Group. Available from <http://www.urbantransportgroup.org/resources/types/reports/number-crunch-transport-trends-city-regions> (24/06/19)

United Nations Secretary-General's High-Level Advisory Group on Sustainable Transport, 2016. *Mobilizing Sustainable Transport for Development: Analysis and Policy Recommendations*. Available from <https://sustainabledevelopment.un.org/content/documents/2375Mobilizing%20Sustainable%20Transport.pdf>

Ward, A.L., Baggett, T., Orsini, A., Angelo, J. and Weiss, H., 2014. Participatory photography gives voice to young non-drivers in New Zealand. *Health Promotion International*, 31(2), pp.280-289.

Watt, C., Murphy, L. and O'Brien, I. 2012. *Young Drivers Focus Group Research on Attitudes to Driving and Insurance*. Aegis Media. Department for Transport.

Wright, S., Nelson, J.D., Cooper, J.M. and Murphy, S., 2009. An evaluation of the transport to employment (T2E) scheme in Highland Scotland using social return on investment (SROI). *Journal of Transport Geography*, 17(6), pp.457-467.

Appendix 1. The Capability Approach

Sen introduced the Capability Approach (Sen, 1979) to offer an alternative and more effective way to understand and evaluate human development and the equality of individuals. Rather than the space of utilities, as in Bentham's Utilitarianism, and the space of primary goods, as in the Rawlsian Theory of Justice, Sen proposes that interpersonal wellbeing and equality are evaluated using the space of an individual's 'capabilities', i.e. the capability of a person "to do things he or she has reason to value" (Sen 2009, p. 231).

The capabilities are the combination of all the possible 'beings' and 'doings', i.e. the 'functionings', a person can achieve. According to Sen, the capabilities represent the real opportunity to live the life we value. In other words, the capabilities of a person represent the real freedom to achieve the functionings we have reason to value and to pursue wellbeing. Because the freedom to choose and live the life we value is constitutive of wellbeing, the capabilities, not just the functionings, are also relevant for a person's wellbeing.

"Achievement is concerned with what we manage to accomplish, and freedom with the real opportunity that we have to achieve what we value" (Sen 1992, p.31)

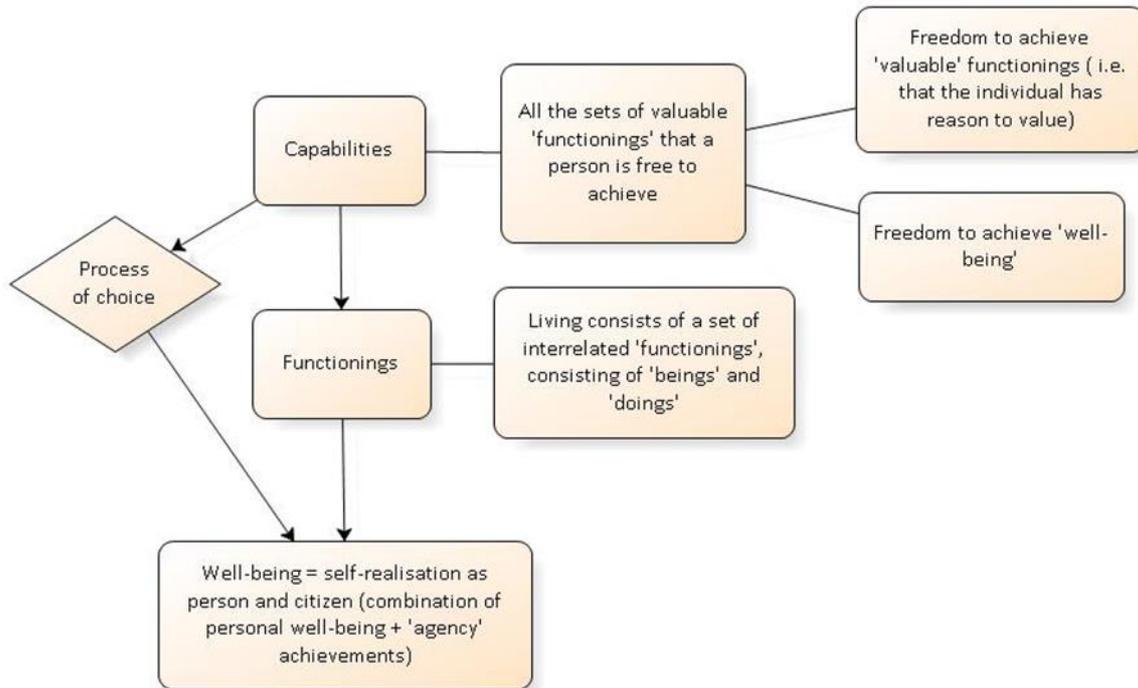
Functionings are much more than just achievements – they can further shape and enhance the capabilities of a person and help them achieve more functionings.

The Capability Approach distinguishes between 'personal wellbeing' and 'agency wellbeing' (Sen 1992). The former is related to the achievement of personal goals and objectives, the latter is about the ability of a person to achieve broader goals they value, e.g. the protection of the environment, which are not necessarily or directly linked to their own wellbeing. A person's wellbeing is a combination of these two types of wellbeing.

According to Sen (1992) the process of choice between different combinations of functionings in the capability space is also important, as a life where there are serious choices among similar alternatives is richer than one where few or no choices are available. For Sen, the freedom and ability to choose are crucial for wellbeing and important in their own right.

Figure 10 illustrates all these concepts and how they are interrelated.

Figure 10: Capabilities, functionings and wellbeing according to Sen's Capability



Approach