

Exploring the travel behaviour of the residents of Edinburgh: Edinburgh Travel Behaviour Survey 2014.

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1.0 INTRODUCTION

1.1 This paper presents the findings from the Edinburgh Travel Behaviour Survey 2014. The research was designed to look in detail at the volume and type of journeys people in Edinburgh make, which methods of transport they use and their attitudes towards different types of transport. The research consisted of a representative face-to-face survey of 1,195 Edinburgh residents and a seven-day travel diary, which every household resident was asked to complete. This paper aims to explore in detail the methodology, analysis and findings of the survey and will critically evaluate the challenges and limitations of a city-wide travel behaviour survey. More specifically it will explore how this data can be utilised effectively to support Sustrans Scotland activity in influencing travel behaviour in Edinburgh.

1.2 The research was undertaken by the ICM Government & Social Research Unit on behalf of Sustrans in Scotland and the City of Edinburgh Council.

2.0 METHODOLOGY

2.1 ICM interviewed a total of 1,195 residents (aged 16+) in 95 Output Areas (OAs) across the City of Edinburgh Council area. The research was carried out between 5 May and 12 June 2014. Interviews were carried out face-to-face in respondents' homes using a random location method. A representative sample was interviewed with quotas set by gender, age, work status and ethnicity. A proportional sampling approach was used to ensure each of the 17 wards was fairly represented in the data. The wards are listed in Appendix 1.

2.2 In addition to the main face-to-face survey, every person in every household taking part was asked to complete a personal travel diary. This diary covered a period of seven days and those completing them were asked to record all personal travel during that time. For each trip they made, participants were asked to record the purpose of the journey, the starting point and the end destination, the mode of transport used, the distance covered and the departure and arrival times. For journeys with multiple stages, each stage was recorded separately as part of the journey.

2.3 A total of 1,121 diaries were received from the 1,195 households where a mainstage questionnaire was completed. The total number of trips recorded was 12,944, covering the period 5 May – 12 June 2014. Diary data has been weighted to the demographic profile of Edinburgh.

2.4 At the analysis stage, the data were weighted by age, gender, working status, ethnicity, and ward using Census 2011 data. All responses have been analysed by a range of demographic, geographical and attitudinal variables; detailed breakdowns have been provided in a separate volume of computer tables.

2.5 Additionally residents were asked specific questions to assess their attitudes towards travel. As part of a three year IEE STEER funded project, academics from the University of Aberdeen developed a series of 'golden' questions which enabled them to group people into eight distinct segments depending on their attitude. The SEGMENT analysis was adapted for this behaviour survey and included six 'golden questions' therefore allowing the residents to be grouped according to attitude. The SEGMENT analysis is discussed in more detail in this paper.

Presentation and interpretation of data

2.6 This is a sample of Edinburgh residents and not the entire population of the city were interviewed. In consequence, all results are subject to sampling tolerances, which means that not all differences are statistically significant. Further information about sampling tolerances is appended.

2.7 This survey deals with residents' perceptions at the time the survey was conducted, rather than facts. Residents' perceptions, therefore, may not accurately represent the level and quality of services that are currently provided in Edinburgh. Indeed, one of the challenges will be to link these perceptions with other data that is available, for example performance indicators or other measurements of service quality.

2.8 The report highlighted differences across social grades when statistically significant; this is also true of other demographic variables such as age, gender and work status. Explanation of social grade categories can be found in the appendix.

3.0 HEADLINE FINDINGS

3.1 Access to transport

27 per cent Edinburgh residents own at least one adult bicycle, and 11 per cent of residents have access to at least one children's bike. A quarter of residents have a bus season ticket, and are more likely to belong to less affluent groups.¹ Just over half of resident have access to a car or van in their household. This varies across different ward areas in Edinburgh.

3.2 Methods of Travel

Bus is the most common method of transport (82 per cent) closely followed by walking (81 per cent).¹ 12 per cent of residents reported cycling at least once a week. Walking is more common and 79 per

cent of residents reported walking for 20 minutes or more without stopping, at least once a week. 59 per cent of residents reported walking for a minimum of 20 minutes at least three times a week. In terms of the profile of those who walk and cycle in Edinburgh, younger people and students are more likely to walk, and cycling is most common among men, younger people and affluent groups. Car travel is more common among older and more affluent people.

3.3 Attitudes towards transport types

3.3.1 Walking

65 per cent of people when asked why they walk, do so to improve their health and 50 per cent walk for convenience. Edinburgh residents also tend to have very positive views about the city as a place to walk in terms of feeling safe on the streets and the lighting and cleanliness of the streets. However, attitudes vary according to location within Edinburgh; 33 per cent of those who say local pavements are not in good condition live in Fountainbridge/Craiglockhart, with another quarter of residents from Colinton/Fairmilehead and Sighthill/Gorgie also agreeing. This suggests priority areas for maintenance, if increases in walking are to be achieved. Barriers to walking include people being too busy, the weather being a factor and in some cases physical difficulties preventing people walking.

3.3.2 Cycling

70 per cent of those cycling are doing so for health benefits, 35 per cent for cost reasons and 29 per cent for convenience. Although just 12 per cent of Edinburgh residents cycle at least once a week, people are generally positive about Edinburgh as a place to cycle around. For example, 41 per cent say that it is easy to get around by bicycle and 41 per cent say it is pleasant. However, there are concerns about safety for which 14 per cent of respondents saying that this acts as a barrier to cycling more, whereas almost half of residents feel cycling is unsafe because of the traffic. Some barriers to cycling are specific to certain areas. For instance, while just seven per cent of residents say that dangerous drivers stop them from cycling; this rises to 22 per cent of those in the City Centre and 24 per cent of those in Drum Brae/Gyle. The distance or length of the journey as a barrier to cycling is more of a concern for residents living in Meadows/Morningside (14 per cent compared to an average of three per cent).

3.3.3 Public Transport

Edinburgh residents feel the city is well-served by public transport. Nine in ten feel that the city centre is easy to get around using local public transport and just over three-quarters of residents say that it is easy to get to destinations outside the City Centre.

3.3.4 Trip information

On average, residents made 2.4 journeys per day, with the average journey covering 3.8 miles. Residents spend an average of 57.5 minutes per day travelling: 16 minutes travelling by

car, 15.3 minutes travelling by bus and 15 minutes walking per day, and 1.5 minutes a day travelling by train, 1.3 minutes a day cycling and 1 minute using a taxi.

3.3.5 Distance

The average total distance covered per week in Edinburgh is 52.3 miles per person. Almost half of this is attributable to car use, with the average resident driving 25 miles per week. On average, Edinburgh residents travel 9.6 miles per week by bus, 8.1 miles as a passenger in a car, 3.8 miles walking and 3.2 miles on the train. Exploring the distance travelled solely among transport users shows that the average daily train journey in Edinburgh is 23.8 miles and the average car drive is 11.8 miles. Those who ride a bike, cycle 2.8 miles a day on average.

3.3.6 Purpose of trips

In Edinburgh, 30 per cent of journeys made are to and from work. A quarter of journeys are made to go shopping and a further 20 per cent of journeys are made for leisure and social activities.

3.3.7 Travel to work

Residents use a variety of forms to transport to travel to work. 6 per cent travel to work by bike and 33 per cent travel to work on foot. This compares to 44 per cent of working residents driving and further 6 per cent are car passengers.

3.3.8 Travel to school and college.

Among the residents who travel to school and college, walking (52 per cent) and public transport (36 per cent) are the most common, with 14 per cent travelling by bike.

ATTITUDES TOWARDS BEHAVIOR CHANGE: OVERVIEW SEGMENT ANALYSIS

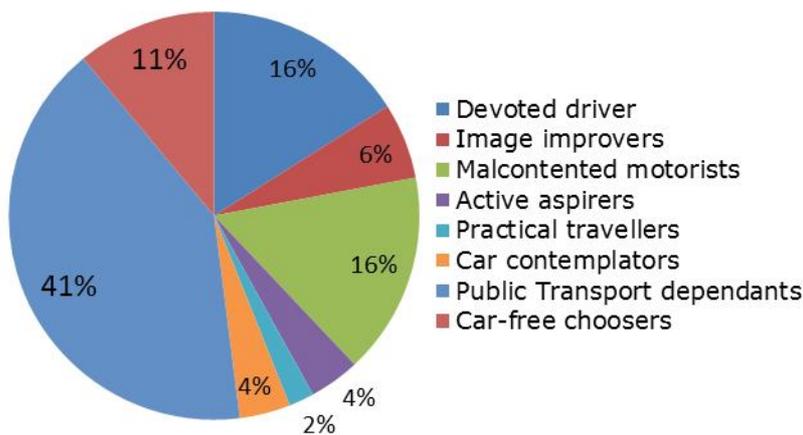
4.0 SEGMENT QUESTIONS

4.1 A further aim of the survey was to identify how the adult population of Edinburgh falls into eight attitudinal segments. As part of a three year IEE STEER funded project, academics from the University of Aberdeen developed a series of 'golden' questions which would enable them to group people into eight distinct segments depending on their attitude. The SEGMENT analysis was adapted for the ETBS and allows the residents to be grouped according to attitude.²

The chart below shows how the adult population of Edinburgh fall into the eight attitude segments devised by the University of Aberdeen.

Chart 1: Percentage of Edinburgh residents according to Segment Group.

Segmentation (% residents)



n=1195

4.2 The largest group is **Public Transport dependants**, which accounts for 41 per cent of the population of Edinburgh. People who fall into this group tend to think that people should be able to use their cars freely, but do not like driving very much themselves. People in this group are unlikely to see themselves as cyclists, but enjoy walking and would like to do more of it. People in this group are reliant on public transport, but can get frustrated with the speed of the bus service which makes them frustrated that they cannot travel by car more regularly.

4.3 In contrast, 16 per cent of people in Edinburgh are **Devoted drivers**. People in this group prefer travelling by car over any other form of transport and have no interest in reducing their car use

because they do not believe there are realistic alternatives. Devoted drivers do not see themselves as cyclists or bus users, considering them to be too slow and stressful. People in this group are not motivated by using their travel time to get fit and are not motivated to reduce their emissions of greenhouse gasses.

4.4 The same proportion of residents are **Malcontented motorists**. In contrast to Devoted drivers, this group drive a lot, but find it stressful and want to cut down their car use. However, they find there are a lot of practical problems in switching to other modes of transport, feeling that the bus provision in their area is inadequate and walking would take too long. That said, while this group would like to switch to public transport or walking, they do not feel comfortable with the idea of cycling.

4.5 **Car-free choosers** account for 11 per cent of people in Edinburgh. This group is characterised by those who do not like driving and feel that cars and their impacts are something that need to be urgently addressed. People in this group are committed to using alternative forms of transport: they find the bus enjoyable and relaxing, enjoy the sense of freedom that they get from cycling and would like to walk more because of the health benefits.

4.6 Six per cent of Edinburgh residents are **Image improvers**. Image improvers like to drive, but recognise that it would be good for the planet if everyone reduced their car use a little. People in this group feel that driving a car is part of their identity and it would be impractical to switch to alternative forms of transport. Image improvers do not relate to bus users, but see cycling as a form of self-expression. They think they should walk more, but are concerned about the amount of time it takes.

4.7 A small minority – one in twenty-five – are in the group known as **Active aspirers** (four per cent). Those who fall into this group feel guilty about using their car for short journeys and would like to cut down, but do not see the bus as a solution because it is not practical for transporting things or travelling with children. Their preferred alternatives are walking and cycling, and they already do both.

4.8 The same proportion (four per cent) are **Car contemplators**. People in this group do not have a car at the moment, most likely because they cannot afford one, but would like to have one in the future. Car contemplators find cycling to be impractical and stressful, but are open to walking as it can be a good form of fitness. While they use the bus at the moment, they would rather not because it is inefficient.

4.9 The smallest group in Edinburgh, which accounts for just two per cent of the population, are **Practical travellers**. This group considers the car merely as a practical means of getting from one place to another and only use it when necessary. They walk and cycle a lot because they are often quicker, cheaper and more convenient. However, Practical travellers do not use the bus often because it is slower. This group are unlikely to change their approach to travel.

The table below outlines the profile of each ward in Edinburgh.

Table 1: Segment group according to ward are in Edinburgh

Ward	Segment group							
	Devoted drivers	Image improvers	Malcontented motorists	Active aspirers	Practical travellers	Car contemplators	PT dependents	Car free choosers
Almond	23%	18%	27%	10%	8%	7%	7%	2%
City Centre	13%	0%	20%	2%	2%	10%	33%	20%
Colinton/ Fairmilehead	17%	7%	32%	2%	8%	3%	28%	3%
Corstorphine / Murrayfield	35%	4%	9%	4%	0%	0%	30%	20%
Craigtinny / Duddingston	22%	0%	26%	0%	0%	0%	46%	6%
Drum Brae/ Gyle	18%	2%	23%	14%	5%	4%	32%	4%
Forth	27%	17%	10%	1%	6%	0%	36%	4%
Fountainbridge/ Craiglockhart	12%	0%	15%	2%	0%	5%	56%	12%
Inverleith	20%	5%	13%	9%	3%	0%	46%	5%
Leith Walk	3%	3%	4%	5%	1%	6%	54%	24%
Leith	16%	0%	13%	8%	0%	2%	52%	10%
Liberton/ Gilmerton	18%	4%	25%	6%	0%	1%	39%	8%
Meadows/ Morningside	5%	1%	4%	1%	6%	5%	56%	23%
Pentland Hills	18%	25%	18%	10%	3%	3%	18%	5%
Portobello/ Craigmillar	15%	8%	32%	0%	0%	0%	37%	8%
Sighthill/ Gorgie	12%	2%	8%	0%	1%	9%	59%	10%
Southside/ Newington	15%	1%	12%	0%	0%	11%	43%	18%

5.0 INDIVIDUAL SEGMENT QUESTIONS

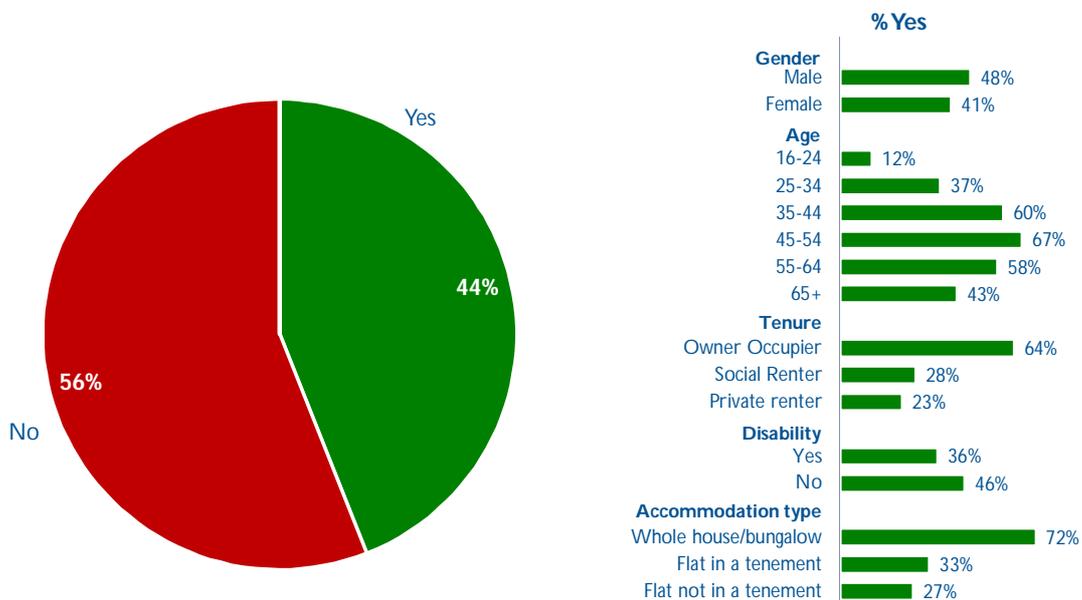
5.1 Attitudes towards driving

Just under half of Edinburgh residents (44 per cent) have driven a car or van within the past year, while 56 per cent have not. In line with trends on car ownership, driving is much more common among those of a higher social grade. Seven in ten of the most affluent AB group (72 per cent) have driven in the past year compared to a quarter (24 per cent) of the DE group. Those aged between 45 and 54 (67 per cent) and men (48 per cent) are also more likely to have driven a car.

Chart 2: Percentage of residents who have driven a car or van in the past 12 months according to age, gender, tenure and accommodation type.

Car users

Q19. Have you driven a car or van in the past 12 months?



Base: All Edinburgh residents aged 18+ (1,195); 5 May – 12 June 2014



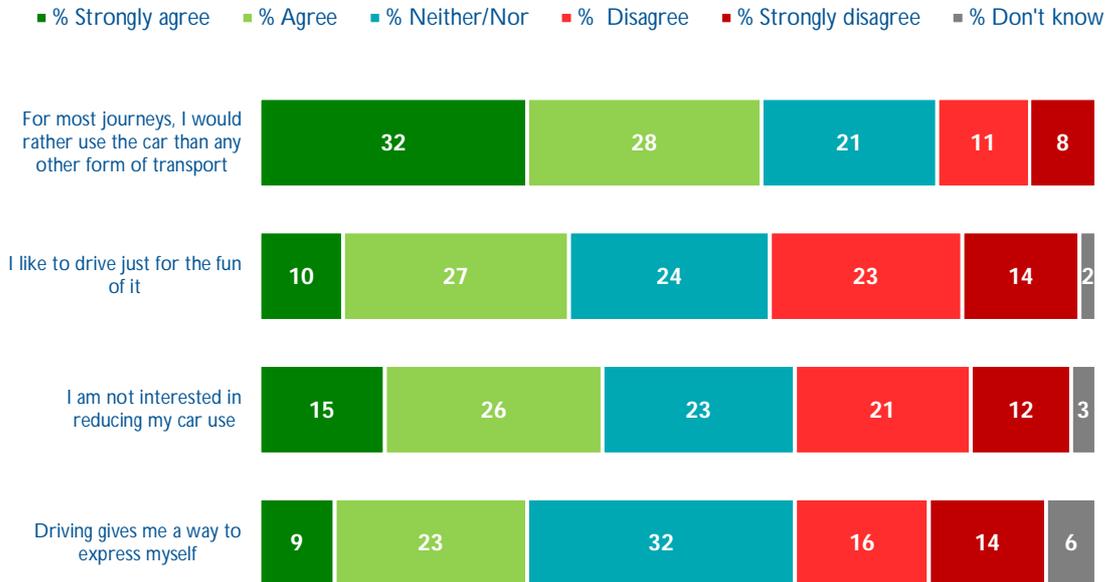
5.2 Among those who have driven in the past twelve months, most **prefer their car to other modes of travel**. Three in five (60 per cent) say that they would rather use their car than any other form of transport for most journeys. One in five (19 per cent) are more open to using multiple forms of transport, saying they disagree.

5.3 For a sizeable minority, this preference for driving can be partly ascribed to an enjoyment of driving: just under two in five drivers (37 per cent) say they **like to drive just for the fun of it**, while a third (32 per cent) say **driving gives them a way to express themselves**. Further, a considerable proportion of drivers would not consider changing their travel behaviour: two in five (41 per cent) say they are **not interested in reducing their car usage** (although 33 per cent would consider changing).

Chart 3: Attitudes towards car use in Edinburgh

Attitudes towards car use

Q20. To what extent do you agree or disagree with the following statements



Base: All who have driven a car or van in the last 12 months (531); 5 May – 12 June 2014



5.4 Drivers belonging to lower social grades tend to have a stronger preference for using their car. DE drivers (66 per cent) are significantly more likely than those of the AB group (45 per cent) to prefer their car to other modes of travel. Similarly, drivers belonging to the DE group are significantly more likely to agree that they are not interested in reducing their car usage (59 per cent) compared to the AB group (30 per cent).

5.5 By contrast, higher social grades show more willingness to consider other methods of transport, with two in five AB drivers (38 per cent) disagreeing that they are not interested in reducing their car usage compared to 23 per cent of DE drivers.

5.6 Men are significantly more likely to see driving as a way of self-expression. Nearly two in five (37 per cent) agree that driving gives you a way to express yourself compared to 27 per cent of women. Similarly, over two in five C2 drivers (42 per cent) and DE drivers (41 per cent) agree that driving gives you a way to express yourself.

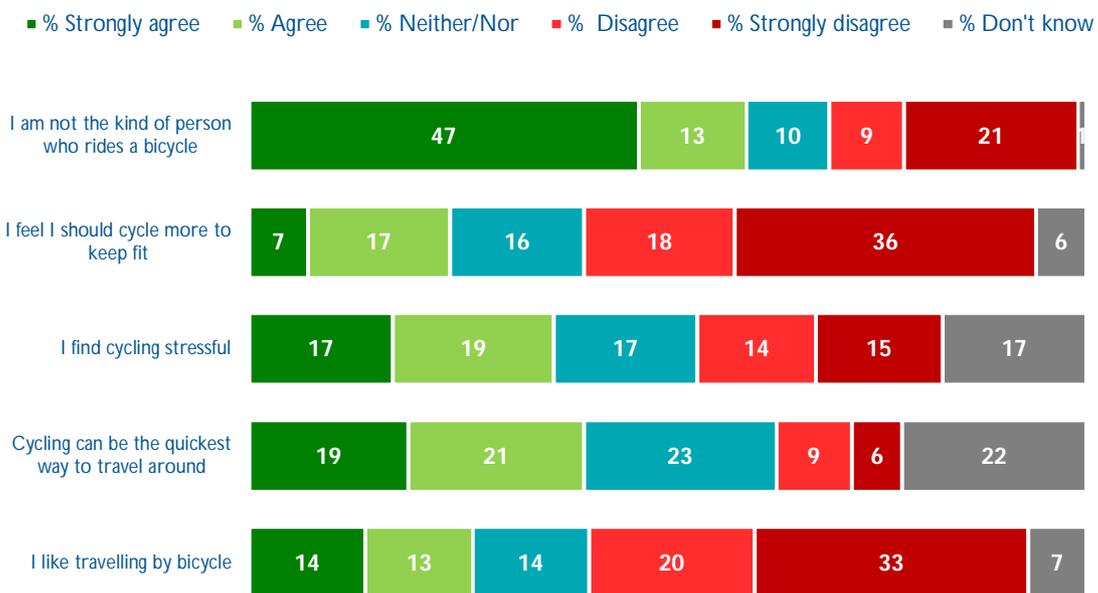
5.7 Attitudes towards cycling

While cycling is popular with a minority, most Edinburgh residents have some hesitations about cycling as a form of transport. The majority of Edinburgh residents (60 per cent) agree that they are **not the kind of person who rides a bicycle**. This could be linked to a perception of cycling as stressful, with over a third (36 per cent) of residents describing it as such.

Chart 4: Attitudes towards cycling in Edinburgh

Attitudes to cycling

Q22. To what extent do you agree or disagree with the following statements



Base: All Edinburgh residents aged 18+ (1,195); 5 May – 12 June 2014



5.8 However, a sizeable minority are considerably more interested in cycling. Three in ten (30 per cent) believe they are the kind of person who rides a bicycle. Over a quarter of residents (27 per cent) say they like travelling by bicycle, while a similar proportion (24 per cent) **feel they should cycle more to keep fit**. Two in five (40 per cent) believe that **cycling can be the quickest way to travel around**.

5.9 Women and lower social grades tend to have more reservations about cycling. Women (66 per cent) are significantly more likely than men (53 per cent) to believe that they are not the kind of person who rides a bicycle, and also tend to find cycling stressful (40 per cent). Further, those belonging the DE group (72 per cent) are significantly more likely to believe that they are not the kind of person who rides a bicycle compared to the AB group (48 per cent).

5.10 By contrast, residents who are male or belong to higher social grades are more likely to have an interest in cycling. Over a third of the AB group (35 per cent) feel they should cycle more to keep fit, as do three in ten men (28 per cent). Residents in Almond (45 per cent) and in Pentland Hills (46 per cent) are also more interested in cycling for fitness. Similarly, men are significantly more likely than women (34 per cent compared to 20 per cent) to report that they like cycling, as are those belonging to the AB group (37 per cent) and students (38 per cent).

The table below shows attitudes towards cycling by ward.

Table 2: Attitudes towards cycling in Edinburgh by ward.

Attitudes to cycling by ward					
Ward	% agree not the type of person who rides a bicycle	% agree should cycle more to keep fit	% agree find cycling stressful	% agree cycling can be the quickest way to get around	% agree like travelling by bicycle
Almond	48%	45%	23%	45%	36%
City Centre	62%	21%	37%	49%	34%
Colinton/ Fairmilehead	63%	13%	55%	27%	17%
Corstorphine/ Murrayfield	64%	10%	37%	26%	23%
Craigtinny/ Duddingston	83%	2%	57%	10%	7%
Drum Brae/ Gyle	53%	27%	26%	30%	19%
Forth Ward	65%	23%	32%	54%	36%
Fountainbridge/ Craiglockhart	66%	41%	48%	41%	23%
Inverleith	55%	8%	19%	28%	22%
Leith	68%	21%	43%	30%	13%
Leith Walk	52%	30%	29%	68%	38%
Liberton/ Gilmerton	60%	23%	40%	58%	35%
Meadows/Morningside	44%	18%	38%	60%	29%
Pentland Hills	40%	46%	42%	63%	51%
Portobello/ Craigmillar	64%	26%	43%	31%	33%
Sighthill/ Gorgie	69%	36%	21%	21%	16%

Southside/Newington	62%	16%	38%	26%	20%
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5.11 Attitudes towards walking

Walking is a popular mode of travel in Edinburgh. Eight in ten residents (82 per cent) say they **like travelling by walking**, while the added benefit of keeping fit is also widely appreciated, with over half (53 per cent) saying they feel they **should walk more to keep fit**. Three quarters of residents (75 per cent) disagree that they are **not the kind of person that likes to walk a lot**, while just 15 per cent agree.

Chart 5: Attitudes towards walking in Edinburgh

Attitudes to walking

Q23. To what extent do you agree or disagree with the following statements

■ % Strongly agree ■ % Agree ■ % Neither/Nor ■ % Disagree ■ % Strongly disagree ■ Don't know



Base: All Edinburgh residents aged 18+ (1,195); 5 May – 12 June 2014



5.12 Younger age groups and higher social grades tend to be more interested in walking. Nine in ten 16-24 year olds (92 per cent) say they like travelling by walking, as do 97 per cent of students. Those belonging to the AB group (92 per cent) and the C1 group (85 per cent) are also significantly more likely than other social grades to report that they like walking. Conversely, those belonging to the C2 group (26 per cent) and the DE group (23 per cent) are significantly more likely to say that they are not the kind of person that likes to walk a lot.

5.13 Residents who are middle-aged and in work are most likely to perceive walking as a way of keeping fit: two thirds of 35-44 year olds (65 per cent) and six in ten 45-54 year olds (61 per cent) feel

they should walk more to keep fit, as do seven in ten part-time workers (68 per cent) and three in five full-time workers (60 per cent).

5.14 Attitudes towards public transport

The majority of Edinburgh residents are not averse to using public transport. Nearly four in five (78 per cent) disagree that they are **not the kind of person to use a bus**, while just one in nine (11 per cent) agree. In general, most would **prefer using the bus to cycling**: only 15 per cent say they would rather cycle than use the bus, while seven in ten (71 per cent) disagree.

Chart 6: Attitudes towards using the bus

Attitudes towards using the bus

Q24. To what extent do you agree or disagree with the following statements

■ % Strongly agree ■ % Agree ■ % Neither/Nor ■ % Disagree ■ % Strongly disagree ■ Don't know



Base: All Edinburgh residents aged 18+ (1,195); 5 May - 12 June 2014



5.15 Men are significantly more likely than women to say that they are not the kind of person to use the bus (15 per cent compared to eight per cent) while 45-54 year olds (20 per cent) and 35-44 year olds (15 per cent) are the age groups least likely to describe themselves as the kind of person to use the bus.

5.16 Men (21 per cent) are more than twice as likely as women (nine per cent) to say they would rather cycle than use the bus. Further, 16-24 year olds (25 per cent) and students (24 per cent) are more likely to prefer cycling to public transport.

5.17 Attitudes towards the environment

A considerable proportion of Edinburgh residents are concerned about the effect of greenhouse gas emissions on the environment. Over two in five (43 per cent) say they **feel a moral obligation to reduce their emissions of greenhouse gases**. A quarter (24 per cent) feel no personal obligation, saying they disagree, while a further quarter (24 per cent) neither agree nor disagree and eight per cent say they don't know.

Chart 7: Attitudes towards the environment

Attitudes towards the environment

Q25. To what extent do you agree or disagree with the following statements

■ % Strongly agree ■ % Agree ■ % Neither/Nor ■ % Disagree ■ % Strongly disagree ■ % Don't know



Base: All Edinburgh residents aged 18+ (1,195); 5 May – 12 June 2014



5.18 Younger and more affluent groups feel more of a sense of personal obligation with regards to greenhouse gas emissions. Students (61 per cent) are particularly likely to feel a sense of obligation, as are 16-24 year olds (55 per cent) and 25-34 year olds (48 per cent). Three in five of those belonging to the AB group (59 per cent) say they feel a moral obligation to reduce their greenhouse gas emissions compared to a third (33 per cent) of the DE group.

5.19 However, a similar proportion believe that **people should be free to choose their own form of transport**. Just under half of Edinburgh residents (46 per cent) agree that people should be allowed to use their cars as much as they like. One in five (20 per cent) disagree with this view, while a further one in five (22 per cent) neither agree nor disagree and 12 per cent say they don't know.

5.20 Residents aged between 45 and 64 are most likely to agree that people should be allowed to use their cars as much as they like, with over half (54 per cent) of 55-64 year olds and 52 per cent of 45-54 year olds holding this view.

6.0 CONCLUSION

6.1 This paper has presented the headline findings of the travel behaviour survey conducted in the City of Edinburgh in 2014. The SEGMENT methodology was designed to understand the behaviour and attitudes of residents with the primary aim of targeting behaviour change marketing or intervention according to each group. The findings from the SEGMENT questions were presented in the paper according to area and demographics such as gender, socioeconomic status and age. However, the nature of a city-wide travel behaviour survey allows researchers to explore how and when residents move around the city, and importantly what influences and motivates them to choose different modes of transport. There is scope to investigate the raw data and diary data further.

6.2 The volume of the raw diary data alone allows up to 12000 trips to be plotted across the city, coupled with a rich understanding of the attitudes of residents towards transport in the city it presents stakeholders with an opportunity to develop policies responsive to local area needs and demographic profiles.

6.3 To understand the scope of raw data generated from the survey and diary, Sustrans facilitated a workshop with colleagues in Sustrans and Edinburgh City Council. The primary aim was to explore how further analysis of the raw data could help influence participants policy and project delivery in terms of active travel, particularly cycling and walking. The starting point for the workshop was to understand the key audiences participants needed to influence, and the types of information and data required to do this.

6.4 Appendix 3 lists the questions generated from the discussions at the workshop. An example of the themes which emerged from the workshop included specific information about travel behaviours to and from school and comparing this to the national results of the Hands Up Scotland Survey; travel to the city centre according to a number of variables, e.g. location, segment groups etc.; barriers to active travel according to segment group and areas of multiple deprivation; and attitudes to active travel according to gender, age, income and city location. Some of the information requested is already presented within survey report, however, other areas required further analysis.

6.5. Notwithstanding the limitations of the raw data, the next steps are to continue undertaking further analysis of the raw data and disseminate this to the workshop participants and active travel practitioners in a series of short briefs. The findings of the further analysis will form part of the presentation at the STAR Conference in May 2015.

APPENDIX 1 Statistical reliability and sampling

Guide to statistical reliability

The respondents to this research are only samples of the total Edinburgh ‘population’. We cannot, therefore, be certain that the figures obtained are exactly those we would have if everybody in these two groups had been interviewed (the ‘true’ values). We can, however, predict the variation between the sample results and the ‘true’ value from knowledge of the size of the samples on which the results are based and the number of times that a particular answer is given.

The confidence with which we can make this prediction is usually chosen to be 95% – that is, the chances are 19 in 20 that the ‘true’ value will fall within a specified range. The table below illustrates the predicted ranges for different sample sizes and percentage results at the ‘95% confidence interval’², assuming an infinite population

Size of sample on which survey result is based	Approximate sampling tolerances applicable to percentages at or near these levels		
	10% or 90%	30% or 70%	50%
	±	±	±
100 interviews	5.9%	9.0%	9.8%
200 interviews	4.2%	6.4%	6.9%
300 interviews	3.4%	5.2%	5.7%
500 interviews	2.6%	4.0%	4.4%
1,000 interviews	1.9%	2.8%	3.1%
1,195 interviews	1.7%	2.6%	2.8%

For example, on a question where 50% of the people in a sample of 1,195 respond with a particular answer, the chances are 95 in 100 that this result would not vary by more than three percentage points, plus or minus from a complete coverage of the entire population using the same procedures. However, while it is true to conclude that the “actual” result (95 times out of 100) lies anywhere between 47% and 53%, it is proportionately more likely to be closer to the centre of this band (i.e. at 50%).

Tolerances are also involved in the comparison of results from different parts of a sample. A difference, in other words, must be of at least a certain size to be considered statistically significant. The following table is a guide to the sampling tolerances applicable to comparisons.

Size of samples compared	Differences required for percentage levels significance at or
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² It should be noted that these figures assume a simple random possibility sample design with no design effects; in reality, with quota surveys these are likely to occur and widen the margin of error, so this should be treated as a guide.

near these percentage levels

	10% or 90% ±	30% or 70% ±	50% ±
100 and 100	8.4%	12.8%	13.9%
100 and 200	7.2%	11.0%	12.1%
300 and 300	4.8%	7.3%	8.0%
500 and 500	3.7%	5.7%	6.2%
500 and 1,000	3.2%	4.9%	5.4%
1,000 and 1,000	2.6%	4.0%	4.4%

Sample profile

	Unweighted number of respondents	Weighted number of respondents	Weighted % of respondents
Gender			
Male	547	577	48.3
Female	648	618	51.7
Age			
18-24	139	214	17.9
25-34	237	248	20.7
35-44	19	197	16.5
45-54	203	185	15.5
55-64	162	150	12.5
65+	259	201	16.8
Ethnicity			
White	1079	1104	92.4
Non-white	116	91	7.6
Work status			
Full-time	488	576	48.2
Part-time	119	136	11.4
Unemployed	182	155	13
Retired	300	139	11.6
Student	84	189	15.8
Ward			
Almond	65	62	5.2
City Centre	64	61	5.1
Colinton/Fairmilehead	64	61	5.1

Corstorphine/Murrayfield	36	57	4.8
Craigtinny/Duddingston	64	65	5.4
Drum Brae/Gyle	54	56	4.7
Forth Ward	78	84	7
Fountainbridge/Craiglockhart	65	60	5
Inverleith	83	78	6.5
Leith	65	62	5.2
Leith Walk	87	80	6.7
Liberton/Gilmerton	77	84	7
Meadows/Morningside	76	86	7.2
Pentland Hills	65	60	5
Portobello/Craigmillar	64	63	5.3
Sighthill/Gorgie	104	93	7.8
Southside/Newington	84	84	7

APPENDIX 2: Social grade definition

The grades detailed below are the socio-economic definitions and are standard on all surveys carried out by ICM Research.

Social Grades		
	Social Class	Occupation of Chief Income Earner
A	Upper Middle Class	Professionals such as doctors, surgeons, solicitors or dentists; chartered people like architects; fully qualified people with a large degree of responsibility such as senior editors, senior civil servants, town clerks, senior business executives and managers, and high ranking grades of the Services.
B	Middle Class	People with very responsible jobs such as university lecturers, hospital matrons, heads of local government departments, middle management in business, qualified scientists, bank managers, police inspectors, and upper grades of the Services.
C1	Lower Middle Class	All others doing non-manual jobs; nurses, technicians, pharmacists, salesmen, publicans, people in clerical positions, police sergeants/constables, and middle ranks of the Services.
C2	Skilled Working Class	Skilled manual workers/craftsmen who have served apprenticeships; foremen, manual workers with special qualifications such as long distance lorry drivers, security officers, and lower grades of Services.
D	Working Class	Semi-skilled and unskilled manual workers, including labourers and mates of occupations in the C2 grade and people serving apprenticeships; machine minders, farm labourers, bus and railway conductors, laboratory assistants, postmen, door-to-door and van salesmen.
E	Those at the lowest levels of subsistence	Those on lowest levels of subsistence including pensioners, casual workers, and others with minimum levels of income

APPENDIX 3 Questions generated form the workshop.

Workshops themes/ questions
What are the correlations between reasons people don't chose active travel and those who do? And what would make them cycle?
What is the impact of choosing an alternative travel mode in terms of cost, skills and perceived capacity (e.g. to cycle/walk)?
What would change those who say 'there is nothing you can do to get me cycling'?
Physical and mental health travelling in isolation vs public transport + active travel
Is there a link between social isolation and transport issues?
Walkers to work vs street space allocation (cycling and walking)
Purpose of journey
Length of journey
length of journey (time)
When do people decide how to travel each day?
What variables affect how people travel each day?
Who is coming to the City Centre? Split by:
<i>SEGMENT group</i>
<i>Income</i>
<i>Age</i>
<i>Gender</i>
<i>Method of travel</i>
<i>Spend in centre</i>
Person profile e.g. who fits which segment group - according to income, age, wards and areas of multiple deprivation.
Employment opportunities and limitations due to transport factors.
Places you like and dislike in the city.
School run data and onward journeys
Split school and college data as there are different audiences
Potential for change in mode share (on all trips)
Safety regarding cycling and walking perceived and real
Overlay of Sustrans interventions - IBike, ATC on travel behaviour results
What percentage of low income group are students?
Do all areas of deprivation share the same SEGMENT profile? e.g. Public Transport Dependants
Who travels to the city centre?
Method of travel to city centre
Where is their start location?
What SEGMENT group do they belong to?
How is the city centre accessed?
Data combined with active travel perspective e.g challenge the orthodox in terms of messages about travel to work e.g. radio travel alerts.
20mph zones and results of ETBS. e.g. is there a relationship between 20mph and active travel?
Modal share
Economic analysis information
Trip data info and origin and destinations plotted on GIS.

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References

ICM (2014) Edinburgh Travel Behaviour Survey [unpublished] ICM, London

Endnotes

¹ Bus travel is free to Scottish residents over 60, which explains the high percentage of those over 55 owning a bus season ticket. Similarly bus season ticket ownership is higher amongst residents with disabilities.

² See Dr Julian Anable and Dr Steve Wright, Golden Questions and Social Marketing Guidance Report, University of Aberdeen