How is Social Equity Understood in UK city Transport Strategies A Study of Oxford and London Transport Strategies.

by Sarah Hearn

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How is Social Equity Understood in UK City Transport Strategies? A Study of Oxford and London Transport Strategies.

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Being a dissertation submitted to the faculty of The Built Environment as part of the requirements for the award of the MSc Transport and City Planning at University College London: I declare that this dissertation is entirely my own work and that ideas, data and images, as well as direct quotations, drawn from elsewhere are identified and referenced.

Sarah Hearn

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List of Abbreviations

GLA	Greater London Authority
LTP	Local Transport Plan
MTS	Mayor's Transport Strategy
OCC	Oxfordshire County Council
OTS	Oxford Transport Strategy
TfL	Transport for London

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Abstract

There is a need to create socially equitable transport networks within cities to ensure all people can access desired areas and opportunities. Without socially equitable transport networks, people are at risk of facing social isolation, inaccessibility to employment areas and transport poverty. In the UK, transport strategies set the overarching transport vision, but research has shown that social aspects of transport are not prioritised.

This dissertation therefore assesses how social equity has been conceptualised, measured and prioritised in the Mayor's London Transport Strategy (MTS) and the Oxford Transport Strategy (OTS) through strategy analysis, expert interviews and public surveys.

The key findings showed that social equity was a term neither used by experts nor referenced in strategies. Both strategies identified broad social aims and whilst the MTS policies were more detailed than the OTS objectives (primarily due to the strategy creation process), neither strategy included measurement tools and overlap was seen between economic, social and environmental aims of objectives/policies. The surveys showed a need for improved accessibility to opportunity areas, highlighting the need for more meaningful accessibility policies. The findings culminated in multiple proposed policy measures to better enhance the inclusion of social equity in transport strategies.

1. Introduction

1.1 Context

Bruntland (1987) identified three sustainability pillars; environmental, social and economic. These pillars must be equally considered within planning to ensure sustainable development. However, academics and professionals have generally prioritised the economic and environmental pillars over social (Colantonio 2009) despite social sustainability alone holding vital importance (Biart 2002).

UK transport planning is underpinned by sustainable development principles (Gov 2018a) but this sector has also neglected social sustainability (Markovich and Lucas 2011). Transport has an important social role in creating equitable societies as it ensures people have access to opportunities, allows the maintenance of social relationships and contributes to societal well-being (Allen and Farber 2019). Social equity is therefore an important aspect of social sustainability (Littig and Greißer 2005) which is rooted in ideas of fairness and justice (Taylor 2006).

Whilst the benefits of equitable transport networks have been acknowledged by academics (Banister 1994; Lucas *et al* 2019), social equity is often not explicitly considered by transport policymakers (Manaugh *et al* 2015; Hay and Trinder 1991). UK transport strategies are expected to be created with the three sustainability pillars at the heart, but with social sustainability being such an ambiguous term, and social equity being just one aspect of social sustainability, including social equity in transport strategies is challenging.

1.2 Background

Transport policy and academia have predominately explored economic and environmental objectives, but transport planning is now evolving and increasingly recognises social equity (Lucas *et al* 2019). However, there are no definitive social equity definitions within the transport sector and measurement tools are worryingly absent (Di Ciommo and Shiftan 2017).

Hay and Trinder (1991) explored how justice, equity and fairness are understood by UK transport policymakers and concluded that equity was becoming increasingly recognised although it was not the most important criteria. In recent years, Manaugh *et al* (2015) explored how social equity is included and interpreted within North American transport plans and identified that economic and environmental objectives took precedent over social objectives and when included, social objectives were often not accompanied with sufficient measurement tools. There is therefore scope to add to Hay and Trinder's (1991) study and expand Manaugh et *al's* (2015) research to UK transport strategies. Hay and Trinder (1991) conclude their paper with a suggestion for further research into whether social

equity definitions provided by professionals is shared by local communities. This evidences a research gap and an up to date study on these topics will add to the understanding of how social equity is understood and translated into policy.

The study aims to explore how social equity is understood by transport professionals, represented in transport strategies and perceived by the public to see if there is consistency between the groups and whether strategies are representative of local needs. This will culminate in an exploration as to how social equity objectives could be more effectively included in transport strategies. These aims will be achieved through an exploration of the MTS and OTS. The research combines work on definitions (Hay and Trinder 1999; Guy and McCandless 2012) with an evaluation of transport strategies (Manaugh *et al* 2015) and provides a unique insight into UK transport policy.

1.3 Research Question

This research will investigate how social equity is included in UK transport strategies. A study of the MTS and OTS has been undertaken through plan analysis, expert interviews and public surveys.

Oxford and London are the case studies. Oxford is a medium sized city in central southern England governed by OCC which has Conservative-Independent majority (OCC 2019). It has a population of 154,600 (OCC 2018, based off ONS 2017) of which 33,640 are students (OCC 2018), evidencing an unusual population mix. Contrastingly, London is much larger (population of 9,176,530 (World Population Review 2019)) and the predominant governing party is Labour (London Councils 2017). Despite their differences, they are the first and fifth (respectively) least affordable UK cities (Lloyds Bank 2019) and are both growing (OCC 2018; GLA 2019). These factors make the cities interesting from a social perspective. Transport strategies have been explored as they include specific objectives/proposals in addition to broad transport visions and are in-depth documents.

Consequently, the research question and objectives are:

How is social equity understood in UK city transport strategies? A study of Oxford and London transport strategies.

1. To understand how social equity is conceptualised, measured and prioritised in London and Oxford's transport strategies;

2. To understand expert opinions on how social equity is defined in different strategies;

3. To explore whether the way social equity is presented in each strategy is representative of the needs of the public.

1.4 Structure

The dissertation consists of six chapters. Chapter 2 will critically review social sustainability, social equity and transport literature. Chapter 3 will set out the chosen methods and associated ethics. Chapters 4, 5 and 6 highlight the key research findings through description, analysis and discussion. Chapter 6 consists of the conclusions, future policy and research topics and highlights the research limitations.

2. Literature Review

This chapter examines the relationship between social sustainability, social equity and transport. An exploration of how social equity transport objectives are conceptualised, prioritised and measured in academia will also be undertaken. The chapter concludes by highlighting the research gaps.

2.1 Social Sustainability

Social sustainability is acknowledged as being important in all planning decisions (Woodcraft 2012). However, it is still the most under-theorised and weakest of Brundtland's (1987) sustainability pillars (Colantonio 2009; Lehtonen 2004). Social sustainability therefore has many wide-ranging definitions which depend on the context and approach taken by each academic. Vallance *et al* (2011: 342) argue that it is 'concept in chaos' and the table below epitomizes this idea; there are a range of social sustainability definitions spanning across academic and professional sectors.

Table 1: Social sustainability definitions

Author	Social Sustainability Definitions	Limitations of the definition
Sachs (1999:27)	'must rest on the basic values of equity and democracy, the latter meant as the effective appropriation of all human rights – political, civil, economic, social and cultural – by all people'	Very limited definition as solely focuses on equity and democracy
Littig and Grießer (2005:72)	'A quality of societies. It signifies the nature-society relationships, mediated by work, as well as relationships within the society'	Very broad as it does not describe what quality of society is being referenced.
Colantonio and Dixon (2009: 4)	'how individuals, communities and societies live with each other and set out to achieve the objectives of development models which they have	Very broad - does not define any aspect of social sustainability

	chosen for themselves, also taking into account the physical boundaries of their places and planet earth as a whole'	
Dempsey *et al* (2011: 290)	'a wide-ranging multi-dimensional concept, with the underlying question 'what are the social goals of sustainable development?''	Very broad
Woodcraft and Bacon (2011:16)	'process for creating sustainable, successful places that promote well-being, by understanding what people need from the places they live and work'	Purely focuses on development
Berkeley Group (2012:9)	'people's quality of life, now and in the future. It describes the extent to which a neighbourhood supports individual and collective well-being'	Solely focuses on development
UN Global Compact (2019)	'about identifying and managing business impacts, both positive and negative, on people'	Solely focuses on business

Table 1 shows contrasting definitions of social sustainability which all have limitations. The diversity of social sustainability definitions was recognised by Vallance *et al* (2011) who produced three categories for social sustainability definitions; bridge, maintenance and development sustainability. Vallance *et al*'s (2011) theorisation, although disputed by some (Lee and Jung 2019), has generally been accepted in academia (Bouzguenda et al 2019; Wolbring and Rybchinski 2013) and 'development sustainability', which addresses social capital/equity and basic needs, has been predominately used in planning and transport planning literature.

Social sustainability, planning and the urban environment have been heavily researched. Figure 1 shows a variety of theorised social sustainability features based on research by Littig & Grießler (2005), RESCUE (2000), Dempsey *et al* (2009), Cuthill (2010), Baines and Morgan (2006) Baines and Morgan (2004), Colantonio (2007) and Colantonio and Dixon (2009).

Figure 1: Social sustainability aspects (adapted from Weingaertner and Moberg 2014)

This diagram shows the complex issues linked to social sustainability and highlights the difficultly of containing all aspects of social sustainability in one definition. Consequently, there are many ideas around social sustainability and identifying a theme to focus on in relation to planning is challenging; Ardda *et al* (2018) question whether there is a 'right' social element to prioritise. Academics have also argued that social sustainability is very conceptual which makes it difficult to be practically included within planning (Woodcraft 2012; Campbell 1996). Further work must be done to understand the effectiveness of social sustainability within planning.

2.2 Social Equity

Equity is a vital part of social sustainability because societies with low disparity levels have longer life expectancies, stronger civic engagement patterns and higher economic growth rates (GVRD 2005; Baines and Morgan 2006; Sachs 1999). Whilst some academics may not agree that equity should be the most prioritised component of social sustainability (Biart 2002; Assefa and Frostell 2007), almost all social sustainability academic papers reference the need for an equitable society.

Social equity is therefore generally accepted as an aspect of social sustainability and has been widely theorised, from Putnum (2000) and social capital to Sen (1999) and Nussbaum (2003) and the capabilities approach. Rawls (1971) produced another conceptualisation and argued for the 'original position' which is a hypothetical situation in which free, equal and rational persons come to an agreement regarding the principles of social justice. All these approaches differ, highlighting the difficulty theorising social equity.

Social equity therefore has no universal definition. It is generally accepted that it is based on the supposition that 'each person is equal and has inalienable rights' (Guy and McCandless 2012:1), based on Aristotle's early conceptualisations (Taylor 2006). However, when writing about social equity, most academics provide their own definitions, as seen by Norman-Major's (2011: 239) definition of 'maintaining or creating equality of opportunity', Schafritz and Russell's (2000: 436) definition of 'the principle that each citizen, regardless of economic resources or personal traits, deserves and has a right to be given equal treatment by the political system' and Hay and Trinder's (1991: 459) definition of 'relating to the provision of transport to meet basic needs.' These definitions show that social equity definitions can be general as well as specific, evidencing the broad span of equity issues.

No social equity definition is provided by the UK government and instead, the term 'social justice' is used (Gov 2012). This highlights a difference in terms between academics and professionals. Guy and McCandless (2012) argue that social equity should be acknowledged by governments because they are obliged to resolve issues created by the market and social dynamics which cannot be solved on their own. The reasons why social equity is not universally acknowledged is a research gap.

Conversely, some academics reference spatial equity (Tsou *et al* 2005; Talen and Anselin 1998). This term is often used when researching service provision, with the aim of equal distribution. Hay's (1995) research addresses how geographical differences between places can enhance inequality and focuses on normative aspects of equity whereas Talen and Anselin (1998) assessed the empirical process of when and why spatial inequalities exist. It is generally accepted that spatial equity is linked to accessibility of areas (Talen and Anselin 1998) whereas social equity is linked to human factors of

fairness (Guy and McCandless 2012). Academic literature tends to reference social equity more than spatial equity in relation to social sustainability and this requires further exploration.

2.3 Social Equity and Transport

Transport distributes socio-economic benefits and losses and therefore links to social equity (Beyazit 2011). Di Ciommo and Shiftan (2017) argued that accessibility, affordability and impact on population subgroups are the main social equity factors to be considered in relation to transport. This is in line with the literature which has predominantly addressed how transport has different implications depending on personal characteristics and how some transport modes are more inclusive than others (Preston and Raje 2007; Banister 1994; Fernando and Porter 2002; Bickerstaff and Walker 2001), emphasising that social equity is a key transport planning consideration.

Verhoef *et al* (2001) argues that transport investments often result in gains and losses from different groups (Verhoef *et al* 2001). The losses and gains will affect different regions as specific locations accumulate benefits, creating uneven geographical development (Harvey 2006). This theorisation incorporates social and spatial equity without a specific focus on either term which suggests that a range of academics have identified equity issues in relation to transport but there is inconsistent terminology.

Inaccessibility and transport poverty have also been explored (Lucas 2012) and millions are in danger of facing transport poverty (Allen and Farber 2019). Lucas (2012) concluded that the combination of social and transport disadvantage often leads to exclusion from society and opportunities. In response, academics have explored how high accessibility levels result in quicker commuting times (Schneider and Hu 2015), higher rates of employment (Sanchez 1999) and greater levels of community engagement (Farber and Paez 2009). Most social inequality and transport studies have consisted of qualitative research and these have been proven most effective in understanding social transport impacts (Sanchez *et al* 2003; Hine 2008).

Most social equity literature focuses on assessing one transport mode which may not be representative of the equity of the whole transport network. Goldman and Gorham (2006) theorised that transport is an open system which is intertwined with other systems. In order to create a socially equitable transport network, Goldman and Gorham's theorisation can be used to consider all aspects of the transport network as a 'system' rather than solely focusing on individual transport modes.

Consequently, this literature review has evidenced that accessibility, affordability and impacts on different population groups are the predominant social equity concerns. The definition of social equity as '*the principle that all people, regardless of economic resources or personal traits, deserves and has*

a right to benefit from an accessible transport system to meet their basic needs' based on Hay and Trinder's (1991), Schafritz and Russell's (2000) and Di Ciommo and Shiftan (2017)'s research will be used in this research.

The literature has also highlighted the following contributing factors for the achievement of this definition:

- recognising different groups have different transport needs (Preston and Raje 2007; Banister 1994; Fernando and Porter 2002; Verhoef 1997; Harvey 2006)
- recognising that transport affects different areas in different ways (Verhoef 1997; Harvey 2006)
- recognising that transport and social disadvantage are often linked (Lucas 2012; Allen and Farber 2019)
- recognising the impact of inaccessibility to areas of opportunity (Schneider and Hu 2015; Sanchez 1999; Farber and Paez 2009)

2.4 Measuring Social Equity

Social sustainability and social equity indicators are 'frustratingly abstract' (Dale and Newman 2009:670), and often do not exist. Lucas (2012) identifies that social factors are difficult to measure because they are multi-dimensional, relational and ever-changing and Karjalainen and Juhola (2019) highlight issues with data availability as a predominant reason for poor social assessments. Therefore, it is difficult to work out what is 'normal' when measuring social equity.

Traditional measurements, for example cost-benefit analysis, are outdated and insufficient to measure social equity (Lucas *et al* 2019; Di Ciommo and Shiftan 2017). Consequently, new indicators are emerging which must incorporate uncertainty, be multi-dimensional, strategically focused and objective driven (Colantonio 2009; Manaugh *et al* 2015). Academics are proposing that different types of social equity assessment techniques should be combined (Manugh *et al* 2015; Colantonio 2009) and Di Ciommo and Shiftan (2017) propose using isochrones and gravity-based indicators to measure accessibility. Public Transport Accessibility Levels are also used to assess accessibility (Wu and Hine 2003). Therefore, measuring and quantifying social equity goals is complex and measurement tools predominately focus on accessibility.

Furthermore, Handy (2008) argues that measures must precisely match the goals of plans as if goals are not accompanied with performance measures, they have little effect on policies. The literature

therefore portrays the overriding message for a need to change how social goals are measured: there is no definitive framework for measuring social equity.

2.5 Transport Plans and Social Equity

'Making the Connections' (SEU 2003) provides policy guidance to UK local authorities to deliver accessibility planning in transport (SEU 2003). Lucas (2012) assessed the relative success of this scheme but only addressed social exclusion, which is one aspect of social equity.

Manaugh *et al* (2015) explored social equity objectives in North American city transport plans and concluded that objectives around social equity tended to be vague, with the environment and congestion often prioritised. Similarly, Berke and Conroy (2000) city and county plan evaluation complies with Manaugh *et al's* (2015) results.

Hay and Trinder's (1991) research concluded that whilst experts believed that social equity should be considered in transport policy, it was not the most significant consideration compared to the economy and environment. Furthermore, Hay and Trinder (1991) assessed the relevance of political parties on definitions of social equity and no significant difference was found. No other research has focused on the impact of political influence in relation to social equity and transport plans, highlighting another research gap. Additionally, there has been research based on transport plans but none solely in the UK showing a need for more research.

Manaugh *et al* (2015)'s research, which incorporated much of the reviewed literature, highlights the following 'good examples' of social equity objectives:

- 'Support links from disadvantaged communities to jobs and services… Provide travel benefits to persons of all ages, abilities, incomes, races and/or ethnicity…. Provide improved transportation choices to economically disadvantaged persons' (Chicago Metropolitan Agency for Planning 2008: 27-28)
- 'Provide better access for all, including youth, elderly and disabled users, and members of zero-vehicle households' (Boston Region Metropolitan Organization 2009: 2)
- 'Provide equitable levels of transportation services for low-in-come, minority, and elderly and disabled persons' (SANDAG 2007:23)

These objectives are clearly articulated, relate to multiple dimensions of equity, specify targeted groups and areas and have clear measures (Manaugh *et al* 2015). These themes were discussed in sections 2.3, 2.4 and 2.5 and illustrate good practice.

2.6 Public Perception of Transport and Social Equity

There has been limited academic research on the public's perception of transport equity. Studies include Shafer *et al* (2000) who researched Texas greenways. They argue that the public's perception of means and quality of transport modes significantly impacts their choices. Factors including health, natural areas, better land use and accessibility to all encouraged public use. Grujičić *et al* (2014) researched the public's level of satisfaction of the public transport system in Belgrade and whilst this provided insight into how perceptions influence the chosen mode of transport, there was not an exploration into how this influences policy or affects equity. Additionally, Ettema *et al* (2011) proposed a framework for assessing well-bring, however this focuses on journey experience not equity. More research is therefore required.

2.7 Optimum Social Equity Goal Creation

Lucas *et al* (2019) created a framework for improving social equity in the transport sector which focuses on the need to assess the current distribution and understand existing equity issues (Preston and Raje 2007; Banister 1994; Lucas 2012). The framework is caveated with the idea that each policy 'will require a different form of measurement and metric to determine equity' (Lucas *et al* 2019:5) which is commensurate with the literature review findings. This framework has been adapted to include the role of transport strategies in improving social equity objectives and presents an optimum situation for goal creation based on the reviewed literature.

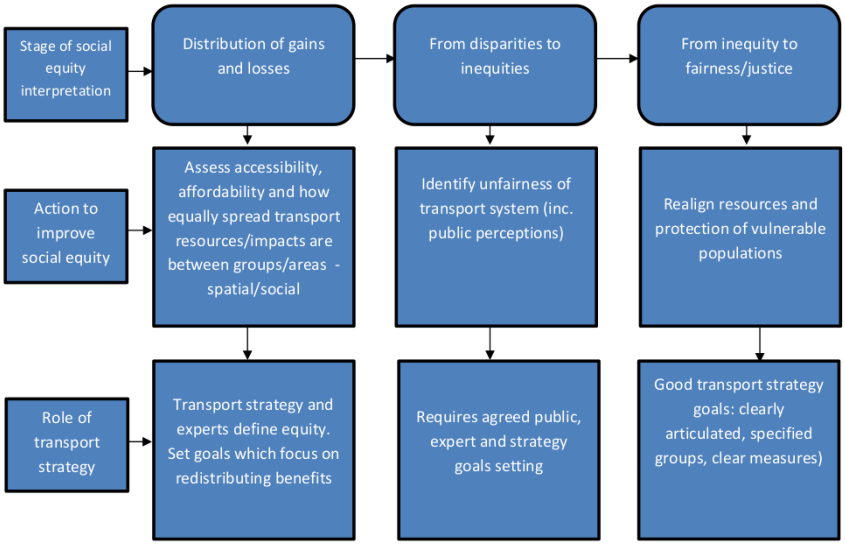

Figure 2: Social equity and transport strategies (adapted from Lucas *et al* 2019)

2.8 Summary

This chapter has identified social equity as a vital part of social sustainability and evidenced that social equity does not have a universally accepted definition. Accessibility, affordability and impacts on population sub-groups have been identified as the main equity concerns and whilst frameworks have been created to measure social equity, there is no one definitive assessment tool. There is also a lack of research on UK transport plans and how social equity objectives are successfully incorporated to meet population needs. This research aims to address these gaps.

3. Methodology

This chapter details and justifies the case studies and sets out the strategy assessment, interview and survey processes and research ethics.

3.1 Case Studies

Oxford Overview

Oxfordshire has a two-tier council system consisting of OCC and five district councils. OCC created the OTS which is an area strategy under the Countywide LTP4 and is based off OCC corporate objectives. Whilst the OTS it is a standalone document, it is governed by the corporate objectives decided on by the Conservative-Independent alliance which lead the council.

Most of the public transport in Oxford is privately run and OCC receives little central government funding. However, OCC has recently agreed to build 100,000 new homes by 2031, in return for government funding of up to £215m for services and infrastructure (Gov 2018b). This shows that the county is expanding, and growth is shown to result in equity challenges (Verhoef *et al* 2001).

London Overview

London's governance structure comprises of the City of London and GLA which comprises of the Mayor and Assembly (London Councils 2019) in addition to 32 London boroughs. London has a more complex governance system to Oxford and TfL is the local governmental body in control of most of London's transport services and was the organisation which helped create the MTS (TfL 2019). Labour Mayor, Sadiq Kahn, set out his transport vision in the MTS and TfL are now responsible for implementing the MTS in conjunction with the boroughs. London therefore has a large workforce focusing on the transport strategy which makes it a unique case study.

The Draft London Plan has identified that London must provide 66,000 additional homes annually for the foreseeable future (GLA 2017). Therefore, London is also expanding. The Mayor has a capital spend of £12.309b from 2018-2023 for TfL and this funding reflects London's future needs as set out in the MTS (GLA 2019). London therefore has considerable funding and is growing: how these factors have been integrated into the MTS presents an interesting case study.

London and Oxford

Oxford and London are two of the least affordable UK cities (Lloyds Bank 2019) and have a commitment to provide many houses. This research therefore explores two expensive, expanding cities. The differing political parties and governance structures also provide the opportunity to explore whether different political parties have a different approach to transport strategy creation and social objectives.

3.2 Transport Strategy Analysis

To address the first research objective, a 'constant comparison analysis' (Leech and Onwuegbuzie 2007) of the MTS and OTS was undertaken. The analysis consisted of codes identified from the literature being searched within the strategies in addition to codes becoming apparent throughout the analysis. The codes included: accessible/ all users/to all/for everyone/affordable/basic needs/equal/equity. Reference to groups were also highlighted, as promoted by Di Ciommo and Shiftan (2017).

Coding is suitable for the study as it allowed identification of themes (Leech and Onwuegbuzie 2007) and was adopted to assess how social equity was included within MTS policies and OTS objectives. The OTS only has objectives, not policies or proposals, and MTS has policies and proposals, with policies assessed because they aim to 'promote and encourage safe, integrated efficient and economic transport facilities and services' (GLA 1999) whereas proposals secure the facilities/services to implement policies (Inderwildi and King 2012).

A 'keyword in context' analysis (Leech and Onweugbuzie 2007) then occurred to determine how social objectives compared to environmental and economic goals. This content analysis was used to assess the words used in each policy/objective and associate them with the appropriate sustainability pillar. Word choice is often an issue in strategy assessments (Manaugh *et al* 2015) however themes from sustainable transport literature were used (Hickman *et al* 2017) as well as themes from the strategies. Chosen words included: climate change/emissions/for everyone/business/economy. Finally, an assessment of whether measurement tools were referenced was undertaken.

3.3 Interviews

The information gained from the strategy analysis informed the interview questions. Five semi-structured interviews were undertaken, three with TfL employees and two with OCC employees. One interview was conducted with two OCC employees simultaneously ensuring six experts were interviewed. Each interview lasted between 40 minutes and an hour and four interviews were

undertaken at council offices and one on the phone. For recruitment, personal contacts within Local Government provided introductions to those who worked on the MTS/OTS. A snowball sample of people therefore occurred (Valentine 1997) and all interviewees had the necessary professional background.

Semi-structured interviews allowed the interviews to be 'conversations with a purpose' (Eyles 1988), with flexibility to discuss certain elements in more detail and provide insight into decision-making processes (Valentine 1997). This project demanded qualitative research because it explored decisions and social aspects of transport strategies (Winchester 2005: 5).

3.4 Surveys

To address the third research objective, a web-based survey with members of the public in Oxford and London was conducted to gain views on social equity and transport. The results of the interviews informed the survey questions and the survey aimed to understand if there was consistency between professional and public views of social equity and whether the OTS/MTS meets the public's needs. A survey was relevant as there was a need to understand the public's viewpoint (Tanur 1982).

The five-minute surveys were distributed across social media to try to gain a representative sample. However, the actual sample over-represented those aged 18- 30 (ONS 2011), potentially because distribution was solely online. Over the two weeks the surveys were open, 97 responses were gathered. Tables 2 and 3 show the demographic information.

Table 2: London participant information

Participants	Number
Gender	
Female	23
Male	27
Prefer not to say	1
Age	
18 – 24	16
25 – 29	17
30 –39	8
40 – 49	1
50 – 59	6
60 +	3
Total Participants	51

Table 3: Oxford participant information

Participants	Number
Gender	
Female	20
Male	25
Prefer not to say	1
Age	
18 – 24	19
25 – 29	10
30 –39	9
40 – 49	3
50 – 59	5
60 +	0
Total Participants	46

The questions were predominately closed, which made the survey accessible and quick to undertake (Arnon and Reichel 2009). The survey included a couple of optional open-ended questions and this allowed participants to expand their answers and express opinions. The survey results were then shared with experts to gain their views. Figure 3 shows the methodology chain:

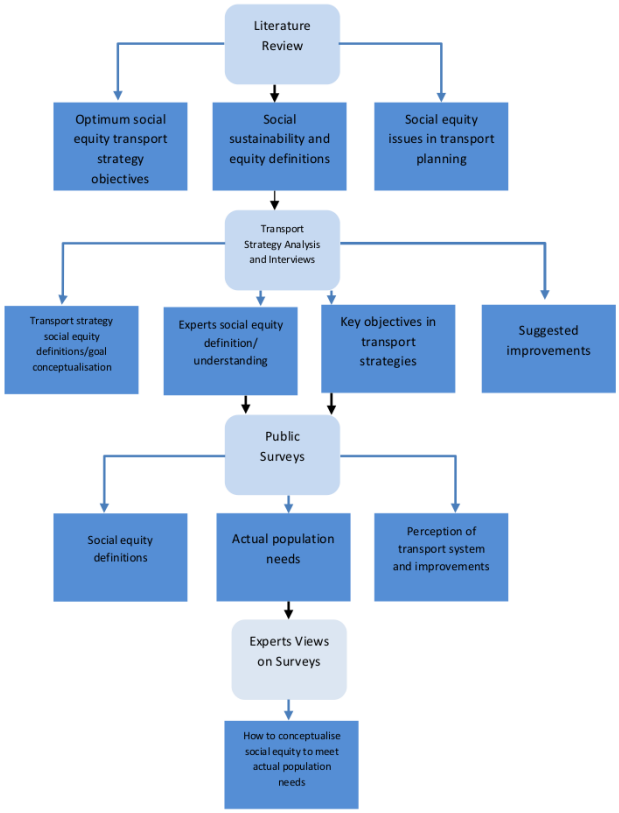

Figure 3: Methodology chain

3.6 Analysis

After gaining permission, all interviews were recorded and transcribed. Atlas/ti was used to code the data into etic and emic codes (Punch 2005) which provided the chance to identify links and patterns (Kitchen and Tate 1999). For the surveys, statistical analysis was undertaken in Excel and SPSS to identify trends and correlations.

3.5 Research Ethics

An information sheet, which stated the scope and purpose of the research, and a consent form were given to each participant before each interview. Both the interviews and surveys were voluntary, and the first page of the survey included information on its purpose and assurance that the data was solely for research. All survey and interview participants were anonymous.

4. Strategy and Expert Analysis

This chapter entails the results of the strategy analysis and interviews, through description, analysis and discussion, to address research objectives 1 and 2.

The following academic definition has been assessed against expert interviews and strategies: *the principle that each citizen, regardless of economic resources or personal traits, deserves and has a right to benefit from the provision of transport to meet their basic needs*

4.1 Key Objectives

Table 4: Transport strategy key objectives

Strategy	Key Objective
OTS	'The overarching aim of the transport strategy will be to ensure no further growth in traffic… the majority of travel around the city will need to take place by walking, cycling and public transport' (OCC 2017: 1).
MTS	'Aim for 80% of all trips in London to be made on foot, by cycle or using public transport by 2041' (TfL 2016).

Both strategies aim to increase the use of active travel modes and public transport. This is a similarity between the strategies and follows research on the necessity for a modal shift towards sustainable transport modes (Hickman *et al* 2017). However, all experts admitted that inclusivity is an issue for active travel modes. Not everyone is physically able to walk or cycle and people have competing needs from the street layout, as TfL expert 3 stated *'a blind person may appreciate a kerb whereas a person on a wheelchair would prefer something flat*'. This issue has had recent policy implications, notably the governments pause on shared space roads (Gov 2019).

Furthermore, TfL expert 1 does not believe that cycling is inclusive, stating that *'it is not really suitable for older or younger people, I think for various reasons women are really put off cycling. It is good that we have got more infrastructure in place but I think this infrastructure then has encouraged bad behaviour*'.

Public transport was also acknowledged as having equity issues. The high cost of public transport was raised by OCC expert 2 and TfL expert 2 and the issue of still having to travel to reach a bus stop/station was highlighted by OCC expert 3. The question then arises as to whether the main aims of the

strategies should be focusing on transport modes which are, by the definition of experts, not totally inclusive. OCC expert 3 argued that there is no one inclusive transport mode:

'there is no fully inclusive transport mode and that is why transport systems are just that, made up of lots of different modes and you can have an inclusive transport system…it would have to be made up of different options for people'

Looking at transport as a system links to Goldman and Gorham (2006) study and may provide a more equitable city. This research suggests that this should be considered by experts when deciding on the main aim of a transport strategy.

4.2 Definitions of Social Equity in the MTS and OTS

Neither of the strategies include a definition of social equity. All experts also confirmed that there was no definition of social equity at either strategy creation stage. This finding is commensurate with Hay and Trinder (1991) and Guy and McCandless's (2012) research. Despite Guy and McCandless's proposition that social equity concerns fall naturally in the remit of local government, TfL nor OCC have adopted this term and given it the weight academics believe they should.

Consequently, each expert was asked to provide a social equity definition and the responses are included in Appendix 1. Three main themes have been identified: **opportunities**, access for **groups** and access to/from **areas**.

The idea of opportunities was the most prominent theme in the definitions. This is in line with Norman- Major's (2011) definition and identified by RESCUE (2005) and Littig and Greißler (2005) in social sustainability understanding. All experts highlighted the importance for all people to have access to opportunities. This was therefore deemed an important aspect of social equity and one that must be included in strategies. The term 'opportunities' is broad, for RESCUE (2005) it relates to access to information, benefits and resources, whereas Littig and Grießler (2005) prioritise access to education, but it may be beneficial to allow each council to establish one common social equity theme which can be adapted to each city.

Two expert definitions referred to the need for different groups of people to be considered and prioritised when thinking about equity. This links to Preston and Raje (2007) and Banister's (1994) research. All experts stated that the strategies aimed to create an inclusive transport network and reference was made to different groups of people having different transport needs. However, the experts also recognised that it was difficult to create a strategy which included the specific needs of all the diverse members of society. In relation to London, TfL Expert 2 explained:

'There are millions of people here, all from sort of different backgrounds and with different needs and everything else and I think it's trying to make sure that the decisions we are making on transport don't exclude any of those people'

The third theme was access to/from all areas. TfL experts 1 and 2 identified different transport needs for those living in the inner city compared to those in outer London, highlighting a need to consider transport equity spatially. This topic was discussed in detail with OCC expert 1 who did not provide a definition of social equity because the phrase was not used. OCC expert 1 explained how the development of the new LTP was underway with the aim to add the word 'connectivity' to its title, renaming it 'Local Transport and Connectivity Plan.' This would integrate connectivity even further into the plan which the OTS sits under. Furthermore, all OCC transport policy documents form part of 'Connecting Oxfordshire' and OCC expert 1 argued that:

'if I reversed engineered that stuff [social equity/social sustainability], it would come up with stuff like connectivity and equity of connectivity'

OCC expert 1 made no distinction between social sustainability and social equity. This contrasts to the literature review which showed social equity to be an aspect of social sustainability (RESCUE 2005; Litting and Grießler 2005). Additionally, the word connectivity is not a prominent theme in academic definitions of social equity whereas three experts referred to connectivity and a desire to focus on areas rather than groups in their definitions. This links to the idea of spatial equity (Hay 1995) and indicates that spatial equity is acknowledged by experts when exploring social equity and transport.

OCC experts 2 and 3 highlighted the need to focus on both groups and areas. This analysis has revealed that this would be the optimum starting point for a socially equitable transport strategy. There is no significant difference between the definitions provided from those working at TfL and OCC. This is in line with Hay and Trinder's (1991) research which found little major disagreement between those working under different governmental parties.

4.3 Conceptualisation and Prioritisation of Social Equity Goals

The MTS and OTS offer two different approaches to objectives. The MTS includes 108 proposals, which are broad aims, and 26 policies, which are more specific targets, whereas the OTS includes eight objectives. These different approaches have resulted in different conceptualisations of social equity goals. However, the prioritisation of social goals compared to economic and environmental goals are similar in both strategies.

OTS

The OTS does not include any specific targets. It includes four goals, eight challenges and eight objectives. The strategy analysis showed two social equity related objectives:

Table 5: OTS Social Equity Objectives (OCC 2015)

LTP4 Goal	OTS Challenge	OTS Objective
To support social inclusion and equality of opportunity	Oxford is a tale of two cities	Provide a fully accessible transport network which meets the needs of all users
To protect and, where possible, enhance Oxfordshire's environment and improve quality of life	We need to better balance different needs in the city centre	Provide an accessible city centre which offers a world class visitor experience

OCC expert 2 further expanded on the challenge of Oxford being a 'tale of two cities' and stated that there is a divide between those in and out of the university sector. Additionally, there are wealth and social inequalities, with a high level of contrasting needs in the city centre. These are social equity concerns (Mananugh *et al* 2015). However, the challenges have just one objective and no associated targets. When questioned as to why the strategy has no targets, OCC expert 2 stated that historically strategies had targets but they were unsuccessful. OCC expert 2 argued that it is better to have specific targets at scheme level as there is a better idea about what is going to be achieved:

'The experience in the early 2000s was that you can have a list of targets as long as you like but if there is not the right intelligence to sit behind them then they don't end up being that helpful'

Therefore, the decision to only include broad objectives and set a vision for the city was intentional and followed experience. The reason for this, as highlighted by OCC expert 1 and 2, is that the council has no funding, limited resources and little time to conduct in-depth studies to inform social equity targets. Whist this decision was justified, it goes against Handy's (2008) framework which argues that objectives and measures must be precise to be effective.

MTS

The MTS has 26 policies and social aims can be seen in many of the policies. As TfL expert 1 explained *'we always use the term 'for all Londoners' so that is quite an inclusive way of talking.'* The term 'for all Londoners' is inclusive and can be argued that any policy which references 'all Londoners' is aiming to be socially inclusive and equitable. Furthermore, TfL Expert 2 stated: *'the whole thing has social equity as an underpinning theme and an ultimate goal... that is certainly the theme of this mayority.'* As the Mayor is pushing the theme of social equality, the environment in which the MTS was created was portrayed to be people-centric. This is reflected in the MTS, with the opening chapter recognising the city's diversity and the need to connect communities. Table 6 shows the social equity policies:

Table 6: MTS Social Equity Policies (GLA 2018)

Policy
2: The Mayor, through TfL and the boroughs, and working with stakeholders, will seek to make London a city where people choose to walk and cycle more often by improving street environments, making it easier for everyone to get around on foot and by cycle, and promoting the benefits of active travel
12: The Mayor will ensure public transport fare levels are set to enable access to affordable travel for all Londoners
14: The Mayor, through TfL and the boroughs, and working with stakeholders, will seek to enhance London's streets and public transport network to enable disabled and older people to more easily travel spontaneously and independently, making the transport system navigable and accessible to all and reducing the additional journey time that disabled and older users can experience.
15: The Mayor, through TfL and the boroughs, and working with stakeholders, will transform the quality of bus services so that they offer faster, more reliable, accessible, comfortable and convenient travel by public transport, while being integrated with, and complementing, the rail and Tube networks
16: The Mayor, through TfL and the boroughs, and working with stakeholders, will seek to transform London's rail-based services to provide safer, modern, reliable, integrated, accessible and user-friendly services, with improved journey times and an increase in capacity
23: The Mayor, through TfL, will explore, influence and manage new transport services in London so that they support the Healthy Streets Approach, guided by the following principles: c) Opening travel to all: new services should be accessible to all Londoners and should not contribute to the creation of social, economic or digital divides in which some Londoners would have better travel options than others

The MTS policies are clearly articulated, relate to multiple dimensions of equity and specify the groups each policy is targeted at. This follows Manaugh *et al's* (2015) definition of 'good' social equity objectives. Therefore, the conceptualisation of the MTS social equity policies are much more explicit, precise and in line with the literature than the OTS objectives. The environment in which the MTS was created, with the Mayor spearheading the strategy, is understood to have supported this policy development.

Economic, Environmental and Social Goal Prioritisation

Academic and professional definitions of social equity are broad and ambiguous which makes categorisation of objectives/policies into one sustainability pillar difficult. All experts and reviewed literature acknowledged that overlap occurs between environmental, economic and social aims, with many objectives/policies fitting into multiple pillars. This concurred with the findings of the strategy analysis. Goal prioritisation was difficult because many policies/objectives were broad and unspecific, resulting in the predominant policy/objective aim being unclear. This is highlighted by MTS Policy 6 which relates to tackling congestion which would have environmental, economic and social benefits (Hickman *et al* 2017). This indicates that prioritisation is subjective, and it was important to gain expert views on goal prioritisation. Table 7 shows the results.

Table 7: Goal Prioritisation

Expert	**Sustainability Pillar(s) Most Prioritised**
TfL Expert 1	Environmental and Economic
TfL Expert 2	Environmental and Social
TfL Expert 3	Environmental and Economic
OCC Expert 1	Environmental and Economic
OCC Expert 2	Environmental, Economic and Social
OCC Expert 3	Environmental

Table 7 identifies that social objectives are least prioritised in line with Manaugh *et al* (2015). The experts cited the political climate as the reason for the goal prioritisation; there is pressure to keep UK cities economically competitive (the UK dropped two places in the most recent Global Competitiveness Report (WEF 2018)) and the environment is one of the UK's highest polling issues (YouGov 2019). Due to the political nature of strategy creation, the politically relevant topics are reflected in the strategies.

All experts stated that social aims are included in the strategies, but not always explicitly highlighted within the objectives/policies. OCC expert 1 recognised this shortcoming and stated that the new LTP, which will provide the objectives for the future OTS, will hopefully include a corporate objective which states '*improved accessibility for Oxfordshire's population.*' This indicates that experts believe greater prioritisation of social goals is required.

4.4 Measurement of Social Equity Goals

Neither the OTS or MTS provide measurement tools to assess the success of the social policies/objectives. Due to the OTS not having any specific targets, there was nothing to be quantified and the lack of measurement tools was not unique to the social objectives. OCC expert 1 expressed frustration with the lack of baseline surveys in Oxfordshire and stated there was a lack of resources to conduct the research required to enable any targets to be meaningfully set and measured. This highlights the lack of resources as the predominant reason for the absence of measurement tools.

In relation to London, TfL expert 2 referred to the Travel in London reports which summarise the transport trends in London and details progress towards the MTS. Whilst this provides an indication of mode share splits and the spatial distribution of change, it does not focus on specific policies. TfL expert 3 referred to the London Travel Demand surveys which collects household trip rate information, but again this does not focus on specific policies. This illustrates that a lot more work must be undertaken to measure the effectiveness of strategy aims and unanimously all experts agreed that there was a need for better measurement tools. This was the case in Manugh *et al's* (2015) research and does not contradict Dale and Newman's (2009) or Lucas's (2012) findings.

4.5 Strategy Comparison

Throughout this analysis, similarities and differences between the two strategies have become apparent:

Similarities:	Differences:
- Key objective	- Conceptualisation of social equity goals
- No measurement tools	- Plan creation process
- No social equity definition	
- Goal prioritisation	

Most of the analysis discussion points, which were based off the literature, showed similarities between the MTS and OTS. Similar definitions of social equity and goal prioritisation assessments were provided by all experts. Fundamental research gaps in the literature, including social equity definitions

and measurement tools were also shown to be missing in both strategies. This research has therefore confirmed that academics must work with local authorities to improve social equity understanding.

The main difference between the strategies was the conceptualisation of social equity goals. Social equity aims were more explicit in the MTS and the difference in the plan creation process may be a key reason. The MTS is focused around the Mayors initiatives and the MTS Mayor's forward states:

*'Transport is a cornerstone of my vision for a **fairer**, greener, healthier and more prosperous city…it can **create new opportunities for Londoners** and shape the character of our city' (GLA 2018: 7)*

This shows commitment to creating a city 'for all Londoners' and this vision was disseminated to the policies. Contrastingly, the OTS was based on relatively outdated OCC corporate goals. Discussion with OCC experts indicated that there will be changes to the corporate goals and a new LTP is in development which will have a more explicit focus on social equity. The lack of funding for local authorities was also a common theme in the OCC interviews and this was another reason for prioritising growth within the strategy. As OCC expert 1 explains:

'the only way you get any money from central government is if you agree to build lots of houses'

4.6 Summary

This analysis has evidenced that the term social equity is not used in transport strategies. Despite both strategies and all experts making it clear that social issues are important, these views are not translated into clear, measurable, specific objectives in the OTS. Furthermore, appropriate assessment measures were lacking in both strategies and experts believed both strategies have a stronger focus on the environment and economy, rather than social equity.

5. Survey Analysis

This chapter will describe and analyse the survey results to understand the public's perception of social equity and transport in London and Oxford. It will address research objective 3.

5.1 Definitions of Social Equity

53% of London and 35% of Oxford respondents knew the term social equity. This evidences that social equity is not commonly used outside academia as only 44% of all participants had heard the term.

Out of the 48 respondents who had heard of the term, 38 provided social equity definitions in relation to transport. Appendix 2 includes the definition list but overriding themes were 'access', used in 24 definitions, 'equality/equal', used in 14 definitions and 'opportunities', used in seven definitions. This indicates the baseline of some of the public's definitions ('equal access') and the expert definitions were relatively similar.

However, one participant defined social equity as '*transportational socialism'* and one participant's definition was '*earnings linked charges (e.g the more you earn the more you pay).*' These themes were not predominant in the literature or expert interviews and indicate that some members of the public have a cynical social equity understanding. Consequently, the surveys also showed that social equity is a subjective and complex term which can be interpreted in different ways, in line with Hay and Trinder (1991).

5.2 Travel Patterns and Satisfaction

<u>London</u>

The key aim of the MTS is to increase the uptake of sustainable travel modes. The results of the survey showed that public transport was the predominant transport mode in London, with 42% of respondents in the suburbs/outer city using the train and 59% of people in the inner city using the underground. This indicates that, whilst ambitious, the MTS is not out of line with the publics current transport modes.

There was no correlation between gender, age, income levels or ethnicity and transport modes. This may be due to the sample size. Nevertheless, improvements to the transport system to increase accessibility to desirable places (family, friends, work and places of study) were requested by all participant groups. A high percentage of participants identified a need for improved walking/cycling links to work/place of study and family/friends (Figures 4 and 5). This suggests that accessibility issues

are apparent, and the MTS should prioritise improvements to walking/cycling routes to prevent social isolation and improve access opportunities.

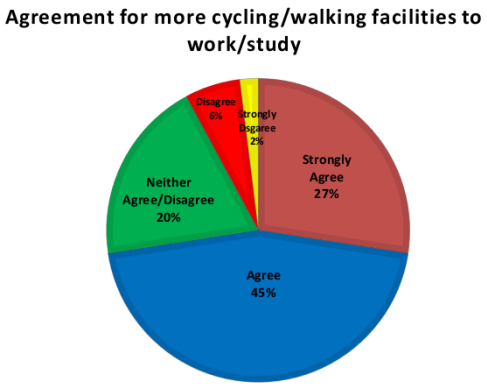

Figure 4: Survey Reponses: improved accessibility to work/study

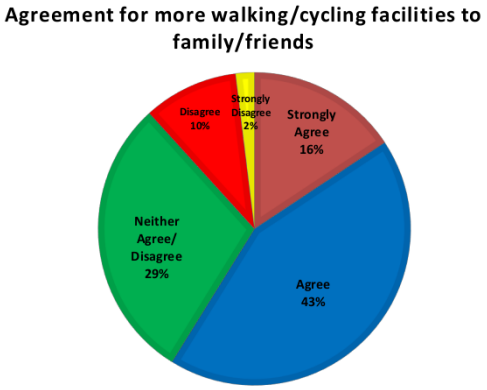

Figure 5: Survey Reponses: improved accessibility to family/friends

Table 8 shows public dissatisfaction in many transport areas. Common improvements related to reliability, frequency and the cost of trains/underground and safer and improved cycling infrastructure. MTS policies 2, 12, and 16 identified in Table 6 aim to address these concerns, indicating that the MTS is representative of the needs of the public. Therefore the MTS has relatively accurately prepared for the public's needs, however priority should be on providing more walking/cycle links to desirable areas.

Table 8: Publics improvement suggestions

IMPROVEMENT AREA	NUMBER OF RESPONDENTS
Cycling	III
Trains	~~𝍸 𝍸~~ II
Underground	III
Cars	I
Buses	~~𝍸~~
Green space	I
Cost	IIII
Walking	I
General public transport	IIII

Oxford

The OTS identifies that Oxford is a 'tale of two cities'. The survey results confirmed the divide between those in/out of the university sector. There are professionals at the universities, however due to the survey sample, this research has focused on the difference between students and workers.

All surveyed university students were between 18 – 25 and lived in the inner city. The predominant mode of transport was active travel modes, with 71% of students walking and 24% of students cycling. There are many reasons for this high active travel mode share; the awareness of the younger generation of the positive health and environmental benefits, the cheapness (Hickman *et al* 2017; OCC expert 1) or the proximity of university buildings (survey respondent 7).

This differed to those working as 61% of the working population drove. The least used mode of transport for this group was cycling which is a significant difference to the student group.

The university divide may enhance the differences between those living in the inner city and the outer city/suburbs. Figures 6 and 7 show that those in the inner city predominantly walk whereas those in the outer city/suburbs predominantly drive.

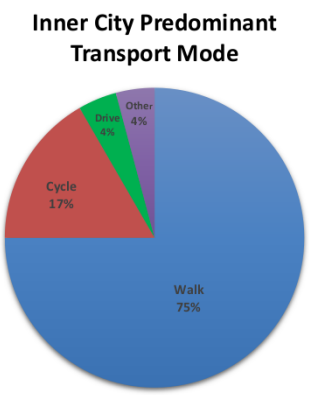

Figure 6: Survey results: inner city modes

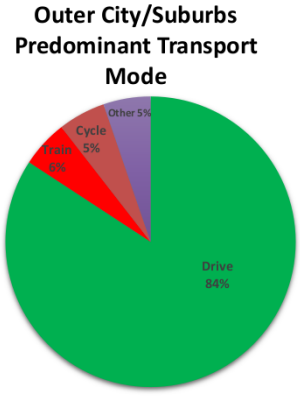

Figure 7: Survey results: outer city/suburb modes

Chi-square tests were undertaken to establish the relationship between age groups/active travel modes and areas of the city/active travel modes. The first chi-squared assessed the significance between those aged 18-29 and those 29-60+ and active travel modes. Based on the results of the chi-square test (χ^2 (1, N=45) = 6.95; p<0.01), there is a statistically significant relationship between age and active travel modes, with the younger generation using active travel modes more than those who are older (see Appendix 9).

Even greater significance was shown from the chi-square test which assessed the relationship between area of the city (inner city vs outer city/suburbs) and active travel modes. Based on the results of the chi-square test: (χ^2 (1, N=44) = 26.65; p<0.01), there is a statistically significant relationship between area of residence and active travel modes, with those in the inner city using active travel modes considerably more than those in the outer city/suburbs (see Appendix 10).

These findings suggest that the OTS should prioritise improvements to active travel modes in the outer city/suburbs and focus on improving walking/cycling accessibility to those 30+.

Furthermore, the percentage of people living in the outer city/suburbs who strongly agreed/agreed for the need for more public transport or active travel links to desirable places varied between 65% and 80%. This contrasts to those in the inner city who were more satisfied with their access opportunities and the percentages varied from 19% to 54%. This suggests an inequity in transport provision between areas. The spatial difference was the most predominant theme to emerge from the surveys, with little correlation between gender or ethnicity and transport modes.

All respondents' suggested improvements to Oxford's transport network referenced improvements to cycle lanes, buses and reducing congestion. These are all aims of the OTS and supported by sustainable travel literature (Hickman *et al* 2017). This shows consistency between the publics, OCC's and academic desires.

The survey results confirm that the OTS has correctly identified the divide between those in/out of the university sector but a further target should be to enhance sustainable travel modes in the outer city/suburbs to improve accessibility. This relates to spatial equity, as highlighted by OCC expert 1 and Tsou *et al's* (2005).

5.3 Expert Views on Surveys

The results of the surveys were shared with the OCC and TfL experts. None of the experts who provided responses were surprised by the survey results.

TfL experts cited the main reasons for not implementing schemes/enhancing accessibility to be money and time. The OCC experts highlighted how the OTS references improvements to the transport in the outer city (Eastern Arc) and schemes, including the 'Access to Headington', project have begun. This highlights that experts are aware of the social problems and OCC have schemes in place to address the needs of the public. This is commensurate with the findings of the interviews; experts are aware of the issues but they are not translated into objectives.

6. Social Equity Goal Improvements

This chapter takes the strategy, surveys and interview analysis and suggests how social equity goals could be improved.

6.1 Explicit Reference

Unanimously, all experts agreed that social equity objectives should be presented more explicitly.

TfL expert 3 suggested that the MTS could have a 'focus on' box on social equity to highlight its importance. This would explicitly reference social equity, however is insufficient in isolation and more work would need to be undertaken to create measurable, effective policies, as highlighted by Manaugh *et al* (2015) and Colantonio (2009).

6.2 Social Equity Strategy

Building on the idea of more explicit goals, TfL expert 2 stated:

'whilst I think the delivery of the MTS and its expected outcomes/ goals will improve social equity in London, it would be interesting to look maybe at what that actually means in a more explicit way… so you come up with a defined set of goals'

TfL expert 2 proposed a 'social equity strategy' which the MTS and other London documents feed into. It would be separate to the MTS but transport would play an important role. It would define what it means for a city to be more socially equal and have measures set against these aims. If a team of professionals from a range of sectors, such as public health, transport and housing, work together, this may provide a framework for a solid social equity definition with appropriate measurement tools.

Regarding measurement, TfL expert 2 suggested recording people's attitudes of a street before and after interventions to see if specific actions encourage social interaction and reduce social isolation. Additionally, following the results of the surveys, focus groups between authorities and members of the public may also be beneficial to open a dialogue about the need for more walking and cycling facilities to reach friends/family. Consequently, a 'social equity strategy' would follow principles in the literature (Goldman and Gorham 2006) and offers a potential solution to create an equitable society.

6.3 Mobility as a Service (MaaS)

In relation to Oxford, OCC expert 1 explained:

'I think we are still a bit mode based… So if we could talk of MaaS we would get much closer to a sense of social equity in our transport plan. It would be a much more explicit concept of social equity'

OCC expert 1's re-conceptualisation of social equity revolves around the idea of transport as a system (Goldman and Gorham 2006) and MaaS (Jittrapirom *et al* 2017). MaaS is the incorporation of multiple 'transport services into a single mobility service accessible on demand' (Mass Alliance 2019:1) which aims to converge all transport modes. It would allow people to use a single technology application to pay and plan for all transport modes. OCC expert 1 believes that this would make Oxford's transport system more socially equitable and ensure everyone can get around how they wish. This has been done in Helsinki with proven public convenience and accessibility benefits (Goodall *et al* 2017). MaaS is supported by the survey findings which showed disparities between transport modes in the inner/outer city: there is a need to connect the existing services. MaaS could be incorporated in the transport strategy by having an objective relating to the need for MaaS in relation to social equity.

6.4 Summary

All experts believed that social equity must be more explicitly referenced in strategies. The idea of a 'social equity strategy' and considering MaaS are two proposed improvement measures which require further investigation. However, there is still an absence of proposals to improve measurement tools associated with social equity and no single definition has emerged. This research suggests a need to re-conceptualise the existing objectives by looking at the larger social systems in which transport is embedded in. Once this re-conceptualisation has been undertaken, new measures may emerge.

7. Conclusion

This research aimed to investigate how social equity is understood in the OTS and MTS. The strategies were assessed against academic understandings of social equity and the results used as a framework for discussion with transport professionals involved in the strategy creation. Surveys were then undertaken with the London and Oxford public to understand their perception of social equity and each city's needs. The survey results were shared with experts to further the research. Empirical results were collected on social equity understanding, conceptualisation of social equity goals and the public's transport needs. The results have been used to answer the objective set in Chapter 1.

7.1 Research Objectives

1. To understand how social equity is conceptualised, measured and prioritised in London and Oxford's transport strategy plans;

Social equity was not defined in either transport strategy, commensurate with Guy and McCandless (2012). However, both strategies identified inequalities and highlighted objectives/policies which addressed issues raised by academics. The OTS's social equity goal conceptualisation is argued to be weak compared to the literature as it includes two social equity related objectives which are not accompanied by targets. Contrastingly, the MTS has six specific policies which relate to social equity. In line with Manaugh *et al (*2015), these policies are clearly articulated, relate to multiple dimensions of equity and specify the groups each policy is targeted at.

The absence of assessment tools was a similarity between the strategies. This highlights the abstract and multi-dimensional nature of social equity goals (Dale and Newman 2009; Lucas 2005). Furthermore, goal prioritisation was difficult in both strategies due to objectives/policies relating to multiple sustainability pillars and the analysis did not show the overriding priority of any pillar.

2. To understand expert opinions on how social equity is defined in different plans;

All experts acknowledged that there was no overriding definition of social equity during the MTS/OTS creation period. There was also unanimous agreement for a more explicit emphasis on social equity. The expert's definitions on social equity had the common theme of 'access to opportunities' in line with the literature (RESCUE 2005; Colantonio 2009). However, the definitions contrasted between focusing on groups and focusing on areas. Spatial equity was a theme which arose from the expert interviews and may bridge the gap between the professional and academic worlds.

In relation to the conceptualisation of social equity goals, OCC experts justified the use of vague objectives and cited a lack of resources to create target based social equity objectives. Whilst the inclusion of broad objectives contradicts the literature (Mananugh *et al* 2015), the reasons for the decision was not due to lack of awareness.

TfL experts spoke highly of the Mayors transport vision which set the tone of the MTS and the strong social vision influenced the policy development. This research has therefore identified that the governance structure/funding of each organisation effected the conceptualisation of social equity goals.

All experts believed there was overlap between social, environmental and economic objectives/policies. However, unlike the strategy analysis, economic and environmental goals were acknowledged to be more prominent in both strategies and experts cited the political climate as the reason for this. This highlights the subjective nature of the policies/objectives and emphasises the need for targets associated with each policy/objective to ensure the main aims are being met.

3. To explore whether the way social equity is presented in each plan is representative of the needs of the public.

Over half of the surveyed public had not heard the term social equity, which further indicates that this term is confined to the academic world and emphasises the need for a better definition or different term.

Both strategies had the same overriding aim of increasing active travel and public transport modes and the Oxford survey results showed a disparity between the young students living in the inner city using active travel modes and the older professionals living in the outer city predominantly driving. The OTS identifies that Oxford is a 'tale of two cities' and is therefore aware of the challenge but more emphasis to reduce this gap is required.

Both surveys resulted in participants stating that they require improvements to walking and cycling facilities to access desirable areas. This was particularly apparent in London and despite the strategy including relevant policies, the survey results highlighted a need for a greater focus on accessibility.

Almost all the identified problems by the public were acknowledged in the strategies. However, they were not always stated as policies/objectives reinforcing the need for more robust policies/objectives. The experts were not surprised with the survey findings and appreciate the need for improved services; however, lack of resources prevents both authorities from providing all that is required.

7.2 Limitations and Future Research

Only 97 survey responses were received due to time constraints and the sample had a high proportion of those aged 18-30. The surveys were solely distributed on social media and a variety of distribution methods may have provided a better sample. Nonetheless, all participants were valuable and vital to the studies success. Additionally, many topics discussed during the interviews and surveys could not be elaborated on due to word constraints. Most notably social isolation and gentrification could have been two additional research topics.

Directions for future research have arisen. Research should be undertaken to explore the possibility of the term spatial equity bridging the gap between academics and professionals as social equity is not currently used by professionals.

This research could also be expanded to more UK transport strategies. This research identified that the governance structure of each organisation affected the conceptualisation of social equity policies assessment could be undertaken to explore whether this is a nationwide pattern.

Research into how MaaS could improve the equity of the transport system could be undertaken. An assessment as to how this would affect accessibility compared to the existing situation may be insightful. This would link academic work on social equity with MaaS literature, creating a new area of academia.

7.3 Policy Suggestions

This research has highlighted the need for social equity to be more explicitly acknowledged and referenced in transport strategies; professionals and academics should work together to improve the inclusion of social equity in transport strategies.

Additionally, there is a need for a 'social equity strategy.' This would be created by experts from a range of sectors and sit alongside existing policy documents. London would be a suitable city to initiate a 'social equity strategy' due to its governance structure. This would be a meaningful document which could improve the transparency and measurement of urban social transport issues, with the aim to further reduce transport inequalities.

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Appendix

Appendix 1: Expert Social Equity Definitions

Expert	Social Equity Definition
TfL Expert 1	*'being able to access opportunities to jobs, healthcare, education, about fair pricing, about a system that reaches all parts of the city in a similar way so you don't have some areas of the city which are really accessible and some that aren't…it is about fairness to access of opportunity, pricing and general connectivity across the city.'*
TfL Expert 2	*'looking at the opportunities that transport can offer in terms of connecting people more to the city around them, opening up access to jobs and services… also the role transport can play in connecting people to the other opportunities available to London, like cultural offerings things like that. And also reducing social isolation and loneliness which can be a big issue in a city the size of London'*
TfL Expert 3	*'making sure that particular groups aren't significantly disadvantaged either through their ability to access the things they need through transport, whether it is by walking or other modes, or they aren't disproportionately impacted by transport'*
OCC Expert 1	*No definition provided: ''I guess for us equity depends what we as a council are in charge of delivering… most of the stuff we do with transport is about spatial, so I call it spatial equity'*
OCC Expert 2	*'levelling the playing field…, there are a lot of deprived people I think still living close to jobs and opportunities… it is about making it easier for people in Barton and Blackburn Leys, in simple terms, to also have access to opportunities'*

Appendix 2: Publics Social Equity Definitions

City	Definition
London	No matter what social background you are from, you should be able to travel without any issues/ fret over the cost
London	Making transport "affordable" based on income and expenses rather than "equal" based on same price for everyone
London	Fairness in distribution of transport links - particularly to lower socio-economic areas
London	Equal access to transport, irregardless of the socio-economic make up of an area
London	Making sure everyone has access to affordable and convenient transport regardless of there social background
London	Earnings linked charges (e.g the more you earn the more you pay)
London	Equal access opportunities
London	Access for everyone all the time
London	Ensuring everyone has access to transport suitable to their needs - what could be type of transport, frequency, cost, accessibility
London	Ease and cost of access to transport for all, regardless of means, wealth, race, age and abilities (physical and mental) or any other characteristic
London	People from different geographical areas have access to the same level of transport options
London	All people within a specific society or isolated group would have the same rights and access to transport options as general society.
London	Everyone be able to access what they want
London	Equal accessibility and affordable equally for all users for all purposes
London	Equal transport opportunities for everyone, not discriminating against any particular group of people
London	Accessibility of transport options for isolated groups
London	Social equity is about moving towards equality for all regardless of their social background
London	Equal access opportunities
London	Equal access to all transport regardless of income level

London	Is this not just transportational socialism? Isn't it just that everyone should have the same social rights and access to the same things regardless of social status...
London	Equal opportunities for all people to access all parts of London
London	Giving everyone the same opportunities to use the different methods of transport that are available in a safe environment
London	I perceive it as being unfair - public transport services can be overcrowded at peak times and underground stations can involve much walking in an unfriendly environment
London	Equal access to all places for all people
Oxford	Fair access to all places for everyone
Oxford	Access for all the people in the city
Oxford	Managing transport services to allow equality of access to services irrespective of class, race, disability, gender, or other identity modifier
Oxford	How connected isolated groups of people are
Oxford	People should be fairly treated in terms of availability of access
Oxford	Making sure everyone is equally able to enjoy the same satisfaction levels from whichever transport they choose
Oxford	Ability for all to afford public transport
Oxford	People from all walks of life being able to travel around the city
Oxford	fair treatment of all people in terms of access within Oxford
Oxford	Access opportunities for all
Oxford	All people accessing the shops, employment and social aspects of Oxford
Oxford	People able to easily get everywhere in the city
Oxford	Equal transport opportunities for all

Appendix 3: Interview Questions

1. What is your role at TfL/OCC?

2. What role did you play in the creation of the Transport Strategy?

3. How would you define social sustainability in relation to transport?

4. How would you define social equity in relation to transport?

5. In your view, how do these two terms (social sustainability and social equity) relate to one another?

6. During the creation of the strategy, was there one overriding definition of social equity that you had to work with? If so, what was it?

7. Do you think the OTS/MTS includes social equity goals and targets which encompass the needs of Oxford's/London's population?

8. What specific proposals/ goals included within the OTS/MTS spring to mind when thinking about social equity?

9. Would you say that the proposals/goals in the OTS/MTS are equally spread between social, environmental and economic aims?

10. Is there any possibility for overlap between these three sustainability goals?

11. How would you define inclusivity? Do you think the strategy aims to create an inclusive transport network for all, or are some groups prioritised over others?

12. The strategy focuses heavily on improving active travel modes, would you say that these are inclusive means of travel? If so, why? If not, what do you think is the most inclusive transportation mode?

13. Do you think the strategy has sufficient measurement tools for assessing social equity goals?

14. What is your view on the use of the PTAL (Public Transport Accessibility Level) measurement tool? How much was it used to inform the accessibility policies in the MTS/OTS strategies?

15. Do you think all social equity goals can be quantified?

16. The strategy aims to improve accessibility and reduce social isolation, how would this be best measured in your opinion?

17. In your view, is there a way to better conceptualize, operationalize, prioritize and measure social equity goals?

Appendix 4: Oxford Survey Questions (London survey was similar but 'Oxford' replaced with 'London' and overground/underground added as additional transport mode options)

*1. What is your age?
- 18-24
- 25-29
- 30-39
- 40-49
- 50-59
- 60 or over

*2. What is your gender?
- Male
- Female
- Prefer not to say

*3. What is your occupational status?
- Full-time student
- Part time student, part time worker
- Full time worker
- Part time worker
- Unemployed
- Retired
- Other

4. What is your income level? (Optional)
- Less than £12,000
- £12,000 - £24,999
- £25,000 - £35,999
- £36,000 - £48,999
- £49,000 - £59,999
- £60,000 +

*5. Do you have a disability affecting your mobility?
- Yes
- No
- Prefer not to say

6. What is your ethnicity? (Optional)
- White
- Mixed/multiple ethnic group
- Asian/Asian British
- Black/African/Caribbean/Black British
- Hispanic

- Other (please specify)

*7. In which area of Oxford do you live?
- Inner city
- Outer city
- Suburbs
- Other (please specify)

*8. What is your main mode of daily transport (please choose one)?
- Train
- Bus
- Cycling
- Walking
- Car
- Ride-share (uber, taxis etc)
- Other (please specify)

*9. What is your main motivation for using this mode of transport (please choose one)?
- Convenience
- Price
- Journey time
- Safety
- Comfort
- Environmental reasons
- Exercise
- Other

Any further comments:

10. What is your least used method of transport? (Please choose one)
- Train
- Bus
- Cycling
- Walking
- Car
- Ride-share (uber, taxis etc)
- Other (please specify)

*11. What is your main reason for not using this mode of transport (please choose one)?

- Price
- Journey time
- Safety
- Inconvenience
- Not available in area
- Other

Any further comments:

*12. Do you think that your area would benefit from more public transport links to improve accessibility to work/place of study?

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree

*13. Do you think that your area would benefit from more public transport links to improve accessibility to family/friends?

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree

*14. Do you think that your area would benefit from more cycling and walking facilities to improve accessibility to work/place of study?

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree

*15. Do you think that your area would benefit from more walking and cycling links to improve accessibility to family/friends?

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree

*16. Do you think that public transport is too expensive?

- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly disagree

*17. How satisfied are you with the transport options in your area?

- Extremely satisfied
- Satisfied
- Neither satisfied or dissatisfied
- Dissatisfied
- Extremely dissatisfied

18. If any, what improvements would you like to see made to the transport network in your area?

*19. Have you heard of the concept of 'social equity'?

- Yes
- No

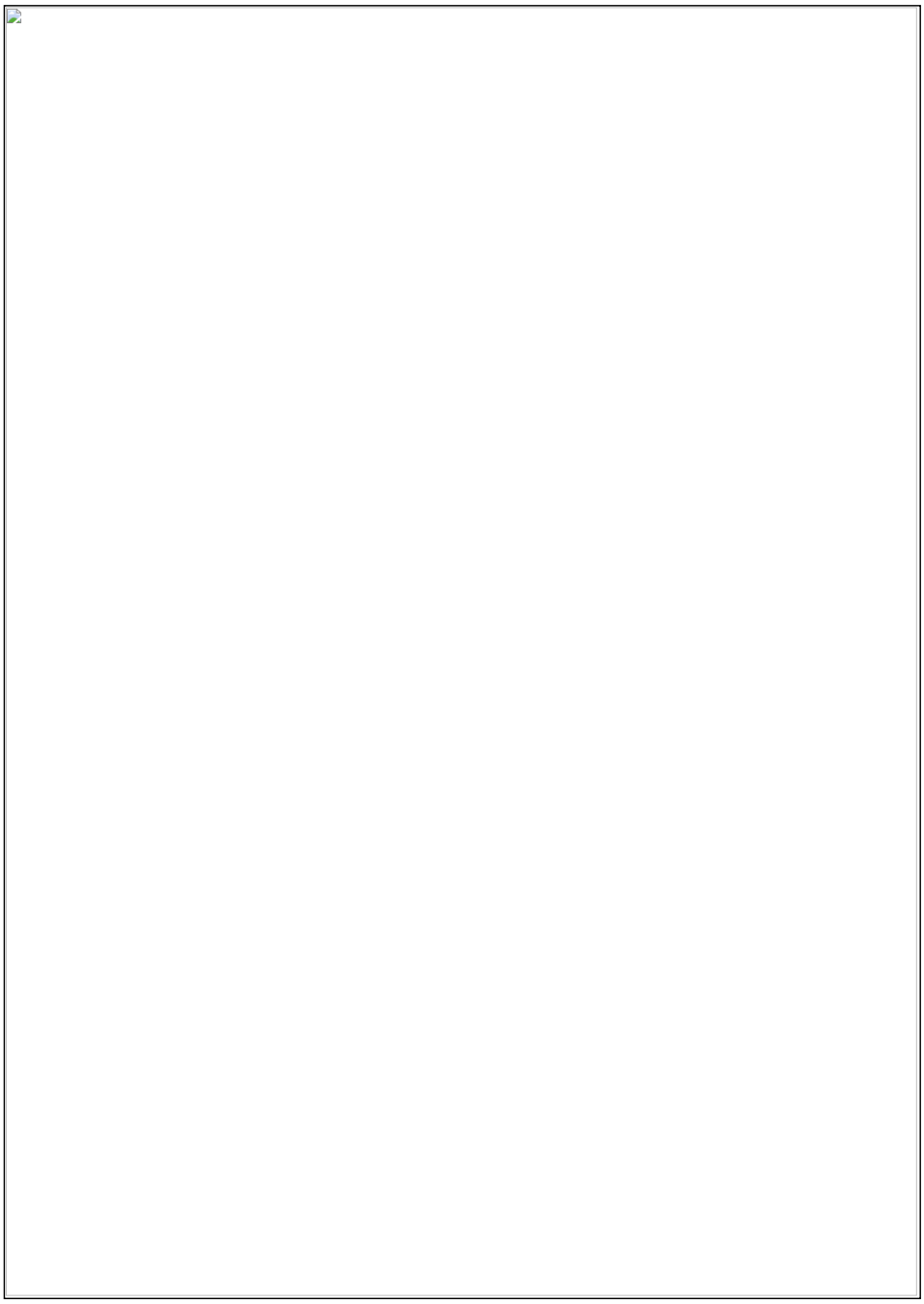
20. If yes, how would you define 'social equity' in relation to transport? (Optional)

Question Title

21. Based on your definition of social equity, do you think Oxford's transportation network is socially equitable? (Optional)

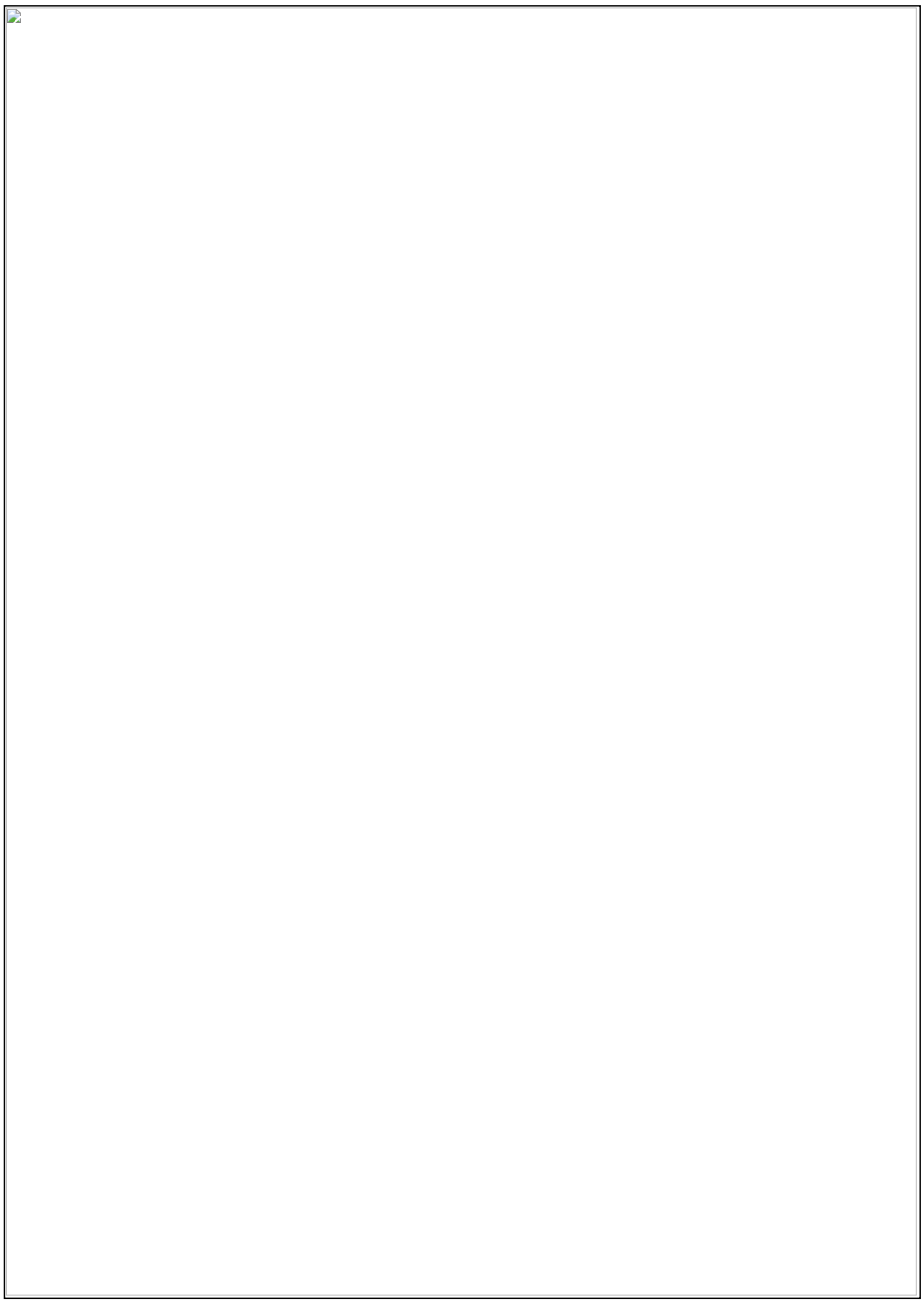
- Strongly agree
- Agree
- Neither agree or disagree
- Disagree
- Strongly Disagree

Any further comments:



Appendix 6: Interviewee Consent Tick Boxes

		Tick Box
1.	I confirm that I have read and understood the Information Sheet for the above study. I have had an opportunity to consider the information and what will be expected of me. I have also had the opportunity to ask questions which have been answered to my satisfaction and would like to take part in an individual interview.	
2.	I understand that I will be able to withdraw my data up to 2nd September 2019 (date of submission for dissertation)	
3.	I consent to participate in the study. I understand that my personal information will be used for the purposes explained to me. I understand that according to data protection legislation, 'public task' will be the lawful basis for processing.	
4.	I understand that all personal information will remain confidential and that all efforts will be made to ensure I cannot be identified. I understand that my data gathered in this study will be stored anonymously and securely. It will not be possible to identify me in any publications.	
5.	I understand that my information may be subject to review by responsible individuals from the University or monitoring and audit purposes.	
6.	I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason, I understand that if I decide to withdraw, any personal data I have provided up to that point will be deleted unless I agree otherwise.	
7.	I understand the potential risks of participating and the support that will be available to me should I become distressed during the course of the research.	
8.	I understand that the data will not be made available to any commercial organisations but is solely the responsibility of the researcher(s) undertaking this study.	
9.	I understand that I will not benefit financially from this study or from any possible outcome it may result in in the future.	
10.	I agree that my anonymised research data may be used by others for future research. No one will be able to identify you when this data is shared.	



Appendix 7: Risk Assessment

RISK ASSESSMENT FORM

FIELD / LOCATION WORK

The Approved Code of Practice - Management of Fieldwork should be referred to when completing this form

http://www.ucl.ac.uk/estates/safetynet/guidance/fieldwork/acop.pdf

DEPARTMENT/SECTION: BARTLETT SCHOOL OF PLANNING

LOCATION(S): OXFORDHSIRE COUNTY COUNCIL (OCC) OFFICES, GREATER LONDON AUTHORITY (GLA) OFFICES

PERSONS COVERED BY THE RISK ASSESSMENT: SARAH HEARN

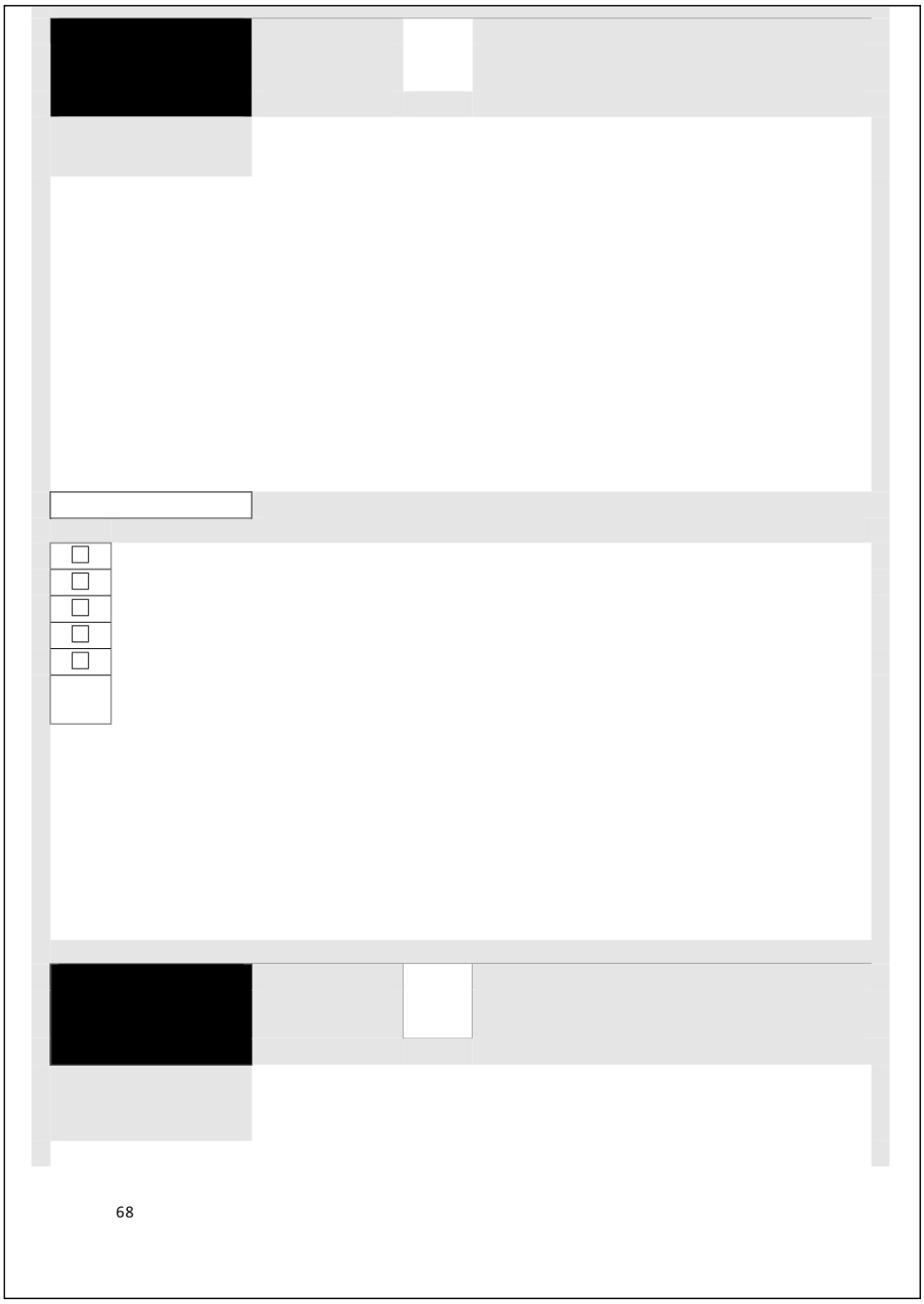
BRIEF DESCRIPTION OF FIELDWORK: Explore how social equity is understood, measuring and prioritised in UK Transport Strategy Plans, comparing the plans of London and Oxford. I will conduct interviews with experts from OCC and GLA who were involved in the creation of the plans and send out web-based surveys to the general public to understand the perceived success of the plans.

Consider, in turn, each hazard (white on black). If **NO** hazard exists select **NO** and move to next hazard section.
If a hazard does exist select **YES** and assess the risks that could arise from that hazard in the risk assessment box.
Where risks are identified that are not adequately controlled they must be brought to the attention of your Departmental Management who should put temporary control measures in place or stop the work. Detail such risks in the final section.

ENVIRONMENT	**The environment always represents a safety hazard. Use space below to identify and assess any risks associated with this hazard**
e.g. location, climate, terrain, neighbourhood, in outside organizations, pollution, animals.	Examples of risk: adverse weather, illness, hypothermia, assault, getting lost. Is the risk high / medium / low ? Getting lost – low risk Adverse UK weather – low risk

CONTROL MEASURES	**Indicate which procedures are in place to control the identified risk**
☐	work abroad incorporates Foreign Office advice
☐	participants have been trained and given all necessary information

- ☐ only accredited centres are used for rural field work
- ☐ participants will wear appropriate clothing and footwear for the specified environment
- ☐ trained leaders accompany the trip
- ☐



Alone in interview rooms with participants – low risk as will be in council office buildings as will be surrounded by other workers

CONTROL MEASURES	Indicate which procedures are in place to control the identified risk
☐	the departmental written Arrangement for lone/out of hours working for field work is followed
☐	lone or isolated working is not allowed
☐	location, route and expected time of return of lone workers is logged daily before work commences
☐	all workers have the means of raising an alarm in the event of an emergency, e.g. phone, flare, whistle
☐	all workers are fully familiar with emergency procedures
X	OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

Tell colleagues where I am going and who I am interviewing
Plan my route to the offices

ILL HEALTH	The possibility of ill health always represents a safety hazard. Use space below to identify and assess any risks associated with this Hazard.
e.g. accident, illness, *personal attack, special personal considerations or vulnerabilities.*	Examples of risk: injury, asthma, allergies. Is the risk high / medium / low? Accident – low risk

CONTROL MEASURES	Indicate which procedures are in place to control the identified risk
☐	an appropriate number of trained first-aiders and first aid kits are present on the field trip
☐	all participants have had the necessary inoculations/ carry appropriate prophylactics
☐	participants have been advised of the physical demands of the trip and are deemed to be physically suited
☐	participants have been adequate advice on harmful plants, animals and substances they may encounter
☐	participants who require medication have advised the leader of this and carry sufficient medication for their needs
X	OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

No health issues
Will take care and allow extra time to get to interviews

TRANSPORT	Will transport be required	NO		Move to next hazard
		YES	X	Use space below to identify and assess any risks
e.g. hired vehicles	Examples of risk: accidents arising from lack of maintenance, suitability or training Is the risk high / medium / low? Travelling to council offices for interviews – low risk			

CONTROL MEASURES	Indicate which procedures are in place to control the identified risk
X	only public transport will be used
☐	the vehicle will be hired from a reputable supplier
☐	transport must be properly maintained in compliance with relevant national regulations
☐	drivers comply with UCL Policy on Drivers http://www.ucl.ac.uk/hr/docs/college_drivers.php
☐	drivers have been trained and hold the appropriate licence
☐	there will be more than one driver to prevent driver/operator fatigue, and there will be adequate rest periods

☐	sufficient spare parts carried to meet foreseeable emergencies
☐	OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

DEALING WITH THE PUBLIC	**Will people be dealing with public**	**YES**	**If 'No' move to next hazard** **If 'Yes' use space below to identify and assess any risks**
e.g. interviews, observing	Examples of risk: personal attack, causing offence, being misinterpreted. Is the risk high / medium / low? Attack – low risk Being misinterpreted - low risk		
CONTROL MEASURES	**Indicate which procedures are in place to control the identified risk**		

☐	all participants are trained in interviewing techniques
☐	interviews are contracted out to a third party
☐	advice and support from local groups has been sought
☐	participants do not wear clothes that might cause offence or attract unwanted attention
☐	interviews are conducted at neutral locations or where neither party could be at risk
☐	OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

Interviews – know who I am meeting and have previous discussions with the participants
Surveys – all online – will not give out personal details and make sure the purpose of the research is very clear

WORKING ON OR NEAR WATER	Will people work on or near water?	NO	If 'No' move to next hazard If 'Yes' use space below to identify and assess any risks
e.g. rivers, marshland, sea.	Examples of risk: drowning, malaria, hepatitis A, parasites. Is the risk high / medium / low?		

CONTROL MEASURES	Indicate which procedures are in place to control the identified risk

- ☐ lone working on or near water will not be allowed
- ☐ coastguard information is understood; all work takes place outside those times when tides could prove a threat
- ☐ all participants are competent swimmers
- ☐ participants always wear adequate protective equipment, e.g. buoyancy aids, wellingtons
- ☐ boat is operated by a competent person
- ☐ all boats are equipped with an alternative means of propulsion e.g. oars
- ☐ participants have received any appropriate inoculations
- ☐ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

MANUAL HANDLING (MH)	Do MH activities take place?	NO	If 'No' move to next hazard If 'Yes' use space below to identify and assess any

	risks
e.g. lifting, carrying, moving large or heavy equipment, physical unsuitability for the task.	Examples of risk: strain, cuts, broken bones. Is the risk high / medium / low?

CONTROL MEASURES	**Indicate which procedures are in place to control the identified risk**

- ☐ the departmental written Arrangement for MH is followed
- ☐ the supervisor has attended a MH risk assessment course
- ☐ all tasks are within reasonable limits, persons physically unsuited to the MH task are prohibited from such activities
- ☐ all persons performing MH tasks are adequately trained
- ☐ equipment components will be assembled on site
- ☐ any MH task outside the competence of staff will be done by contractors
- ☐ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

SUBSTANCES	Will participants work with substances	NO	If 'No' move to next hazard If 'Yes' use space below to identify and assess any risks
e.g. plants, chemical, biohazard, waste	Examples of risk: ill health - poisoning, infection, illness, burns, cuts. Is the risk high / medium / low?		

CONTROL MEASURES	Indicate which procedures are in place to control the identified risk

- ☐ the departmental written Arrangements for dealing with hazardous substances and waste are followed
- ☐ all participants are given information, training and protective equipment for hazardous substances they may encounter
- ☐ participants who have allergies have advised the leader of this and carry sufficient medication for their needs
- ☐ waste is disposed of in a responsible manner
- ☐ suitable containers are provided for hazardous waste
- ☐ OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

OTHER HAZARDS	Have you identified any other hazards?	NO	If 'No' move to next section If 'Yes' use space below to identify and assess any risks
i.e. any other hazards must be noted and assessed here.	Hazard: Risk: is the risk		

CONTROL MEASURES	Give details of control measures in place to control the identified risks

Have you identified any risks that are not adequately controlled?	**NO**	X	**Move to Declaration**
	YES	☐	**Use space below to identify the risk and what action was taken**

Is this project subject to the UCL requirements on the ethics of Non-NHS Human Research?

If yes, please state your Project ID Number

For more information, please refer to: http://ethics.grad.ucl.ac.uk/

DECLARATION The work will be reassessed whenever there is a significant change and at least annually. Those participating in the work have read the assessment.

Select the appropriate statement:

X	I the undersigned have assessed the activity and associated risks and declare that there is no significant residual risk
X	I the undersigned have assessed the activity and associated risks and declare that the risk will be controlled by the method(s) listed above

NAME OF STUDENT: SARAH HEARN

NAME OF SUPERVISOR

** SUPERVISOR APPROVAL TO BE CONFIRMED VIA E-MAIL **

FIELDWORK	**5**	May 2010

Appendix 8: Risk Assessment Confirmation

Dear Sarah,

This email is to confirm that your Risk Assessment form, submitted as part of your research proposal, has been approved. Please include this email as appendix of your dissertation and bear in mind that besides physical risks and control measures, you are also required to comply with specific research ethics requirements and procedures.

Kind Regards

Dr. Marco Dean
BSP, UCL

Appendix 9: Chi-Square Test (Age)

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Transport * Age	45	97.8%	1	2.2%	46	100.0%

Transport * Age Crosstabulation

			Age		
			Age<29	Age>29	Total
Transport	Non-Active	Count	7	11	18
		Expected Count	11.2	6.8	18.0
		% within Transport	38.9%	61.1%	100.0%
		% within Age	25.0%	64.7%	40.0%
	Active	Count	21	6	27
		Expected Count	16.8	10.2	27.0
		% within Transport	77.8%	22.2%	100.0%
		% within Age	75.0%	35.3%	60.0%
Total		Count	28	17	45
		Expected Count	28.0	17.0	45.0
		% within Transport	62.2%	37.8%	100.0%
		% within Age	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.949[a]	1	.008		
Continuity Correction[b]	5.393	1	.020		
Likelihood Ratio	7.006	1	.008		
Fisher's Exact Test				.013	.010
Linear-by-Linear Association	6.794	1	.009		
N of Valid Cases	45				

Appendix 10: Chi-square test (area)

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Transport * Area	44	95.7%	2	4.3%	46	100.0%

Transport * Area Crosstabulation

			Area		
			Inner City	Outer City/ Suburbs	Total
Transport	Non-Active	Count	1	17	18
		Expected Count	9.4	8.6	18.0
		% within Transport	5.6%	94.4%	100.0%
		% within Area	4.3%	81.0%	40.9%
	Active	Count	22	4	26
		Expected Count	13.6	12.4	26.0
		% within Transport	84.6%	15.4%	100.0%
		% within Area	95.7%	19.0%	59.1%
Total		Count	23	21	44
		Expected Count	23.0	21.0	44.0
		% within Transport	52.3%	47.7%	100.0%
		% within Area	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	26.648[a]	1	.000		
Continuity Correction[b]	23.573	1	.000		
Likelihood Ratio	30.857	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	26.042	1	.000		
N of Valid Cases	44				