

“Are we nearly there yet?” Exploring gender and active travel

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1 Introduction

Rapid urbanisation and shorter journeys made in cities provide an opportunity to shift from car use to other more sustainable modes of transport. This shift has been the major focus of the Scottish Government's Cycling Action Plan, which sets out a vision of 10% of everyday journeys to be made by bike, by 2020. Within the action plan, cities in particular have been identified as major sites for transport behaviour change (Scottish Government, 2017).

Cities have also frequently been the site of protest and empowerment, channelling the focus of progressive initiatives around women's rights and enfranchisement, raising awareness of the need for women to have equal access to local public services, employment, and decision-making authorities. Mobility plays a vital role in ensuring such opportunities are accessible to all, and also has the ability to impact on household expenditure, wellbeing and feelings of personal safety.

For this study, we were interested in exploring the extent of progress toward gender equality in active travel. We were specifically interested in understand the experiences of women using public transport, cycling and walking in an urban setting.

The literature review provided an opportunity to reflect and review what we know about women and men's mobility and travel patterns, while also identifying any gaps in evidence or knowledge. Secondly, our primary research focussed on exploring the experiences of women living, working and travelling in Glasgow in the UK. As Scotland's most populous city, it is perceived as a sprawling, post-industrial city with a contentious history of regeneration, at the same time the city has bold ambition to improve the urban realm and enable more people to walk and cycle.

1.1 Women's current social, cultural and economic position

There is consensus that gender is significant aspect of all cultural, social, political and economic spheres. As part of that construct, women continue to face a number of systemic barriers that underpin their experience and interaction with transport systems and public space more broadly. This includes areas such as pay and employment, representation in public life, and differences in health. These factors all combine to shape a woman's individual active travel choices, and will either limit those choices, or enable them.

Pay and employment

In 2016, YouGov identified the UK's gender pay gap as just over 18%. Close The Gap (2017) assess the gender pay gap in Scotland as 14.9% when comparing men and women's overall hourly rate.

A number of issues have been identified as contributing to the gender pay gap. These include occupational segregation (where men and women do different types and levels of work), lack of flexible working opportunities, and discrimination in pay and grading structures (Close the Gap, 2017).

Representation of women in senior decision-making roles in public life

The representation of women in the Scottish Parliament is 35% while less than 29% of local government councillors are women. In terms of senior positions within the public sector, transport has the lowest percentage representation of women with only 6.25% (Engender, 2017) compared to other public bodies.

Health and well being

There are differences between men and women in exposure to health risk factors or vulnerability to those factors; poverty, household-level investment in nutrition, care and education; access to and use of health services; experiences in health-care settings; and social impacts of ill-health (WHO, 2015).

Harassment and Sexual assault in public spaces

In 2016, research for the charity End Violence Against Women found that two-thirds of British women have received unwanted sexual attention (e.g. wolf whistling, sexual comments, staring or exposure) or felt unsafe in public. This compares to only 8% and 45% of men respectively. A third of women (35%) have received unwanted physical contact of a sexual nature when in public compared to 9% of men (YouGov survey for End Violence Towards Women, 2016).

The socioeconomic differences between women and men results in a different set of outcomes for women compared to men. The decision to travel by bike, at night, on a bus, by car, with children or walk starts before a women steps out of her house or flat.

2 Our methodological approach

There were two separate studies running concurrently.

1. Literature review: Gender and Active Travel

The literature review was commissioned as part of a wider Research Programme for 2017 to better understand the ways in which the current active travel agenda links with concerns around equality and diversity, in particular looking at gender as a key characteristic that can affect how and why people travel.

- We reviewed academic literature on women and men's mobility and transport patterns, to explore what is already known about gender and active travel. We also reviewed our own evidence drawn from data collected as part of monitoring and evaluation of active travel interventions.
- We identify the gaps in our current knowledge and understanding, which in turn will inform the next steps.
- We examined key active travel policies in Scotland, again as a means of identifying opportunities to promote gender equalities in active travel.
- We reviewed major active travel interventions in Scotland, as a means of identifying opportunities to deal with issues relating to gender and active travel.

2. Research study that focussed on the travel choices of women in Glasgow, UK

The primary purpose of this research was to explore women's motivations and barriers in relation to cycling and walking in Glasgow. Glasgow was chosen as a study site as the City recently announced their city-wide strategy to promote cycling and walking. Secondly, it had successfully completed the South West City Way segregated cycle route and was the recipient of the first Community Links Plus funding in 2017 to complete the South City Way cycle route. In combination, this presented the opportunity to explore the perceptions of women in Glasgow, with a view to repeating the study in a few years to enrich our understanding of the effects of investment in Glasgow's active travel infrastructure.

A mixed methods approach was employed to study women's transport experiences in Glasgow. This included:

- Review of secondary data collected as part of the Glasgow Household Travel Behaviour Survey
- Qualitative: using in-depth telephone interviews and focus group interviews.
- Quantitative: online questionnaire survey.

Glasgow Household Travel Behaviour Survey

In 2016 Sustrans commissioned a city-wide household travel behaviour survey in Glasgow to understand travel patterns, to explore attitudes and barriers to travelling by different modes, and to understand the demographics of mode choice and journey types.

The survey was conducted from the 9th May till the 6th June 2016. A quota sample of 1,100 residents were surveyed and also asked to complete a travel diary. We received 896 completed diaries. For this study responses were disaggregated according to gender to explore women's travel behaviour and the differences, if any, between men and women.

Online Questionnaire Survey

The survey was sent out to 28 workplaces in Glasgow, randomly selected on a map within the Glasgow area. Some workplaces were purposefully targeted to capture women as users and employees, for example the Bike Station Glasgow and Glasgow Women's Library. Only respondents who identified as women and lived in the Glasgow area were asked to complete the survey. We received 800 responses to the survey (n=800).

Qualitative data collection

In-depth telephone interviews and focus group interviews

In-depth interviews and focus groups were designed to fulfil a core purpose of this study which was to explore the barriers and motivators, specific to women, to cycling and walking in Glasgow. Additionally, women were prompted to discuss their experiences, their perceptions of safety when cycling and walking and any general perceptions on cycling and walking in Glasgow.

To eliminate observer bias, an external research agency was used to recruit participants and facilitate 6 in-depth telephone interviews and 4 focus groups (with 8-10 participants each). Women were recruited from different age and income groups. In addition cyclists and non-cyclists were recruited. One of the focus group interviews was conducted with female cyclists only. A shopping voucher was given to each participant as a thank you for participating.

Telephone interviews lasted between 25 and 45 minutes, while the focus groups lasted between 1 hour and 1 and a half hours. Topic guides for the in-depth interviews and focus groups were provided to the external agency.

Analytical approach

All focus group and interview recordings were transcribed verbatim. The subsequent transcriptions were anonymised and checked for accuracy. Individual copies of transcripts were created to allow evaluators to independently identify themes, prior to regrouping to compare notes. Thematic content analysis was applied using a combination of deductive and inductive approaches, whereby initial themes in the qualitative data were identified using the topic guides, with some interpretation and contextualisation of the issues surrounding key themes. All quotes included in this report were taken from the focus groups and in-depth telephone interviews unless otherwise stated.

Limitations in our approach

The study in Glasgow is a qualitative study and is not representative of the population of women in Glasgow. However, it is a rich data set that explores the transport and mobility experiences of women.

Terminology: Gender

A limitation of this paper is that it draws on literature and studies that have used binary disaggregated gender data – broadly capturing two categories female and male. People who identify as non-binary will likely not be included in the data sets used for this study, and potentially transgender people. For the research study in Glasgow, we invited people who identified as women to participate to ensure we were inclusive of transgender women.

We are currently reviewing our methodological practice, our analysis and reporting to be more gender inclusive. This includes producing specific guidance for evaluating the benefits of active travel on capturing demographic data on gender identity and sexual orientation, in keeping with the new General Data Protection Regulations.

Intersectionality

Acknowledging the way in which different characteristics intersect is key to understanding how different people experience the world. However, “progress has been somewhat uneven in attempts to take on board the notion that an adequate representation of gender inequalities must simultaneously include racial, class, ethnic and other differences” (Scott, 2010).

A recent paper titled ‘An Intersectional Feminist Perspective of Cycling in London’, Lam (2016) highlights the common perception of race, class, ability and gender as independent demographic variables in both academic literature and policy documents in the transport sector. Indeed the way in which these characteristics intersect to mediate how a person moves around a city are still relatively underexplored.

As such, this study considers gender as its main focus, but it will seek to return to some of the wider intersecting characteristics that compound to influence how women and men experience mobility and make choices about active travel.

3 Findings

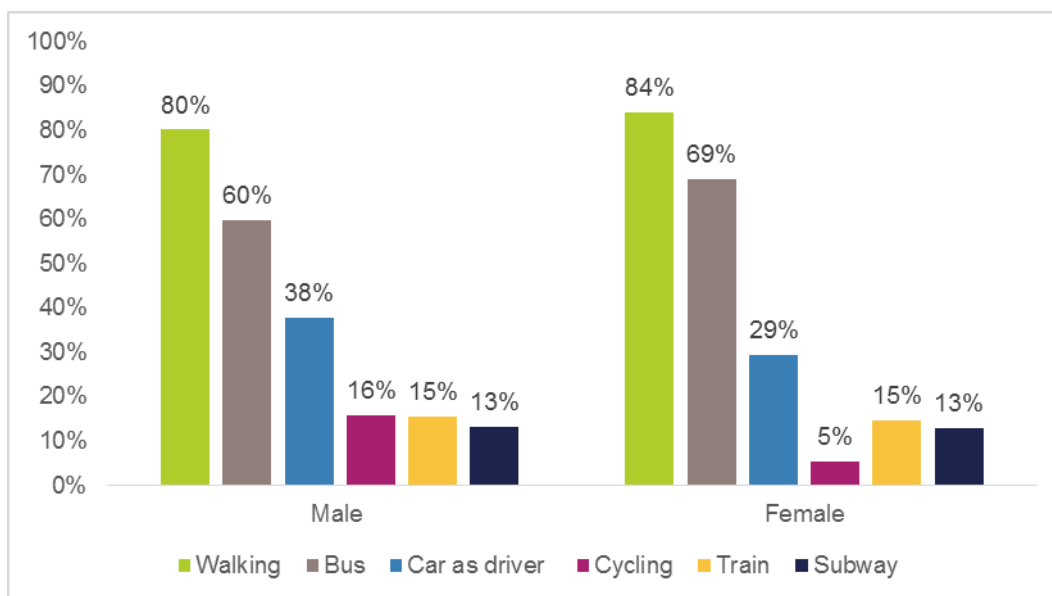
Men cycle more than women

Cyclists in the UK are predominantly male. In Scotland, 4% of men and 2% women cycle 1-2 times a week as a means of transport; and 5% of men and 2% of women cycle 1-2 times a week just for pleasure or to keep fit (Transport Scotland, 2015: cited in Cycling UK, 2017).

Although this bias towards men cycling is seen in all data sources analysed, it is most evident on the national cycle network (NCN) where our 2013 surveys found that 74% of cyclists on the network were male (Sustrans, 2015).

Data taken from the Glasgow Travel Behaviour survey (total respondents n=1,100 Glasgow residents) demonstrate that the most popular form of transport in Glasgow is walking (Chart 4.1), but a slightly higher proportion of women walk (84%) than men in Glasgow (80%). Cycling is the least popular form of travel for women in Glasgow, and men (16%) are three times as likely to cycle compared to women (5%). This is a substantial gap that suggests more than just the geography or environmental determinants that influence travel choices.

Chart 3-1 Women and men’s most common transport modes for travel around Glasgow in the last month



It is clear that there is a difference in the levels of cycling amongst women and men. Other characteristics that impact on a person’s likelihood to cycle include:

- **Ethnicity:** While UK ethnicity is predominantly white (86% England and Wales, 96% Scotland), results from the NCN 2013 survey show that there is even less diversification in the ethnicity of cyclists: 98.5% of cyclists on the NCN (UK-wide) identified themselves as white (Sustrans, 2015).
- **Age:** UK cyclists are disproportionately aged between 35 and 64 years old. Results from the NCN 2012 survey show that 54% of cyclists on the NCN are in this age bracket, despite accounting for just 27% of the UK population (Sustrans, 2015).
- **Ability:** Wiman and Sandhu (2004) categorised barriers to those with poorer ability levels as physical, structural, lack of assistance and psychological (fear of personal safety). More recently,

research has shown the situation is still inadequate (Jolly, Priestley and Matthews, 2006; Barnes, 2010)

- Income: In Britain as a whole, the proportion of people cycling increases with household income (British Social Attitudes Survey: Cited in Cycling UK, 2017). In Scotland, however, those who earn under £20k are more like to cycle to work than those whose income falls into higher brackets spanning £20k to £40k+ (3% compared to 2%, respectively) (Scottish Travel Survey: Cited in Cycling UK, 2017).

Women and men's journey patterns are different

Much of the existing literature that considers active travel focuses on how men and women's journey patterns are different, compounded by the different roles and responsibilities of women and men in society. Regardless of transport choice, the following differences were highlighted in the literature:

- Women make more multi-stop trips than men, in line with care and domestic responsibilities (Barker, 2009)
- Men make more journeys at peak times, while women make more off-peak journeys (Hine and Mitchell, 2001)
- Radial journeys for commuting purposes are more commonly conducted by men, while women are more likely to make multi-stop trips, often by different modes (Greed, 2016)
- Women are increasingly balancing journeys for work and childcare (Fawcett Society, 2016).
- Women make shorter trips than men (Hine and Mitchell, 2001)
- Women make more journeys using public transport, with children and otherwise "encumbered" (Hine and Mitchell, 2001)

These trends do not apply to every woman or every man. There are a number of characteristics such as age, ability and income that are likely to affect the types of journeys that men and women make. Hine and Mitchell (2001) draw attention to variations in travel patterns between different groups within the same gender. For instance, women in employment may make very different journey types to those not in employment; and of the women in employment, the type of employment undertaken will itself result in different patterns of travel.

Our study in Glasgow explored a range of issues that prevented women from choosing to cycle or walk, and explored what motivated women to walk or cycle. Many of the issues explored could be equally applied to men as well as women. There are many environmental determinants of active travel including topography, the weather and distance of travel, that might be considered universal, but why do fewer women cycle compared to men, and what drives the observed differences in journey patterns as a whole?

3.2 What stops women from choosing to walk or cycle?

3.2.1 Time available and complicated routines (trip-chaining)

It is clear that people's lives are becoming more and more complex, balancing work, leisure and domestic responsibilities. Although, the political and legislative framework in the UK has progressed to ensure women have the same access to opportunities afforded to men, there are still clear gender divisions in paid work, domestic and caring responsibilities and leisure time.

Women's work force participation has increased by 17% in the last 46 years, with the majority of mothers (74%) in employment (ONS, 2017; ONS, 2016; ONS, 2015). However, the gendered division of household and care-giving tasks remains unbalanced. This balancing of paid work alongside unpaid work within the household, and also unpaid work within the wider community, is frequently

referred to as the 'triple work burden' (United Nations Division for the Advancement of Women, 2005). This triple work burden can impact on the way in which women need to move around the city, and the lack of adequate transport options to meet these needs can often have further negative impacts on the time spent travelling to undertake this work. It is clear socioeconomic differences mediated by gender are likely to restrict the types of journeys and travel choices available to women throughout their life-course.

The evidence in existing literature espouses that the combination of lack of time, travelling with children and a need to take multiple, non-direct journeys everyday (trip-chaining) act as specific barriers for women wanting to choose to cycle or walk more.

- The difficulty of fitting walking and cycling into complex household routines (especially with young children) (Pooley, 2011)
- The timing and routes of services largely prioritise the needs of those travelling during peak hours and are often inconvenient when needing to do multiple stops (Hine and Mitchell, 2001)
- The gendered division of labour, with women frequently taking on care and domestic tasks in addition to either full or part time work (Natcen, 2012), means that transport options can be more limited for these 'non-standard' journeys' (Jain et al., 2011).

Recent changes in UK legislation on Maternity Leave to Shared Parental Leave enables eligible mothers, fathers, partners and adopters to choose how to share time off work after their child is born or placed for adoption. However, the uptake to split this equitably between a mother and her partner has been low. The reasons discussed in the literature include, workplace culture, discrepancies and differences in paid entitlement between the mother and her partner, making it economically more viable for a mother to continue to stay off work.

In addition, and perhaps what is less clear in the literature, are the changing travel patterns correlating to different life stages of women and men. For example, how does active travel interact at different stages in women and men's lives; attending school, attending college or university, first job, starting a family, retiring etc. and in what ways does this impact on our long term active travel habit? Secondly, the intersection of these stages with age, income, ability and ethnicity in conjunction with gender is underexplored.

In Glasgow our study found that when choosing their mode of transport, women considered the time the journey will take in both directions to be a key determinant of whether active modes will be chosen over other modes of transport. Some women do not walk or cycle simply because they perceive their working pattern will not permit them to. When asked in the survey what stops you from walking more, the second top answer with 20% of women answered 'because it takes too long'.

In addition, 70% of all the women who were surveyed who had at least one child, agreed that having children strongly influence how they travelled. A further 39% of these respondents agreed that they walked and cycled less because they have children.

"I don't use my bike at all, it's sitting in the garage, still new. Now that I've got the kids, in the morning, getting up, and it's a case of getting them ready, dropping them off and then going to work, so I'm having to use the car." (focus group interviewee, Glasgow)

"I've got two children to drop off at the child-minders, I've got to get shopping on the way home." (focus group interviewee, Glasgow)

As well as convenience, many women agreed that they tend to be the ones who carry out more shorter 'task' focused trips during the day.

"I think that happens in a lot of households. That the women have to multitask through the day, so the bike just isn't a feasible thing that fits in with all the other things to do." (focus group interviewee, Glasgow)

As Hine and Mitchell (2001), Pooley (2011) and others have discussed, trip-chaining is a universal travel pattern for women, and it acts as a specific barrier for women who would like to cycle and walk as part of their everyday journey. An experience echoed by women living in Glasgow.

Secondly, for many women their journeys start before they have left the house. For many women, personal safety is a barrier that contributes to their mobility especially travelling at night.

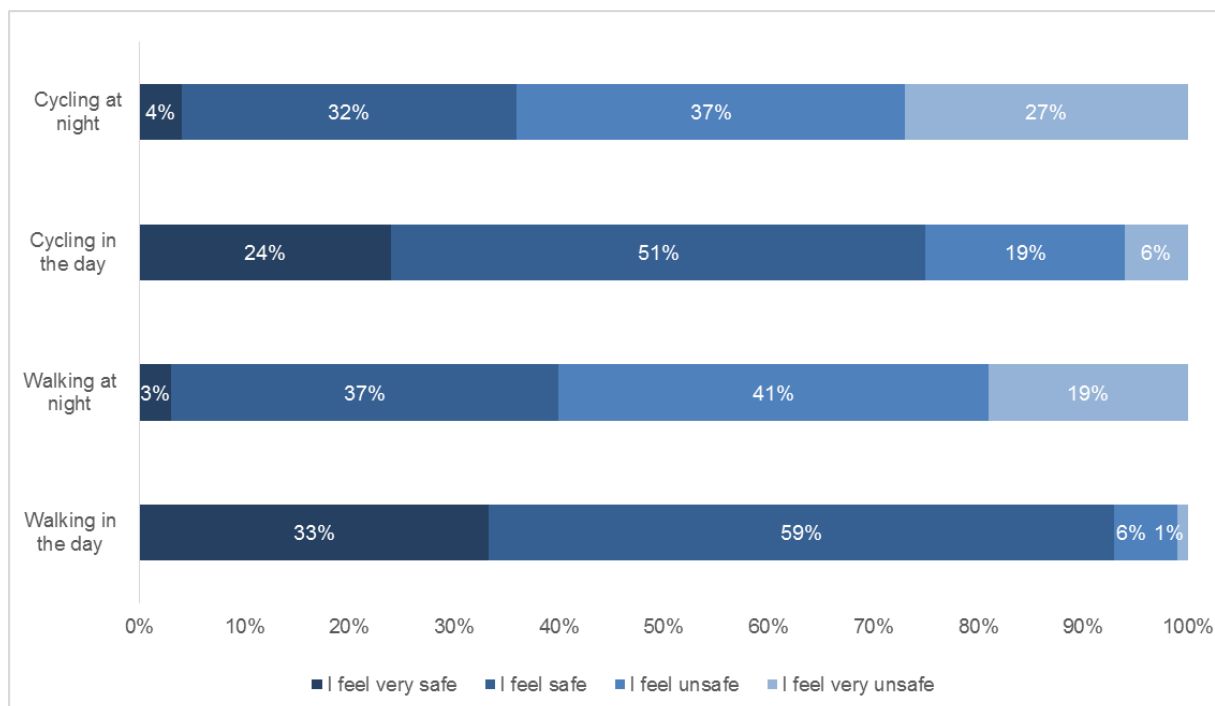
3.2.2 Personal Safety and Street Harassment

There are many studies that have exposed the disproportionate levels of sexual harassment and harassment that women experience in public spaces compared to men. This is particularly acute when women are walking, cycling or using public transport around a city, and women often report changing their behaviour or route choice to avoid certain streets or areas in a city. Our literature review included statistics that validated the fear of crime that is disproportionately experienced by women.

Concerns around physical and sexual assault are an additional barrier that women experience (Hine and Mitchell, 2001; Damant-Sirois & El-Geneidy, 2015; Heinen, van Wee, & Maat, 2010). In Glasgow, women stated that concerns about personal safety was one of the biggest deterrents to cycling and walking after dark in the city. Although these concerns were not confined to travelling at night.

Chart 4-2 shows the differences between active travel during the day and night. 64% of cyclist survey respondents and 60% of pedestrian respondents feel unsafe or very unsafe from threats related to crime or anti-social behaviour, when travelling at night in Glasgow. This compares to 25% and 7% respectively for cycling and walking during the day.

Chart 3-2 Thinking about actively travelling in Glasgow, how safe from crime and antisocial behaviour do you feel during the day and at night?



Base: Cycling at night respondents n=531, cycling in the day respondents n=547, Walking at night respondents n=685, Walking in the day respondents n=695

This becomes compounded for women who are shift workers or have work patterns that do not follow a traditional nine-to-five, Monday-Friday pattern.

“I couldn’t cycle to and from night shifts... the time of night, just feel uneasy...It is a bit frightening when you’re out by yourself when you’re on a bike.” (focus group interviewee, Glasgow)

“Because of my shift-pattern, doing late shifts, cycling back after working on a late-shift, it was just too tiring. Going to a late-shift, some of the roads you have to go down, just a bit dark and you feel a bit unsafe down some back-roads.” (focus group interviewee, Glasgow)

One respondent reflected that women were more likely to be attacked compared to men, or have to change their behavior suggesting women are aware of the limitations placed on their movement because of their gender. A sentiment repeated in many studies on personal safety, public space and transport.

“...although it’s a stereotype, it is about safety because there’s been so many reports of women not feeling safe running or jogging at night. They won’t go walking at night. Same with the cycling, because we’re more prone to attacks than men. Men tend to not need as much protection or will not get preyed upon as much. So women never go running or jogging or you’re encouraged to take a rape whistle with you. That is not an encouragement for someone going walking alone.” (focus group interviewee, Glasgow)

*“I don’t like going out on my own when it’s dark .. I would much rather get my husband to take me down to the car at night to try and get a parking space closer. I feel quite vulnerable getting out and going onto the street.”
(focus group interviewee, Glasgow)*

Women also discussed the precautions they might take when travelling alone, such as choosing more populated routes, using well-lit areas or travelling with friends and family. In many respects, the strategies adopted by women to mitigate against feeling that they are at risk or vulnerable are in turn curtailing their independence and autonomy to travel on their own. This experience expressed by the women in the Glasgow study is a global experience reported by women in cities throughout the world. In some instances the policy and practice response is to set up women-only public travel services e.g. women-only train compartments. For many, this is a contentious issue that on the one hand provides safe spaces, but on the other restricts women’s agency and condones men’s behavior.¹

3.2.3 Are transport costs potentially too expensive for women?

The cost of public transport was also identified by some of the literature (Hine and Mitchell, 2001) as an issue that affects women disproportionately to men. This is symptom of wider income inequality that is compounded by women’s economic status in society:

- A higher proportion of women are living in poverty in the UK, that includes in-work poverty. (REF)
- The earning differences between women and men i.e. the gender pay gap in the UK was 18% in 2016
- Women make up three-quarters of part-time workers in Scotland, which is often in low paid occupations.

The women in our study in Glasgow felt that they could save a lot of money by swapping their car or public transport journeys for active travel. Many of the participants commented that public transport and parking in Glasgow is too costly, and that by choosing to travel actively they could save money on travel expenses.

“...it’s a really simple way of making sure you can get from A to B, but with no costs.” (focus group interviewee, Glasgow)

“That’s got to have a big impact on people’s lives, the cost of petrol...really expensive, and parking, which is also really expensive.” (focus group interviewee, Glasgow)

“I never now take the car into Glasgow because of parking and the cost” (focus group interviewee, Glasgow)

¹ See for example CAPSUT Webinar series 19. Gender and Urban Transport accessed 18.1.2018
<http://capsut.org/resources/sutp-webinar/>

Comparisons were made between start-up and maintenance costs of cycling, driving and public transport.

“...you’ve only got one initial outlay in buying the bike. Then you maybe want to get it serviced every six months or a year, depending on how much you use it, but then that’s never going to cost as much as it would to get your car MOT’d and serviced and fixed should it need to be repaired...you’re looking at maybe £45 a month for a bus pass or something so you’re paying £45 every six months for a service on your bike so in comparison...and you can buy bikes fairly cheaply these days...there are a lot of options, especially if you’ve got your Cycle to Work scheme and the help of your employer so it doesn’t need to be a massive outlay at first.” (focus group interviewee, Glasgow)

“I think it would encourage a lot of people as well just, like, because it doesn’t use up petrol, people will feel that they don’t need driving lessons, because they’re quite expensive. So, if you just choose the bike over that then you wouldn’t really need to put as much money into it. It’s a much cheaper way.” (focus group interviewee, Glasgow)

The exception to the rule was women over the age of 60, who are entitled to a free bus pass, which is a Scotland-wide policy. However, the perception was still evident that cycling is a money saver.

“I have a bus pass so in my respect it doesn’t cost me anything to go on the bus anyway, but certainly for people a lot younger than me it would be a big money-saver because you’ve got the bike, there’s very little maintenance, the odd tyre puncture has to be fixed but I’ve had this bike for about 10 years now and I’ve never had a puncture...So, I mean, if I was paying bus fares for all the places I had to go it would cost a fortune...”(focus group interviewee, Glasgow)

At the same time, there were conflicting opinions on how class and economic status intersected with perceptions of cyclists and the likelihood of cycling more. It was either a forced choice of transport due to poverty or cycling was viewed a middle-class endeavor as bikes were too expensive, and therefore unattainable.

“[on perception of cyclists] Often as a nuisance. Often as a poor person who can’t afford a car... They assume you’re on a bike because you can’t afford to be on anything else, that’s usually what I see, and a nuisance.” (focus group interviewee, Glasgow)

“I don’t think people see it as you’re poor if you’ve got a bike. I think they see it as more of a middle-class thing, having a bike, because bikes are expensive as well. They can’t always afford bikes for their children.” (focus group interviewee, Glasgow)

Perceptions of class and income and propensity to cycle and whether it is unique to Glasgow is worth exploring further. This will help understand whether the cost of starting to cycle is too high and is enough to prevent women in low income households in Glasgow from cycling, regardless of all other barriers.

3.2.4 Image and constructions of femininity in public space.

Finally, a barrier discussed amongst the women who participated in the study picked up on the issue of perception, and image. The image of a cyclist and the image of a woman cycling in public, were highlighted.

Women often mentioned how physical appearance and expectation to look a certain way upon arrival at their destination often deterred them from travelling by bike or on foot. This was most commonly mentioned in relation to cycling to work.

"...once you put your hair and makeup and everything all done you don't really want to then sit on a bike and then [get] yourself all flustered up again... I think when you go to your work you want to make yourself look presentable and I think going on a bike, kind of, you start all over again. "
(Focus group interviewee, Glasgow)

"I know it's quite shallow but that would be one of the main reasons why I wouldn't choose to pick it, to be honest." (Focus group interviewee, Glasgow)

The lack of work place facilities was cited as a deterrent to cycling to work, but at the same time there were concerns this was an additional inconvenience for women cycling to work.

"I [would] have to go in there and get changed out of my cycle gear, get a shower, do my hair, put my make-up on. To me, it's just like, that's too much palaver in the morning" (Focus Group Interviewee, Glasgow).

As well as the expectations that on a journey you are dressed for your destination, there were also observations about cycling challenging notions of femininity.

"I think it's maybe not seen as very feminine sometimes to cycle." (Focus group interviewee, Glasgow)

"Sometimes I see women on bikes and they're kind of you know butch looking." (Focus group interviewee, Glasgow)

Image, personal appearance and constructs of femininity are likely to be a deterrent for women and it is often cited in countries with lower levels of cycling. In Denmark, Germany and the Netherlands where there are higher levels of cycling in their major cities, images of cycling are concurrent with travelling with children, travelling in work clothes and essentially 'normalised'. These cities also have a strategic network of dedicated cycling infrastructure.

3.2.5 What about perceptions of road safety?

A study on the barriers to walking and cycling, conducted in 2011, revealed that there are a number of barriers to walking and cycling that are experienced by both men and women (Pooley, 2011). These include risk of being exposed to wet or windy weather (particularly cited as a barrier to walking) and

poor infrastructure which impacts on road safety (cited by 80% of respondents in reference to barriers to cycling).

Many of these universal barriers were cited by women who participated in our study in Glasgow. This included concerns over air quality and pollution levels, the environment, the perception that cycling is 'not normal' and people would not consider cycling as a mode of transport, as well as road safety.

Our literature review found evidence that some women are concerned about their safety when using off-road cycle routes or cycling in deserted areas (Vijayaraghavan, 2009), while one qualitative study found that men tended to be more assertive or opportunistic when cycling on roads, while women were more likely to avoid traffic (Christmas et al, 2010). Those who opt for a strategy of avoiding traffic may choose not to cycle at all if there are no appropriate traffic-free routes, which in turn may affect rates of cycling in certain demographics (Christmas et al, 2010).

Road safety is often the issue that drives the desire to prefer segregated routes, or a better walking environment. Women and men are just as likely to cite road safety as barrier to cycling and walking, and as Aldred (2015) noted no one group preferred an integrated route embedded in traffic. A recent survey we conducted with parents and carers showed that road safety was parents and carers number one concern when considering whether to let their children cycle or walk to school.²

Many of the women we spoke to in Glasgow perceived the roads as busy and chaotic, making them reluctant to cycle on the roads among the traffic, or walk around the city.

"Busy roads can make cycling in to town overwhelming and unsafe." (focus group interview, Glasgow)

"There's too little pleasure in it because of the noise and the traffic. They're all racing. They're all going well over the limit. I'm a driver, and I know they're going much faster than 30. There's a lot of pleasure taken away from that nice walk up to the nursery." (focus group interview, Glasgow)

However, there is evidence that road safety concerns and risk to injury disproportionality impacts on women. Aldred (2015) suggested that road safety is a gendered issue when it comes to cycling. In her 'near misses' research she found that women reported twice as many incidents of 'frightening near misses' on the road compared to men. We also know that women and men's journey patterns are different, and women are more likely to be travelling with children, taking a non-direct route, trip-chaining, all of which will slow you down. Therefore, unless women change their cycling behaviour to be faster, take a direct route, and avoid travelling with children then UK roads will continue to be disproportionately unsafe space for female cyclists.

To put this another way, our solutions to ensure safer routes for cyclists and a better environment for walking could be the leveller that ensures women are not missing out on active travel as a convenient travel choice. Infrastructure that is planned for trip-chaining, travelling with children and perhaps cross-city routes could potentially help ensure the gap between the levels of women and men cycling is closed, and importantly improve the overall everyday cycling levels in our cities and towns.

² Survey conducted with Scottish Parent Teacher Council in Scotland reports and blog post available here: <https://www.sustrans.org.uk/news/safety-fears-cited-main-reason-why-more-children-dont-travel-actively-school>

3.3 What motivates women to walk and cycle?

There is consensus that there are many benefits to cycling and walking, that are commonly cited in studies conducted in school, in workplaces and in the broader population (for a recent example see the Scottish Government's study in 2017 on Tackling the School Run). These benefits include better individual health and wellbeing outcomes, improved social connectedness and improvements to the local environment.

Our study in Glasgow illustrated that women are aware of the benefits of active travel, and in particular cycling and walking was perceived as a cheaper alternative to driving or using public transport. Some of these motivations are more likely to be universal rather than specific gender preferences.

Health & Fitness

There was an acute awareness that the decision to travel actively rather than travel by car or public transport can have a positive impact on your health. In addition, it was viewed as an easy way to incorporate regular exercise into your daily routine.

"For me it's health. That's the main reason I do it, it's the exercise. I'm in an office all day, so I'm sitting down for eight or nine hours a day and sometimes you get up and your legs are stiff. You're creaking and everything just because you haven't moved. Having the bike there is better than walking because you feel you're doing more. You're pushing yourself further and you're getting more exercise than if you're just taking a stroll. So that's the incentive for me." (focus group interview, Glasgow)

"It's a quick way of making sure that I do something for the day exercise-wise. It's so simple." (focus group interview, Glasgow)

Active travel was viewed as a convenient way to incorporate regular exercise, especially if you have multiple demands on your time. Therefore, although both women and men are likely motivated by fitness and health benefits, there are reported gender differences in health outcomes (Scottish Government, 2016b).

Women are less likely to meet the recommended levels of physical activity; in 2016, 69% of men and 59% of women met the recommended levels of physical activity, a gap of 10 percentage points. At the same time women are constrained by time and find it inconvenient to travel more actively. As some women observed in our study, cycling is a way to embed daily exercise, and it is likely that enabling more women to cycle as part of their everyday routine, could help improve physical activity levels for women.

"It's a quick way of making sure that I do something for the day exercise-wise." (focus group interview, Glasgow)

"It's very quick, it's really quick and I enjoy it. I just enjoy it, it reminds me of being a child when you have a bike and you can go and enjoy it" (focus group interview, Glasgow)

Mental Health and Wellbeing

As well as physical health, women were aware of the benefits to their mental health and well-being. Walking in particular was felt to be beneficial.

"I just like walking. It gives me time, when I'm going to work or coming home from work, to just process things. Coming home, and getting all that out of my system, so when I'm home, I've thought about all the work stuff and it's out of my head." (focus group interview, Glasgow)

"I just find it more relaxing. It's time where I get no interruptions. There are no phones going, there's no telly going, there's nobody around to ask me questions and interrupt me, so, it's good to empty my mind." (focus group interview, Glasgow)

"I think it's just the exercise and being out in the fresh air, not being stuck in a car or on a bus. Being out in the fresh air and, I don't know. Just the wind in my face or even the rain in my face" (focus group interview, Glasgow)

Social Connections

Cycling and walking were both thought to be a great way to meet people and make friends and there was a feeling of being part of a wider community.

"I think there can be that kind of social aspect just because obviously Glasgow is quite a friendly city. So you'll be somewhere and someone you don't know will start talking to you. Like I've got a dog, you see other dog walkers and you start talking to them, because your dogs go up to each other. So there can be that," (focus group interview, Glasgow)

"It's quite a sociable thing as well, and I meet people...I just meet people in the West End that I know and have a chat. Quite a few of my friends have got bikes as well, so that's quite nice." (focus group interview, Glasgow)

"Yes there's like camaraderie amongst walkers, isn't there? If you go out every morning and you see somebody in the street, they'll always nod to you," (focus group interview, Glasgow)

Pollution and Air Quality

Environmental concerns were less of a factor compared to factors relating to health, wellbeing and economic benefits. Less than 10% of online survey respondents (base n=800) reported that concerns about the environment would motivate them to walk or cycle more.

However, for some women, regularly choosing to travel actively instead of using the car was seen as a proactive step to reduce their carbon footprint and have a more environmentally friendly lifestyle.

"I am really keen to reduce my carbon footprint, I think it's really important. I would love to not have to use a car. I would love to see the amount of cars on the roads reduced." (focus group interview, Glasgow)

"It's so simple. Also, just to be a bit greener as well. I think it's important." (focus group interview, Glasgow)

"There are households that have four cars per house. [area place name] is a perfect example, as I was saying, the roads here for parking, there are absolutely loads, and to me that's not a good proactive way of making Glasgow greener at all. It's mad. So, I think the more people that cycle the better, just for the city." (focus group interview, Glasgow)

4 What next? Research, practice and policy responses to tackling gender equality in active travel

4.1 Infrastructure: route preference and road safety

Women were acutely aware of the infrastructure and how it limits their propensity to walk or cycle, but recognised that it is hopefully changing.

“Cycle lanes end too quickly. They don’t last very long, and you’re back on the road again. I think they’re great, because there are segregated cycle paths. They’re safe, but the fact that they make them run for half a mile is pointless.” (focus group interviewee, Glasgow)

“Glasgow isn’t set up for cycling. The city is not, I don’t think, set up for cycling” (focus group interviewee, Glasgow)

“They have invested a huge amount but you are living with an existing infrastructure that we’re maybe not geared up for.” (focus group interviewee, Glasgow)

Many of the non-cyclist women also agreed that Glasgow lacked suitable walking infrastructure that stopped them walking more.

“I think I probably walk everywhere. That’s my main transport. I just wish that Glasgow was more pedestrianised, because I feel like pedestrians are the last people that they think of. There’s always cars, and it’s just always waiting at a traffic-light. I feel they don’t consider you at all...”(focus group interviewee, Glasgow)

However, the narrative that has traditionally shaped policy and intervention responses to date has often concentrated on providing space for women to change their travel behaviour by improving their confidence and skills to ultimately cycle in ‘busy, chaotic, traffic’. This too was echoed in our study in Glasgow where women reflected not being confident cyclists, a desire to learn new skills and a need for cycling proficiency training. This perception was articulated as something that is necessary to be able to travel on UK roads.

“Men have got more confidence on the road, less consideration, maybe, for other people” (focus group interviewee, Glasgow)

However, it is likely that women (and men) will feel more confident by default, in the knowledge that they will not be a lone cyclist amongst, busy, unpredictable vehicle traffic, and perhaps our analysis to date has failed women by placing the burden of responsibility firmly with them. This is compounded by the underrepresentation of women in decision-making processes, where women’s experiences and voices are often excluded or marginalised, and at best gender disaggregated data is rarely analysed.

As Aldred (2015) argued that regardless of how confident a woman feels, the risk of an incident is potentially greater for women. Therefore if we take steps to alleviate the risks by providing safer, high quality infrastructure e.g. segregated cycle routes, then women will feel more confident and safer on the roads and this would not be at the expense of men’s safety.

The question of whether route preference is mediated by gender is still somewhat poorly understood. Of some forty studies analysed as part of a systematic review of literature on gender and cycling (Aldred et al., 2017), 23 (57.5%) said women expressed stronger preferences for segregation from motor vehicles than did men. However, gender differences were clearer among studies in low-cycling

countries, and while preferences for separated infrastructure were stronger in some groups than in others, no group preferred integration with motor traffic (Aldred et al., 2017).

We are starting to observe data that might help answer whether segregated cycle routes, or indeed good quality infrastructure will reduce the gender gap in cycling levels. Evidence from our Community Links Programme suggests high quality infrastructure, that links people and places is closing the gap between women and men’s cycling levels. This early indication will need to be monitored over a longer period of time but it shows an increase in the proportion of women cycling over time, with women representing 17.6% of all cyclists before implementation, increasing to 25.1% after the scheme has been in place for a number of years. Table 5-1 shows the proportion of female usage remains consistent overall for all users. For walking it is more or less consistent.

Table 4-1 : The %s of cyclists, pedestrians and all route users, across monitored Community Links schemes, that are female, at pre, post and longer term post scheme stages

Route user type	Pre- scheme	Post- scheme	Longer term post- scheme
% of cyclists that are female	17.6%	19.4%	25.1%
% of pedestrians that are female	47.5%	51.8%	48.4%
% of all users that are female	44.7%	46.7%	45.4%

Note: Across 19 schemes with matched pre and post data, there are an estimated 42,553 additional annual female cycling trips being done after scheme implementation compared to prior (21,687 per year pre scheme, 64,240 per year post scheme, an 196.21% increase). The methodological parameters to consider is that these figures have been extrapolated and estimated. The method applied was to take the usage estimate from each site (extrapolated) and apply the proportions of the surveys undertaken by gender (estimated). The proportional change is based on 17 sites. The total change in usage from pre to post is based on 19 sites.

4.2 Active Travel Policy in Scotland

4.2.1 National Policy

A Long-Term Vision for Active Travel in Scotland 2030

In 2014, Transport Scotland published its Long-Term Vision for Active Travel in Scotland 2030. This presents a vision of what Scotland would look like in 2030 if more people choose active travel for shorter, everyday journeys and walking and cycling is considered the norm (Transport Scotland, 2014).

The vision covers a number of different areas including: infrastructure, maintenance, urban centres, transport integration, cultural and behaviour change, community ownership, planning, and leisure, sport and recreation. While the vision includes a key goal of reducing inequalities, the way(s) in which this will be achieved is not made explicit.

The vision lists a variety of journeys made by individuals, including school runs, journeys to work, the shops, and accessing wider services. However there is an opportunity to ensure that these different journey types are prioritised equally when designing interventions, and any patterns in the characteristics of people that make these different kinds of journeys, otherwise policy and practice will continue to have a disproportionate impact on women. We have an opportunity to further examine the evidence on gender inequalities and to monitor the effects of policy and practice.

4.2.2 Local Policy

Local Authority Active Travel Plans

The active travel plans that are currently available do not currently address gender inequalities in walking and cycling. Our review found that although Equality Impact Assessments (EQIAs) have been conducted in some cases, many fail to examine the way in which planned interventions could address the needs and barriers faced by people of diverse characteristics, and to look at both the potential negative and positive impacts of taking action on active travel.

There is a further opportunity to explore Active Travel Plans in more detail and to assess any gaps in evidence relating to gender disaggregated statistics, and more broadly whether assessments have due regard for the experiences of women living and working in our towns and cities. Potentially, there is the opportunity to work with Local Authorities and a range of stakeholders to develop guidance on how future plans may better promote equality in active travel

At both national and local levels, there is currently relatively little reference to issues of inclusion and diversity within transport policy and programmes. While equality impact assessments have been conducted as part of some local authorities' active travel plans, these have not necessarily resulted in meaningful attempts to address equality issues through the implementation of such plans.

As such there is significant scope to bring these policies in line with the varying needs and barriers to mobility faced by people of different gender, age, ethnicity, income and ability.

5 Conclusion: getting it right for women and men

Designing our cities to be more inclusive has stalled. Despite some progress, women continue to be constrained by a number of barriers that affect how they travel, and the experience of those journeys.

Women are aware of the benefits of active travel but a step change is required to ensure our cities are more inclusive of the needs of women. Our narrative must shift focus from expecting women to change their behaviour to ensuring practitioners embed a gender analysis in policy, planning and practice that considers the evidence and experiences of women. We need to consider women as users, women as suppliers of transport, and women as decision-makers in transport; with health and planning sectors combined, to ensure our cities reflect the diversity of needs.

Women as users of active travel transport

The evidence presented in this paper demonstrates that women's experience of transport and travel is different to men. Much of the existing literature that considers active travel focuses on how men and women's journey patterns are different, compounded by the different roles and responsibilities of women and men in society. We also found in our study in Glasgow that cycling is the least popular form of travel for women, and men (16%) are three times as likely to cycle compared to women (5%).

Although, there are commonalities in terms of barriers to active travel, such as environmental determinants e.g. weather, many barriers are specific to women. We found that women in our study echoed the findings in our literature review, where lack of time and complex schedules coupled with fears of personal safety compounded to prevent women from walking or cycling as part of their daily routine. In addition, women highlighted concerns over road safety, but rather than focussing on changing women's behaviour this paper discussed some interesting findings that suggest high quality infrastructure could alleviate many of the barriers women experience, and act as leveller in terms of active travel.

A well-used, defined cycle network that allows trip-chaining, and enables more women to cycle with children, will potentially improve perceptions of personal safety, will save women time and help embed physical activity into an everyday activity. Planning and in some cases prioritising trip-chaining, personal and road safety through infrastructure design is not only beneficial to women but does not compromise men's ability to walk and cycle.

Women's participation and representation in transportation policy processes

There are a number of concerns around the way infrastructure design prioritises different needs, resulting in a built environment that can facilitate some and inhibit others in their movement around a city or place.

While little UK-based literature exists specifically in the transport sector, Europe-wide research conducted over the past decade has shown that transportation as a sector is dominated by men. Most political committees and advisory boards have less than 15% female membership and none have equal representation (Transgen, 2007). Secondly, in terms of senior positions within the public sector, transport has the lowest percentage representation of women with only 6.25% (Engender, 2017) compared to other public bodies. There is strong evidence from many sectors that equal representation and diversity in decision-making bodies has positive impact on service design.³

The lack of evidence to show how women within the UK participate in the creation of transportation policy suggests that gender equality has slipped from the agenda, and requires a repositioning to ensure women's voices and agency are represented equally across the transport sector. Hasson and Polevoy (2011) review the literature surrounding this issue and highlight Sweden as being the gold standard for gender equality in the transportation sector. In establishing the Gender Equality Council

³ See for example debates on women in science, technology, engineering and mathematics

for Transport and IT in the 1990s, Sweden's national Government recognised the need for both women and men to influence the transport systems design, structure and administration. Further exploration of best practice for socially inclusive consultation processes is likely to be helpful to understand how this may be applied and incorporated into Scottish transport policy and planning processes.

Woman as suppliers of active travel/transport

There is little evidence presented in this paper that explores the relationship between women working in transport sectors at the point of use for example, as owners of bike-share schemes or mechanics, and how this affects women's attitudes towards active travel. Internationally, we have evidence that points to the impact of female bus drivers, women only taxi drivers and improved perceptions of women's personal safety. However, there is much debate in academia as to whether women-only services entrench a narrative that undermines women's agency, and fuel perceptions of fragility. However, it can be an effective intervention to curb sexual assault, and harassment in the short-term particularly on public transport.⁴

Recommendations

This research and study has revisited the question of gender and active travel, exploring the solutions to ensure women and men have equal opportunity to choose to cycle and walk in their city. Further work is required to particularly understand the impact of policy practice at national and local level on gender equality ensuring positive outcomes for women and men.

- Investigate the role of women within transport policy creation at both national and local levels, at all stages of design and delivery of the built environment.
- Explore Active Travel Plans that have been developed by local authorities in more detail and develop guidance on how future plans may better address inequalities in active travel.
- Identify entry points in national policy where it may be possible to draw more explicit links between gender and active travel, based on the issues identified in the literature (such as in A Long Term Vision for Active Travel in Scotland 2030)
- Evidence: continue to generate gender-disaggregated statistics, applying appropriate analysis to monitor the effects of infrastructure place-making on gender equality; identify gaps in evidence.

⁴ See for example CAPSUT Webinar series 19. Gender and Urban Transport accessed 18.1.2018
<http://capsut.org/resources/sutp-webinar/>

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