Exploring the impact of online focus group membership on responses: Insights from a study on gender and transport

Rich C. McIlroy and Katie McPeake

Transportation Research Group. University of Southampton

r.mcilroy@southampton.ac.uk

Abstract

Despite considerable attention in the academic domain, end-users of transport systems are rarely directly asked what they think of gender inequity in transport. Shedding light on this could inform education strategies to address such inequities. This research addresses this research gap, revealing how people think about differences in the way transport systems support (or do not support) the safe and comfortable mobility of men and women. It does so via the use of asynchronous online focus groups, to which 114 people contributed. The research also addresses questions around the impact of focus group gender composition on participants' responses, an issue not previously considered in online or asynchronous contexts. Results suggest there is broad acceptance of women's transport disadvantage, with men's views of women's experiences largely matching women's own reports. Women's views of men's experiences were less reflective of the male reality. Safety and security were commonly discussed; however, trip complexity and other constraints, driven by differences in care roles taken, were discussed less and therefore represent a potential avenue for education strategies. Group gender composition did impact upon responding, with several of the effects previously found in face-to-face focus group research also manifesting in the anonymous, online context.

Keywords: Asynchronous online focus groups; transport inequity; focus group gender composition; end-user perspectives

1. Introduction

There exists a very large and diverse body of literature on the differences between men and women's transportation-related perspectives, requirements, and habits. This topic is rarely, however, put directly to end-users. There are questions, therefore, around how transport gender inequity is viewed by people outside of activist or academic fields. A better understanding of this could inform interventions that address transport gender inequity, for example education strategies. The research below addresses this gap by directly asking people for their views on gender inequity in transport.

There are also questions around the extent to which focus group gender composition (i.e., single gender or mixed) influences the responses of participants. There has been a long-held perception that segmenting focus participants by their personal characteristics (e.g., socio-demographics, education, race, residential locations, gender, etc.) will facilitate more active and uninhibited discussion as participants have more in common with each other (compared to when participants are not segmented; Morgan, 1995). Although segmentation is now a well-established practice in the focus group literature, its benefits in the context of gender have been challenged (Hollander, 2004). This highlights the need for more research in this area specifically.

Research on the impact of focus group gender composition on participant responding is very limited; however, some examples can be found (Heary & Hennessy, 2002), with suggestions that women may be more open to talking about sensitive issues when in female only groups (Morgan, 1996). There has been no such work addressing this question in the context of online focus groups, where the greater level of anonymity afforded by the digital world might influence the propensity (or reluctance) to discuss gender-related issues. The research therefore specifically asked, do women in women only online focus groups discuss the same things as women in mixed-gender online focus groups? What about men? This is, of course, a limited view of gender, an important limitation that we acknowledge from the outset. The lack of significant participation from non-binary individuals precluded analysis that looked beyond the female/male binary gender distinction.

2. Literature review

2.1. Transport and gender equity

The importance of transport for social and economic sustainability is significant, to the extent that the United Nations has incorporated transport accessibility and equity into its sustainable development goals. Gender is a key dimension in this regard, and there is wide recognition that existing transport systems are not gender equitable (Parnell et al., 2022). Specifically, women are more likely to be inconvenienced and/or excluded, and their needs and views are not sufficiently incorporated into transport decision making and planning (De Madariaga, 2013; Read et al., 2022).

There are extensive literatures exploring the issue from myriad perspectives, with perceptions of safety, the tendency to travel 'encumbered' (e.g., with children), and trip complexity often highlighted as factors in which transport gender differences manifest. Safety in this context has two main dimensions, both of which are important: perceptions of collision risk and perceptions of the risk of harassment and/or attack. Differences between the way men and women perceive safety and risk have long been of interest to scholars (Gustafsod, 1998), and women's greater concern for road traffic collisions has been used to explain a variety of differences in the behaviours exhibited when using different transport modes (e.g., Hasanat-E-Rabbi et al., 2021; Song et al., 2021; Useche et al., 2018). It has also been used to explain the choice of which transport mode to take (often discussed in relation to women's lower propensity to cycle; e.g., Matyas, 2020). Fear of harassment and/or attack when using transport systems is much greater among women than men, whether in relation to the use of public transport (Ouali et al., 2020) or more generally in terms of navigating public spaces (Madge, 1997).

Issues related to encumberment and trip complexity have their roots in the gendered division of work, with women typically juggling more varied obligations that might include caregiving and household tasks alongside paid employment (Moras, 2017; Scheiner & Holz-Rau, 2017). Travelling with children is more difficult than travelling alone and many of the barriers to non-car travel are amplified when one also has to also care for dependents (Cooper & Vanoutrive, 2022). Similarly, trip chaining, the term referring to the incorporation of household-sustaining activities into the daily commute (or other leisure travel), has a long and continuing history of study (e.g., McGuckin & Murakami, 1999; Sagaris & Tiznado-Aitken, 2023). Such journeys are much more likely to be made by women than men.

Despite the wealth of work in this field, there remains a recognition among scholars that the relationship between gender and transport is still insufficiently understood by practitioners (Uteng, 2021). But what about the end users themselves? What do they know or perceive of this issue? A lack of awareness of the issue has been argued to be a major contributor to its perpetuation and a key target for education strategies aimed at improving the situation (Ng & Acker, 2018). Nevertheless, we know of no studies that directly explore how people perceive or conceptualise gender inequity in transport. This research therefore explores those end-user views and perceptions, using focus groups to do so.

2.2. Focus group gender composition

As briefly described above, segmentation of focus group participants based on characteristics such as ethnicity, age, class, culture, and/or gender is common practice, having been argued to facilitate active discussion through the sharing of common experience (Morgan, 1995). Smithson (2000) explains how the "problem of a dominant voice overriding other voices is supposedly dealt with by the technique of making the focus groups homogenous for example in terms of age, experience, education and sex" (p.108). She goes on to discuss how the efficacy of this strategy is linked to the topic being discussed, insofar as the segmentation needs to be connected to the discussion theme. For example, in the work of Smithson and Díaz (1996), participants were segmented according several categories, yet in discussions of parenting it was the characteristic of having children (not one of the bases of segmentation) that most influenced who dominated discussions. Similarly, issues of race and ethnicity were only discussed when those of a minority ethnic group represented a majority in a focus group. This clearly has implications for the gender composition of focus groups discussing gender inequity.

Smithson explained her findings in terms of the other participants deferring to the 'experts' in the group; however, no comparison of groups was made, hence we are left wondering what the 'non-experts' might have discussed in the absence of those considered to be experts, or how conversations in a mixed group might differ from those in a homogenous group. It is difficult to find research that purposively addresses this question. Heary and Hennessy (2002) provide us with a review of focus group research with children, highlighting that gender composition has a strong influence on responding, and that the influence depends on the age of the children participating in the study. However, as the review only covered studies involving children, methodological questions remain. Interestingly, the authors

themselves recommended further methodological inquiry into focus group gender composition.

In adult research, Greenfield et al. (2007) and Cummings et al. (2010) described a study involving single and mixed gender drug recovery focus groups. Their work focussed on the impact of focus group gender composition on the efficacy of the treatment (in terms of drug recovery, with some effects found); however, in Greenfield et al. (2013) an exploration of participants' subjective experience of the groups themselves is offered. The authors describe how women in single gender groups reported greater feelings of empathy and intimacy, and therefore were more honest and open in discussions, than those in mixed gender groups. Those authors did not, however, discuss in detail the mechanisms through which this might occur. Ridgeway and Smith-Lovin (1999) had previously noted that men will tend to dominate discussions unless the issue being discussed specifically relates to women. This resonates with arguments made by Smithson (2000); however, context is key. It is not necessarily the case that women will be more likely to share their experiences in single gender group, a finding that led Hollander (2004) to point out: "how gender and other status contexts affect focus group discussions cannot simply be assumed, but must be empirically examined" (p.619). These inconsistencies clearly point towards a need for concerted research effort in this domain. The research presented below attempts to address this research gap.

In applying this to the current transport context, one might expect women in single-gender groups to be more open to discussing their experiences than those in mixed-gender groups, and for men in in mixed groups to defer to women when talking of gender inequity in transport. The question of how men discuss the topic in men-only groups, compared to how they do so in mixed gender groups, is left open.

2.3. Asynchronous online focus groups

All the focus group research thus far cited has been concerned with traditional, in-person focus groups. Although that format has benefits, principally in the collaborative discussion that face-to-face contact encourages, it is not always practical or possible to organise and host such sessions. Research using online platforms has therefore grown as internet technologies have advanced, and several research works exist that directly explore the differences in data content and quality generated by face-to-face and online focus groups (e.g., Reid & Reid, 2005; Woodyatt et al., 2016; Zwaanswijk & van Dulmen, 2014). Online sessions facilitate participation from those that would otherwise find it difficult to attend in-person sessions, for

example those with limited access to public or private modes of transport, hence are especially relevant for transportation research. They can also encourage more open, honest discussion, particularly about sensitive topics, thanks to the greater anonymity conferred upon participants (Stewart & Shamdasani, 2017). How this greater anonymity might influence the impact of gender composition on responding has not yet been explored.

The asynchronous online focus group (AOFG) is a variant that involves the use of online discussion boards or forums to which participants post written responses to questions or topics posed by researchers. Participants can contribute in their own time, from any location where they have access to the internet. It is not in this article's scope to discuss in detail the pros and cons of synchronous vs asynchronous focus groups (the interested reader is referred to Gordon et al., 2021, for such a discussion); however, it is worth pointing out that, given our interest in the travel behaviours and opinions of people with varied mobility requirements (e.g., working parents, rural residents, those with poor access to private and/or public transport), the participation benefits of AOFGs were considered sufficient justification for their use in the current context. Despite this clear benefit, most studies using the method come from the healthcare or education domains. To our knowledge, only one study (beyond our own work) has been published in the transport domain (a study on end-user acceptance of shared automated vehicles; Dichabeng et al., 2021).

Even more so than synchronous online groups, AOFGs have been shown to enhance participants' feelings of anonymity and encourage more open discussion (Reisner et al., 2017; Ybarra et al., 2019); however, explorations of the impact of this anonymity in the context of gender are lacking. AOFG's have also been argued to mitigate the previously discussed drawback of individual voices dominating discussions, partly because they allow participants to carefully consider their responses in their own time (Doull et al., 2018). Although some explorations of these arguments can be found in the literature, methodological inquiry of this kind is still limited. In the context of the current research, although there has been some work on group size (e.g., Luo et al., 2023), there is a complete lack of work exploring the impact of group composition on responding. Our research therefore asked to what extent does group gender composition influence participant responding in an asynchronous online context.

3. Methodology

3.1. Study design and procedure

The research discussed here formed part of a broader exploration of people's perceptions of the barriers to non-car travel. Five discussion topics were posed in a series of asynchronous online focus groups (AOFGs), the first four of which concerned people's experiences with and perceptions of public transport, active travel, and combinations thereof. Details of these can be found in McIlroy (2023, 2024). The fifth topic is the focus of the current research, with the following presented to participants:

"Research indicates that men and women often have different experiences when using local transport systems (whether using private, public, or active transport), having different needs or requirements and different perceptions of, e.g., safety and cleanliness. It has also been reported that men and women are affected differently by the various factors that might influence (or constrain/force) a person's decision to use a particular mode (or modes) of transport. Do you agree with this? What are your experiences?"

The study began with the completion of a questionnaire (hosted on Qualtrics) that contained a variety of demographic and transport-related items. To segment participants into gender groups, participants were asked "Please indicate your preference for participation in a single or mixed gender online focus group, or if you have no strong preference" (having previously indicated their gender). All of those that selected either single or mixed were assigned to the group of their choice, with those stating no preference assigned to a group based on the availability of a sufficient number of participants to make each group. Additional segmentation was based on a person's residential location, with three levels: urban, peri-urban, and rural (the focus of other work, see McIlroy, 2023, 2024). Nine focus group were therefore created (male, female, and mixed gender groups for people of each residential location type), with a goal of broadly even group sizes, though as will be seen, rural residents' groups were smaller (reflecting population statistics).

To host the focus groups, the ProBoards online platform was used. Participants were provided with usernames and passwords to access the discussion boards and all participation was entirely anonymous. Participants could only access the forum to which they had been assigned, and each topic was posted as a separate 'thread' within the forum page for each group. The gender topic was posted on day 11 of the study and remained available for six days for participants to contribute. Prompts to engage with the discussions were made on days 11, 13, and 15, and an email informing participants of the study's close on day 17. No

other moderator input was provided (the reader is referred to the discussion section for some arguments for and against this methodological choice). The study design and questions were piloted with six participants prior to wider participant recruitment, all of whom were academic or research colleagues of the current authors. The pilot ran for 12 days, with results informing question wording, ProBoards platform design, and questionnaire design.

3.2. Recruitment

The research received ethical approval from the University of Southampton's Faculty of Engineering and Physical Sciences Ethics Committee (ID 73638). Participant recruitment was conducted entirely online. Colleagues were contacted via email, and an advertisement was placed on the University of Southampton's internal online news portal, inviting participation. Additionally, posts were made on multiple Facebook groups, particularly those related to communities in villages, towns, and cities within the study area (i.e., southern England).

The recruitment message specified that the research was interested in understanding the obstacles people encounter when using various modes of transportation, including public transport, walking, cycling, and other active travel modes, as well as when combining these modes in a single journey. It did not mention gender. Participants were informed that the study would be conducted online, and a reimbursement of £10 would be provided for their time. The primary researcher's email address was provided, and interested individuals were instructed to contact via email for further information.

A total of 223 individuals responded to the study advertisements. Each of these respondents received study information and a link to the demographic questionnaire. Of the 223, 173 individuals completed the questionnaire, received a unique username, and were enrolled in the relevant focus group. Ultimately, 146 individuals actively participated in the study, contributing at least one response to the topics posted in the forums. Table 1 summarises participant demographics across the nine focus groups.

Table 1. Age and gender characteristics of the sample, separated by focus group membership.

		Number of members	Male	Female	Non-binary	Mean age	Age SD	Age range
Urban	Male	14	15			43.7	12.4	31-71
	Female	18		18		41.2	10.9	29-65
	Mixed	16	5	10	1	44.6	13.8	21-76
Peri-urban	Male	19	19			49.9	14.7	20-73
	Female	26		26		41.5	12.4	21-69
	Mixed	25	10	15	0	46.4	14.9	18-70
Rural	Male	6	6			58.3	3.4	55-64
	Female	11		11		51.7	10.9	37-70
	Mixed	10	4	6	0	56.6	16.3	32-77
	Totals	146	58	86	1	46.3	13.7	18-77

Of the 146 active participants, 115 contributed to the discussions concerning transport and gender (i.e., the topic of interest here). One of those participant's was non-binary (a member of a mixed group). Given our focus on males and females, their data were excluded from the analyses (a limitation we acknowledge here and discuss in the limitations section, below). The demographic characteristics of the 114 individuals whose data were analysed for this research are detailed in Table 2, categorized by their membership of a single or mixed gender focus group. Females were over-represented by a ratio of around 4:3, and male participants were, on average, slightly older.

Table 2. Age and gender characteristics of the sample

		Number of participants	Mean age	Age SD	Age range
Females	**In single gender groups**	44	41.2	10.8	21-69
	In mixed gender groups	22	42.7	16.1	18-69
Males	**In single gender groups**	33	46.8	13.0	20-73
	In mixed gender groups	15	51.5	11.9	32-76
	Totals	114	44.5	13.1	18-76

3.3. Thematic analysis

The responses from participants underwent an inductive thematic analysis, taking a semantic approach and following the approach outlined by Braun and Clarke (2006). This involved developing a categorization scheme to identify prevalent themes in participants' responses. The categorization, or coding scheme was refined through approximately four passes of the response set. In the first pass, the analyst familiarized themselves with the data and began identifying initial themes. The second pass distilled an early categorization scheme from the identified themes, while the third pass involved applying and refining the scheme. The fourth pass reapplied the refined scheme to determine code counts, with some additional refinements made without conducting another full pass of the response sets. As this research was exploratory, the analysis was theory-agnostic and entirely data driven. It did not rely on existing theoretical framework, nor did it aim to develop new theory.

To validate the coding scheme's representation of the focus group content, an inter-rater agreement exercise was conducted (McHugh, 2012). Participant responses were segmented into single identifiable chunks to which a single theme had been applied. Approximately 10% of these segments were randomly selected, and a second individual independently applied the thematic coding scheme to these excerpts. Percentage agreement and Cohen's kappa were calculated to assess the reliability of each coding scheme.

4. Results

4.1. Results in numbers

The participants provided discussions totalling 16,556 words in response to the transport gender inequity topic. Data on the number of individual forum posts made by participants and the number of words written in each focus group are summarised in Figures 1 and 2. To explore whether the focus group composition impacted upon the *amount* contributed by each participant, the average number of posts and average number of words contributed per person were calculated across females and males in single gender groups and mixed gender groups. Results are displayed in Table 3. On average, males in single gender groups wrote more words than males in mixed gender groups, whereas the opposite was true for women, with those in mixed gender groups contributing more than those in single gender groups. This difference was not, however, statistically significant, with a factorial ANOVA showing no significant interaction effect between participant gender (male or female) and focus group membership (single or mixed gender; $F_{(1,110)} = .504$, $p = .48$). No noteworthy trends were observed for the number of posts made to the forums, with the majority of participants contributing just one comment.
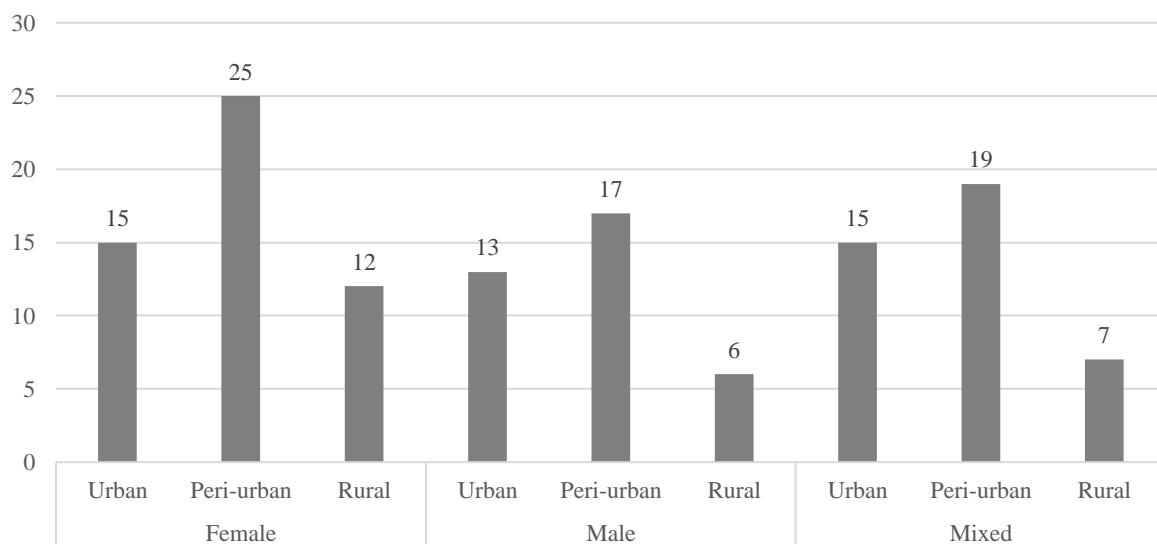

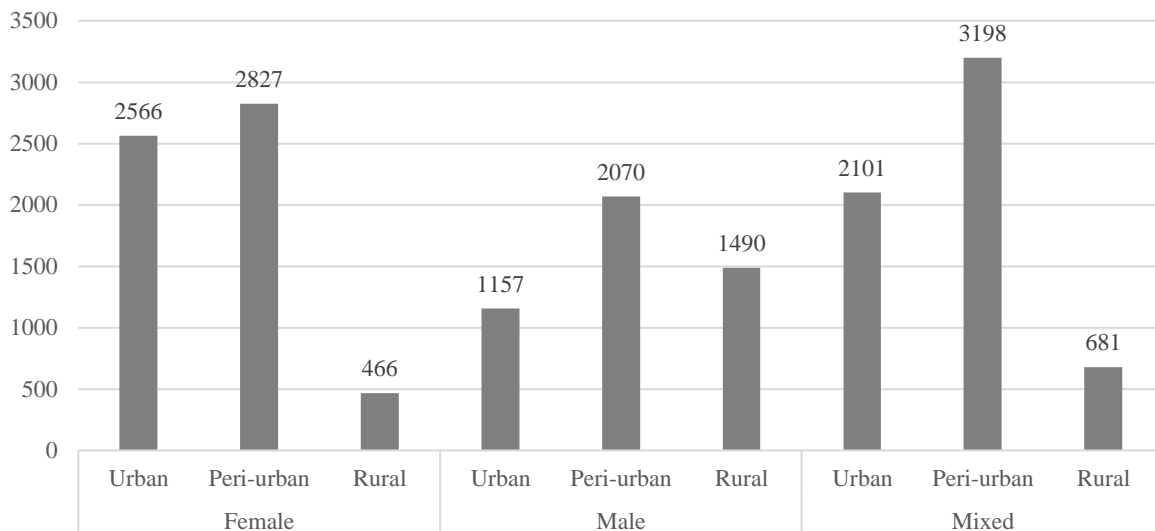Figure 1. Number of posts made in each online focus group forum.

Figure 2. Number of words written in each online focus group forum.

Table 3. The average number of posts made and words contributed to discussion by males and females in single and mixed gender focus groups.

	Average number of posts per person	Average number of words per person
Females in mixed groups	1.1	167.1
Females in single groups	1.2	161.4
Males in mixed groups	1.0	150.9
Males in single groups	1.1	112.0

4.2. Thematic analysis

The thematic analysis of responses resulted in the identification of 16 themes, under which 19 sub-themes were identified. A summary of the parent themes can be seen in Table 4, with example quotes and frequency counts. Sub-themes are presented in full in Table A1 in the appendix and discussed in more detail below. The inter-coder reliability exercise resulted in an agreement of 76% between the two analysts and a Cohen's kappa of .75, indicating a moderate and acceptable level of agreement (McHugh, 2012). The coding scheme was therefore accepted as a valid representation of the data.

Two of the themes covered comments regarding a participant's perceptions of the experiences of the other gender (i.e., female consideration of the male experience and male consideration of the female experience). Comments categorised under these themes were further considered in terms of the other themes to highlight how people acknowledged the challenges of the other gender without necessarily experiencing them themselves. Description

of these, with example quotes, are provided in the appendices in Table A2. Figure 3 displays the prevalence of each parent theme in the comments made by males in male groups, females in female groups, males in mixed groups, and females in mixed groups. These are expressed as proportions, indicating each theme's prominence in the response sets. In the discussions below, quotes are attributed to an individual user by their gender, their group membership (single or mixed), and their age.

Table 4. Themes identified in the responses to the question concerning gender inequity in transport, and the extent to which they were mentioned by men and women, separated by focus group membership.

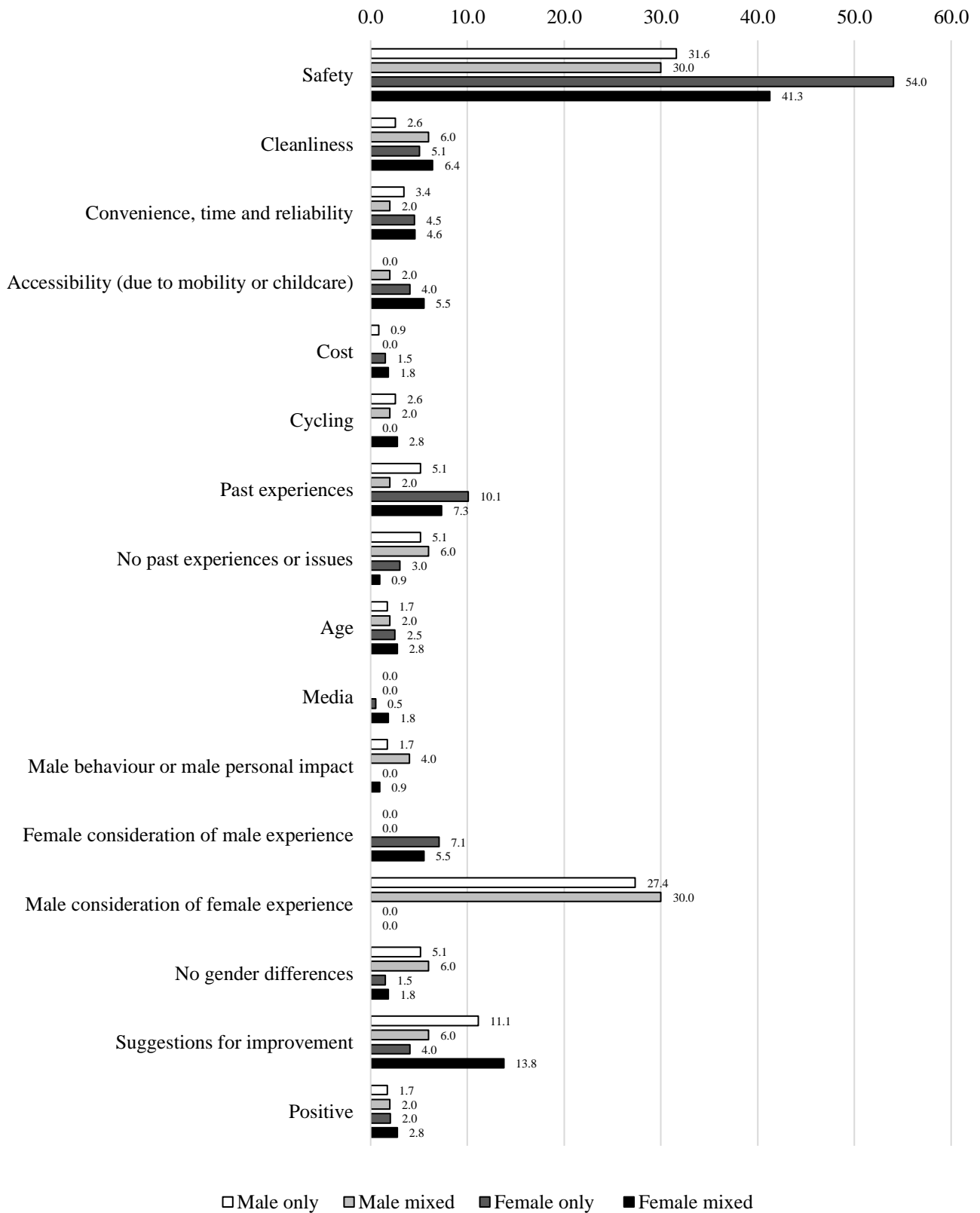| Category	No. of sub-categories	Description	Example quote	Number of times mentioned				Total
				M Only	F Only	M Mixed	F Mixed	
Safety	7	Comments relating to personal safety concerns in public transport systems	"I want to avoid travelling alone at night as much as possible because I don't feel safe" fu18	37	106	15	45	206
Cleanliness	0	Responses relating to requirements and desire for clean facilities in transport systems.	"We need clean toilets and basic water and soap to clean and empty the menstrual cup, to change a tampon, a pad…" mixu11 (female)	3	10	3	7	23
Convenience, time, and reliability	0	Responses relating to the convenience or reliability of a certain mode of transport and how this affects decisions.	"Private transport gives more flexibility, I can arrange a lot of things on a way to/from work" fp1	4	9	1	5	19
Accessibility (due to mobility or childcare)	0	Problems for those with mobility impairments or due to childcare and pregnancy.	"Poorly maintained pavements and dropped kerbs... influence routes and methods of travel with a baby" fu7	0	8	1	6	15
Cost	0	Views on the cost of public vs private transport, and how this leads decisions	"I try to take the transportation that gets me closest to home, cheapest" fu16	1	3	0	2	6
Cycling	2	Comments regarding choosing whether to cycle.	"Being a regular cyclist, in honesty I do not feel safe cycling – waiting on the next near miss to occur" mp23	3	0	1	3	7
Past experiences	2	Comments detailing any past experiences respondents may have experienced in public transport systems.	"I have been cat called and have strange men talk to me on buses and trains" fp29	6	19	1	8	34
No past experiences or issues	2	Comments relating to respondents not having any past experiences in or on public transport systems.	"I haven't had a direct experience of this myself" fp12	6	6	3	1	16
Age	0	Increased personal awareness and life experiences now that older. Have had more uncomfortable experiences when younger.	"If one is an older adult, they might feel more vulnerable" fu12	2	5	1	3	11
Media and News	0	Discussing the media's contribution to fear of harassment, aggression, or crime	"There is so much fear out there nowadays which is not helped with media and news reporting which encourages people to think that everyone is out to harm them" mixp25	0	1	0	2	3
Male responsibility	0	Awareness that men can make women feel uncomfortable and how some males adapt behaviour to avoid this.	"I am now more aware that innocently walking short distance behind a woman on the same route in a quiet area can be intimidating" mp20	2	0	2	1	4
Female consideration of the male experience	6	Comments where females acknowledge the experience that males go through.	"I think there is a risk to men too, mainly violence or being targeted by someone wanting a fight" fp23	0	14	0	6	20
Male consideration of the female experience	8	Comments where males acknowledge the experiences that females can go through.	"If [my partner] has meetings, she will not cycle to work as helmet crushes her hair" mixp15	32	0	15	0	47
No gender differences	0	There are no gender differences in how men or women experience public transport	"Being male or female, young or old, I think we can all feel unsafe at times" mp6	6	3	3	2	14
Suggestions for improvement	4	Any suggestions for the improvement of public transport.	"We need better policing at the transport hubs" mp19	13	8	3	15	39
Positive	0	Generally positive views about local transport systems.	"I've never had a problem with public transport" fp25	2	4	1	3	10

	0.0	10.0	20.0	30.0	40.0	50.0	60.0

Safety
- 31.6
- 30.0
- 54.0
- 41.3

Cleanliness
- 2.6
- 6.0
- 5.1
- 6.4

Convenience, time and reliability
- 3.4
- 2.0
- 4.5
- 4.6

Accessibility (due to mobility or childcare)
- 0.0
- 2.0
- 4.0
- 5.5

Cost
- 0.9
- 0.0
- 1.5
- 1.8

Cycling
- 2.6
- 2.0
- 0.0
- 2.8

Past experiences
- 5.1
- 2.0
- 10.1
- 7.3

No past experiences or issues
- 5.1
- 6.0
- 3.0
- 0.9

Age
- 1.7
- 2.0
- 2.5
- 2.8

Media
- 0.0
- 0.0
- 0.5
- 1.8

Male behaviour or male personal impact
- 1.7
- 4.0
- 0.0
- 0.9

Female consideration of male experience
- 0.0
- 0.0
- 7.1
- 5.5

Male consideration of female experience
- 27.4
- 30.0
- 0.0
- 0.0

No gender differences
- 5.1
- 6.0
- 1.5
- 1.8

Suggestions for improvement
- 11.1
- 6.0
- 4.0
- 13.8

Positive
- 1.7
- 2.0
- 2.0
- 2.8

□ Male only   □ Male mixed   ▨ Female only   ■ Female mixed

Figure 3. Proportion of statements assigned to each thematic code, separated by focus group membership and gender (i.e., male only and female only groups, and males in mixed groups and females in mixed groups).

4.2.1. Perspectives on transport gender inequity

Similarities and differences in the ways men and women discussed transport gender inequity were found across responses. For reasons of brevity, here we offer a summary focussing only on what we consider to be the most interesting findings to result from the focus group.

4.2.1.1. Safety

Violence against, and harassment of women and girls, often with sexual connotations, is one of the most salient and powerful manifestations of gender inequity (Kearns et al., 2020). Unsurprisingly, therefore, *Safety* was the most commonly identified theme in participants' discussions, with a greater proportion of women's comments categorised under this parent theme than men's. Seven sub-themes were identified under this theme (see Table A4 in the appendix), with differences in the prominence of each theme in women's and men's responses. Women were most concerned with *Visibility, time of day, or season*, relating to lighting and travelling in the dark (44 mentions), and by the *Presence of others*, relating to the presence of other people and the desire to avoid travelling alone (38 mentions). These two sub-themes were often mentioned together: *"I would be wary of travelling by train on my own at night"* (female, single, 43). In contrast, the most prominent sub-theme identified in the responses of male participants was simply the acknowledgement that women are likely to be more concerned for their safety than men (*Acknowledging women's concerns,* 20 mentions, e.g., *"I completely agree that there are gender differences in terms of experiences using public transport. Most times I use a train I feel that I would be feeling a lot more unsafe and worried if I were a female"*, male, single, 37).

The *Harassment, aggression, or unease* sub-theme encompassed comments related to being followed, receiving unwelcome comments, or general intimidation. Mentioned by 10 females (compared to four males), the primary concern was due to unwanted attention which could lead to sexual harassment: *"I think there is the reality of 'low level' harassment that women face all the time which always carries with it the implicit threat of violence"* (female, single, 49). Among males this took the form of unspecified intimidation, or that which could lead to violence: *"Being male I am sometimes intimidated by third party behaviour on public transport"* (male, single, 36). As will be discussed, this gender difference, with men

discussing violence and women discussing sexual harassment, also emerged in the context of other themes.

Those who made comments categorised under the *Comparing modes* sub-theme largely agreed that driving and cycling are quicker and can take the user closer to home, and hence feel safer: *"I feel safer on my bike than on foot at night, so often choose this mode of transport as I know I can get places quicker and get away from anyone that causes alarm"* (female, mixed, 49). However, this was mainly relevant when discussing travelling after dark, and many respondents went on to say that they feel comfortable taking public transport in the daytime.

Taking precautions encompassed those comments which described taking extra steps to ensure personal safety. This included having tracking apps, avoiding empty carriages, avoiding areas after sports matches, wearing reflectors, buying first class tickets to avoid intimidating people, etc. There were 24 females, in comparison to three males, who said they would, or have, actively taken precautions for their safety. Much like the *Harassment, aggression, or unease* sub-theme, in females this manifested as a fear of sexual assault and in males as a fear of a violent attack: *"If I go out at night, I make sure I know my route home, that my husband knows my route home and what time to expect me"* (female, mixed, 60), *"[I] would actively avoid situations such as travelling after football games... sometimes there are elements of people being antagonistic towards each other...loud...or challenging"* (male, mixed, 51).

The final sub-theme, *Clothing*, can be considered as a specific sub-set of comments concerning *Taking precautions*; however, the separation was deemed useful given its presence in the responses of four female participants (and its absence from comments made by males): *"I do feel mindful when I'm on the tube...especially if it's summer clothing"* (female, single, 30), *"I plan my outfit differently on public transport...I'd think twice about wearing a short skirt"* (female, single, 42).

4.2.1.2. Cleanliness

The *Cleanliness* theme was applied to those responses where the participants expressed a desire or requirement for clean facilities. Participants of both genders mentioned that clean travel would create a more comfortable travel experience; however, females did so to a greater extent (17 females compared to six males), expressing their need in terms of childcare, breastfeeding, and menstruation: *"As a woman we need clean toilets and basic*

water and soap to clean and empty the menstrual cup, to change a tampon, a pad…" (female, mixed, 34)

4.2.1.3. Convenience, time, and reliability

Comments categorised under this theme referred to how preferences are led by the convenience and speed of different options. Within this theme most people referred to the ease of taking the car in comparison to public transport which takes more time and is fixed to a certain route. In addition to this, the potential for delays and cancellations on public transport is also a deterrent. The theme was more prominent in women's compared to men's responses (14 vs five mentions), and there were qualitative differences in the reasons given, with females referring more to the ease of trip chaining in terms of childcare: *"As a mother of small kids, I have certainly experienced the inconvenience of long waits, full buses and so on"* (female, single, 34) and males referred more to the general reliability of a service: *"As a male, my major concern is how reliable (e.g., on-time rate) and easiness of using the transport"* (male, single, 66).

4.2.1.4. Accessibility (due to mobility or childcare)

This theme incorporated comments related to journeying encumbered due to childcare duties, such as travelling with prams or small children, as well as those comments concerning mobility requirements for those with impairments. These were grouped as many requirements overlapped. This is seen in discussions of the need for ramps, lifts, and well-maintained paving for both wheelchairs and prams. A lot of participants were put off certain routes if these needs were not met, thus hindering the use of public transport: *"Obstacles such as poorly maintained pavements and dropped kerbs, blocked walking routes…low visibility at junctions, lack of step free access etc. all influence routes and methods of travel with a baby"* (female, single, 35).

Of the 15 comments categorised under this theme, only one was made by a male (*"[bus drivers] will accelerate off the moment you've paid for your ticket – catapulting you down the bus"* male, mixed, 53). This could be due to the increased likelihood that childcare duties fall on the female (Sikirić, 2021), thus making them more aware of the accessibility requirements that come with taking children on public transport.

4.2.1.5. Cost

This encompasses the different views that participants expressed regarding the cost of different transport options. Although this was one of the least common themes, with only six mentions of this across all the focus groups, it is notable insofar as five of those mentions were by females. There were also differences in the way it was discussed, with some saying public transport is too expensive and others referring to the excessive costs of car use: *"UK public transport is shockingly bad! 1. Over priced…"* (female, single, 46), *"The congestion charge and the LEZ charge, the cost of parking and finding a car parking space. Too stressful!"* (female, mixed, 69).

4.2.1.6. Cycling

Although *Cycling* was not a commonly occurring theme, with only seven mentions, two sub-themes were identified: *Hygiene and appearance* and *Cycling safety*. The former refers to how cycling can cause the user to be sweaty or that *"Helmets mess up your hair!!!"* (female, mixed, 61). Although only one individual mentioned this attribute directly affecting them, it was also brought up by males considering the female experience (see 'Considerations of the other gender' theme section, below), hence was included as a separate sub-theme. The *Cycling safety* sub-theme describes the unattractiveness of cycling due to a lack of safety. Four males and two females commented on the lack of safe cycling infrastructure. Within this, males acknowledged feeling unsafe while cycling, yet this did not seem to deter them from using the bike: *"Being a regular cyclist…I do not feel safe cycling – waiting for the next near miss to occur"* (male, single, 36), *"[My wife] is regularly close-passed and cut up at junctions. I have similar experiences but far less often"* (male, urban, 34).

Females referred more to wanting to cycle, but being dissuaded due to safety reasons, with one woman referring to a perception that child trailers are dangerous: *"Child trailers at the back of bikes feel positively dangerous to me… I'd be quite scared to take a child out on one. Maybe we need to encourage, and sell, more tricycles and similar, which allow active transport for those with children…"* (female, mixed, 61), *"The good, safe infrastructure will tempt significantly more people and a greater range of people than paint (those bad narrow "lanes") or nothing on busy roads…tried for several months but decided it wasn't safe"* (female, mixed, 28).

4.2.1.7. Past Experiences

This theme encompassed comments detailing negative past experiences and was separated into two sub-themes: *Harassment, aggression, and/or unease* and *Late or unreliable services*. There were large gender differences in this theme, with females far more likely to discuss negative experiences. This was true for both sub-themes, with 18 females compared to seven males making comments regarding *Harassment, aggression and/or unease,* and nine females but no males making comments concerning *Late or unreliable services.* For the latter, comments were sometimes made in terms of the impact on safety perceptions (e.g., being stranded at night somewhere) or on childcare duties (e.g., *"I have certainly experienced the inconvenience of long waits, full buses and so on when I'm standing at a bus stop with my children and a pram",* female, single, 37). Regarding the former, some comments were linked with being alone, or travelling at night (e.g., *"It's only when walking, taking the bus or train, or cycling alone that I've experienced sexual harassment, been followed home or experienced other aggression"* female, single, 35), while others were more general (e.g., *"I have been cat called and have strange men talk to me on buses and trains"* female, single, 29; *"On occasion I have felt danger on public transport, usually when there is a rowdy, drunk bunch of men"* male, single, 37),

4.2.1.8. No past experiences or issues

The two sub-themes under this theme distinguish between those comments describing having not had bad experiences due to consciously avoiding certain situations (*Acknowledgement and/ or avoidant*) and those describing simply not experiencing one (*No bad experiences*). More females than males (seven compared to two) said they had not had a bad experience due to avoiding those situations, for example by taking the car or only travelling in daytime; *"I personally have never had a bad experience in terms of being cat called or harassed whilst on public transport but perhaps that is because I do not use it as much or at least not at night"* (female, single, 28). On the other hand, seven males and no females said they could simply not recall ever having experienced such as situation; *"I don't really have a problem travelling on my own or late at night on public transport"* (male, mixed, 61).

4.2.1.9. Male responsibility

Four men described an awareness of how their behaviour can make women feel uncomfortable, and one woman referred to men's responsibility for self-reflection and action: *"If women feel unsafe because of men, that is the responsibility of men to listen, understand, and if necessary, adjust their behaviour or take action"* (female, mixed, 49). Not reflected in these numbers are the indirect comments from women that brought up sexual harassment or feeling uneasy on public transport, with the insinuation that this fear was due to the impact of male actions and behaviour, e.g., *"creepy men"* (female, single, 24), *"strange men talk to me"* (female, single, 29) and *"very uncomfortable around men"* (female, single, 25). These were captured elsewhere.

Regarding the men's comments, there was an understanding that they could be the person a female feared in certain situations and expressing a desire to learn how they could make women feel more comfortable: *"I am now more aware that innocently walking a short distance behind a woman on the same route in a quiet area can be intimidating… I'd also be happy for advice on how my behaviour (through action or inaction) on public/active transport could impact other people's perceptions of safety."* (male, single, 54).

4.2.1.10. Considerations of the other gender

Within all groups, multiple respondents commented how they imagine those of the opposite gender might feel, either aligning or contrasting with their own experience (note that this was identified in terms of the binary gender distinction, with no respondents discussing how they imagine the experiences of those not identifying as solely male or female). This was often in the form of describing what participants thought partners or friends would do or feel in certain situations. More males made comments in consideration of the female experience (47) than vice versa (20). As described above, all comments categorised under this theme were further considered in terms of the other themes identified. In a general sense, men's perceptions of women's experiences largely matched women's discussions, whereas women's perceptions of the male experience differed quitter substantially from men's reports of their experiences.

Female consideration of the male experience

Six sub-themes were identified in the responses that came under this category. Two of them were under the *Safety* parent theme, with seven females acknowledging that males

would also be concerned for their safety in particular environments (*Harassment, aggression, and/or unease*) and one recognising that men could feel less safe in the dark (*Visibility, time of day or season*). The most common theme, however, was women stating that they felt males would not have had any negative past experiences or are not typically a target (nine instances, e.g., *"lone males aren't generally hassled"* female, single, 50). This contrasts with data suggesting that males are more likely than females to be the victims of crime (though limitations in police data, in terms of the under estimation of crime against women, is acknowledged; ONS, 2022)

Male consideration of the female experience

Eight sub-themes were identified in this category, four of which fell under the safety theme. The most common one was men who understand women's *Visibility, time of day, or season* concerns*: "my wife is more resistant to walking late at night than I am"* (male, single, 45). This was closely followed by *Presence of others*, then *Harassment, aggression, and/or unease* and *Taking precautions.* Additionally, some males commented that women would be more concerned for cleanliness and acknowledged their hesitation to cycle in terms of both *Hygiene and appearance* and *Cycling safety*: *"If [my partner] has meetings she will not cycle to work as helmet crushes her hair"* (male, mixed, 51).

4.2.1.11.Other themes

Eleven participants discussed the impact of age on experience whereby there was a feeling of greater awareness as a participant has aged, along with a greater tendency to take extra precautions. This was more common among women's responses (eight instances) than men's (three instances): *"I think it is also true that as men get older, their perception of feeling more vulnerable also increases"* (male, single, 36). Women also discussed the impact of media and news to a greater extent. Comments categorised under this theme, of which there were three, were all made by women. They referred to a feeling that the media and news can exacerbate fear: *"I wonder, is this is down to the media coverage over the past 30 years making us all more cautious"* (female, single, 47).

Finally, there were notable comments disagreeing with the question, stating that there are no differences in how genders experience public transport systems. Nine of these comments came from men, yet there were still five women who expressed this sentiment: *"I believe the*

dangers are greatly exaggerated, although anti-social behaviour can be a problem, though rarely a danger" (male, single, 73).

4.2.2. *Single gender vs mixed gender groups*

Although the overall amount people contributed to discussions did not differ between those in single or mixed gender groups (as demonstrated by the statistical analysis offered above), there were differences in the prominences of specific themes within the response sets. Men in men-only focus groups discussed their perceptions of women's experiences to a lesser extent than men in mixed gender groups. The opposite was true for women, with those in women-only groups discussing men's experience to a greater extent than those in mixed groups. The latter can perhaps be explained by referring back to the 'expert deferral' hypothesis discussed in the introduction, whereby participants defer to those they consider experts on the topic being discussed (Smithson, 2000). Where men are present in the group, women are less likely to discuss men's experiences, as they leave the men to do so. This explanation cannot, however, be applied to the converse finding that men discuss women's experiences to a greater extent when women are also present. This might be explained by men's desire to demonstrate to the women in the group that they acknowledge some of the transport gender inequity issues discussed. This explanation is lent support by the prominence of the *Acknowledging women's concerns* sub-theme in men's comments (discussed above).

Among men, substantial differences were observed in the *Safety* theme, with those in male-only groups discussing safety to a much greater extent than those in mixed groups. Men were more likely to report experiences or fear of harassment and aggression and discuss a concern for travelling alone or at night when in the virtual company only of other men. In contrast, women in single gender groups discussed the theme to a similar extent to those in mixed gender groups.

Similarly, men in male-only groups also discussed their own past experiences to greater extent than those in mixed gender groups. With gender inequity almost exclusively concerning the disadvantages or greater negative experiences of women, it is possible that men feel less comfortable offering their own experiences when also in the company of women, even in an anonymous, digital setting. This may relate to a reluctance to assume the position of a victim as a male when in the company of women, with such a position incompatible with broader notions of masculinity and male strength (Connell & Messerschmidt, 2005). Although there have been suggestions that masculinity is changing in

some social contexts (Valsecchi et al., 2023), ideas around traditional masculinity still persist (Borgogna & McDermott, 2022).

 The finding that men offer fewer discussions of their own experiences when in the company of women may also again relate to the deference to the expert idea, with the male dominance effect noted in many discussions disappearing when the topic specifically relates to women (Ridgeway & Smith-Lovin, 1999). In contrast to the safety theme, this group gender composition difference was also noted in women's comments, with females in single gender groups describing their past experiences in more depth than those in mixed groups. This latter finding appears to support the widely supported hypothesis that segmentation will facilitate greater openness (Morgan, 1996).

Looking in more detail at the way people considered the other gender's experiences, women in female only groups were much more likely (than women in mixed groups) to comment that they did not think men had the same kinds of negative experiences on public transport or did not experience the same worries and concerns as women (e.g., *"Constant vigilance for your safety is not something that my husband and male friends have to consider as much, and they rarely think twice walking home alone at night"* female, single, 35). One participant did qualify her statement, however, highlighting that although men may not typically worry about sexual harassment, they could worry about other types of intimidation ("*I often find folks are a bit 'creepy' with lone women on public transport at night whereas lone males aren't generally hassled - or perhaps they are hassled in a different intimidating rather than sexual way*" female, single, 50).

Women in mixed groups may have not wanted to diminish male experiences and felt more comfortable voicing this opinion in female only groups. This coincides with the differences between male only groups and males in mixed gender groups, as discussed above, where males were more comfortable sharing their experiences when only among other males. One woman in a mixed group did, however, voice the view that men still do not understand the issue, within which was the implication that she thought men cannot understand as they do not have the same lived experiences: "*Interesting responses. Women highlighting many dangers, many men saying they understand but as they don't experience the same level of risk and anxiety, they don't truly get it. And that's the problem*" female, mixed, 58).

A final difference worth highlighting is in the extent to which men and women offered suggestions for improvements or interventions to address inequities (e.g. *"if you want more people to use public transport, you need to make it more user friendly and as women have the*

greater risk and anxiety, then maybe their needs should be prioritised" female, mixed, 58). Men in men only groups discussed such topics to a greater extent than men in mixed groups, whereas the opposite was true for women, with those in mixed groups offering more views categorised under this theme. It is possible that men in mixed groups once again deferred to women in the proposal of interventions to address inequity, hence their lower propensity to offer such suggestions. For women, it may simply be that they spent more time discussing their lived experiences (feeling freer to do so in absence of men) and hence less time discussing potential solutions.

5. Discussion

5.1. What are people's perceptions of transport gender inequity?

With respect to transport systems, results from our focus groups suggest that it is widely accepted that women are disadvantaged. Women spoke of their own negative perceptions, concerns, and experiences and men spoke of the negative perceptions, concerns, and experiences of women they know. Although there were a small number of individuals denying differences exist, the consensus is broadly in line with the views of transport gender inequity found in academic, policy, and activist literature.

Many of the views expressed by our participants reflected the topics discussed in the academic literature. Females have a greater consideration for personal safety which in turn leads them to take more precautions when travelling, and childcare and the provision of clean and safe amenities affect female travel choices to greater extent than it does their male counterparts. This is not to say that neither of these themes were present in male responses. Multiple male participants also expressed safety concerns; however, this was more related to physical violence rather than sexual harassment concerns. Moreover, a large proportion of the themes identified in males' comments were related to their consideration of female experiences, showing understanding of female safety concerns, without necessarily experiencing the issues themselves.

A factor that is present more in academic literature than in the discussions of our participants was trip complexity. Although this was, to some extent, incorporated into the comments categorised under the *Convenience, time, and reliability* theme (which were much more common among women's responses), direct mentions of trip chaining and the need to combine tasks within a single journey were not prevalent among women's comments, and wholly absent from men's. There is a wealth of information in the academic literature on the

differing travel patterns of men and women, with women far more likely to combine household tasks or care-related journeys (including the 'school run') in complex journeys (e.g., Hensher & Reyes, 2000; Scheiner & Holz-Rau, 2017). These entrenched gendered roles have an enormously influential impact on transport inequity and yet were absent from men's discussions of their perceptions of transport gender inequity. This highlights a possible lack of insight, not in the safety factor when using transport (which is largely accepted, if not truly understood by men), but in the more fundamental constraints faced by women when choosing how to travel. To give an example, one man stated that *"My other half uses the car for everything, including taking the kids to school even though the school is within walking distance"*, going on to explain that *"...we have different views on transport in our house. I generally do not like driving"* (male, single, 39). No further detail is offered. Although further participant input would be required to confirm, this implies a lack of understanding or insight into the factors constraining his partner's travel mode choice beyond not sharing his dislike for driving.

This finding leads to a recommendation for educational strategies aimed at fostering inter-gender understanding in order to reach a more gender equitable transport systems. Ng and Acker (2018) point to education as a route to gender equity. We would go further and suggest that increasing awareness of the journey requirements constraints, not just the safety and/or security considerations, impacting upon women's choice of travel mode could serve as a novel and effective strategy to facilitate the journey towards greater gender equity in transport. Such messages could be delivered through commonly consumed media channels, a powerful influencer of gender norm perceptions and attitudes (Wenhold & Harrison, 2021).

5.2. How does online focus group gender composition affect responding?

In the broader focus group literature, participant segmentation is common. Justification for this practice is based in the argument that people with shared experiences (be they through class, gender, race, occupation, socioeconomic status, etc.) are more likely to have lively, open discussions than people with less in common. Our results suggest this to also be justified in an asynchronous online context, with women in women-only groups more openly discussing their perceptions of gender inequity, and their gender-related negative experiences, than those in mixed gender groups. We also find support for the hypothesis that participants will defer to 'experts' when discussing topics in mixed groups, whereby people with less direct experience of an issue will contribute less, providing more space to those who do have (or who are

perceived to have) direct experience. In our case, this was related to males perceiving women to have greater direct experience of gender inequity in transport and therefore providing them space to discuss. Relatedly, the tendency for males to dominate discussions did appear to be tempered in this gender-specific context where women are perceived to be the experts. Again, just as this has been shown in traditional, in-person groups, our research therefore indicates that these phenomena impact upon responding in wholly anonymous and asynchronous online focus groups where participants know only that they belong to either a homogenous or mixed-gender group.

6. Limitations and future work

The focus of this research has been on differences between men and women, and the responses of the one non-binary person that participated were excluded from the analyses. This is clearly a limitation, one that is reflected in the broader transport literature. That said, some considerations of gender in transport beyond the binary distinction are beginning to be seen in the academic literature (Ison et al., 2023; Lubitow et al., 2017; Shakibaei & Vorobjovas-Pinta, 2021; Weintrob et al., 2021). More dedicated research in this area is needed.

Asynchronous online focus group sizes vary but are typically greater than face-to-face focus group. This was not always the case in this research, with sizes varying across the nine groups from 26 (peri-urban females) to just six (rural males). The former is in keeping with the AOFG literature; however, the latter is notably smaller. This limitation arises from the nature of our convenience sampling method and ability to attract participants. We accept that this impacts the strength with which we can make conclusions and the extent to which findings can be generalised, particularly for males, who were under-represented.

Many of the themes identified in participants' responses were linked and were often co-present. Targeted analysis of which themes are more or less likely to be co-present, and in what context and for which participants, represents a potentially valuable area for future study. Such an analysis was not included here as it goes beyond the immediate scope of the work and would require more attention that would be possible to give it in the confines of a this single journal article.

The results discussed above go some way to show how group gender composition influences the way participants respond in an online, asynchronous context, and how the effects mirror those reported for in-person focus groups. It remains to be seen, however, how

this *compares* with its influence in an in-person context. In other words, to what extent does the does the anonymity afforded by the asynchronous online context impact upon this effect? To this end, methodological enquiry remains a valuable avenue for future research.

A methodological decision that will have influenced results is the moderation strategy chosen in this research. Similar to Hollander (2004) in her in-person focus group research, we adopted a self-managed groups approach whereby participants were presented with the topic and then left to themselves to manage discussions. Although emails were sent reminding participants to engage with discussions, the researchers did not contribute to the discussions themselves. Perhaps as a result, most participants only provided one forum post in response to the discussion topic. The extent to which any single voice could dominate therefore becomes less open to scrutiny. That said, effects of group gender composition were still seen. This implies that the knowledge that one belongs to a single or mixed gender focus group influences the overall content of discussions as well as individual contributions. How this might have further manifested with moderator input, and therefore multiple contributions per individual participant, remains an open question.

7. Conclusions

This research has highlighted the perceptions men and women have of gender inequity in transport, with the issues raised by participants broadly reflecting those reported elsewhere in literature. The overwhelming majority acknowledged the existence of the challenge. Men's views of women's experiences largely matched women's own reports of those experiences, with some asking how they could contribute positively. This suggests that raising awareness of gender inequity should no longer be the primary focus, rather that practical advice for men to mitigate their impact on women's experience of anxiety and fear in public spaces is needed.

That said, awareness raising efforts should not cease. Conversely, women's views of men's experiences did not match men's reports, with many women suggesting men do not have negative experiences on public transport, yet several men reporting feelings of harassment or unease and the need to take precautions to avoid certain situations. Although national statistics indicate men to be more likely to be victims of crime, these likely overlook the pervasive, low-level harassment women regularly experience on transport systems and wider society, and the greater concern for security and safety that comes through clearly in the results above. Nevertheless, mutual understanding is important. Moreover, this must go

beyond the safety theme, with gender norms also influencing the roles taken by, and therefore the journey requirements of women. Such an understanding was lacking among male participants.

From the methodological perspective, this research has highlighted how the gender composition of asynchronous online focus groups can influence participants' contributions to discussions, even when participation is wholly anonymous. This has implications for segmentation practices beyond the gender dimensions when considering how best to facilitate open, honest discussions even when there is minimal input from researchers.

8. Acknowledgements

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10. Appendices

10.1.   Table A1:

Table A1. Categorisation scheme for responses to the question; *"Research indicates that men and women often have different experiences when using local transport systems (whether using private, public, or active transport), having different needs or requirements and different perceptions of, e.g., safety and cleanliness. It has also been reported that men and women are affected differently by the various factors that might influence (or constrain/force) a person's decision to use a particular mode (or modes) of transport. Do you agree with this? What are your experiences?"*

Category	Sub-category	Description	Example quote	Number of times mentioned				Total
				Male only	Female only	Male mixed	Female mixed	
Safety	Harassment, aggression, or unease	Comments relating to and including cat calling, being followed, sexual comments, racism, touching, gang behaviour, rowdy passengers, intimidation.	"The amount of creepy men on public transport that make women feel uncomfortable is shocking" fp5	3	8	1	2	14
	Presence of others	Feeling more vulnerable when alone or will try to travel with others. Feeling safer in busy areas which is also likely have cameras.	"I want to avoid travelling alone at night as much as possible because I don't feel safe" fu18	7	26	1	12	47
	Visibility, time of day, or season	Feeling safer in well-lit areas, both at the platform and on routes to and from stops. Unlit roads make unsafe to walk or cycle due to speeding cars. Bus drivers cannot see people at stops to stop when unlit. Also, comments relating to waiting outside in the dark and cold.	"The rural and semi-rural stations are often in a poorly lit area, along dark paths especially during winter months" fp13	10	29	3	15	57
	Comparing modes	Comparison of different modes, e.g., cycling or driving are quicker and safer and take you closer to home, feeling safer on a ferry but more wary on trains at night.	"I'm completely comfortable travelling on a ferry at night…but I'm wary on a train and waiting on a train platform at night" mr4	1	9	3	3	17
	Clothing	Considerations for personal clothing like flat shoes and not wearing a skirt.	"I plan my outfit differently…not just wearing flat shoes to accommodate	0	4	0	0	4

Theme	Sub-theme	Description	Example quote					
			"walking. I'd think twice about wearing a short skirt" fp28					
	Taking precautions	Taking specific actions to ensure personal safety, such as contacting friends and family, having tracking apps, carrying alarms, avoiding end carriages, boarding with families/ other women, removing headphones, spending more to sit in first class, avoiding city centres around football matches, etc.	"I also avoid being in and around the city centre during and after local football/ sports matches" mixp7 (male) "I do have a safety alarm and identifier spar on my keys in case I do travel alone or with my daughter" fp5	1	17	2	8	29
	Acknowledging women's concerns	Expression of the general view that women are more concerned for their safety than men	"Constant vigilance for your safety is not something that my husband and male friends have to consider as much, and they rarely think twice walking home alone at night" fu7	15	13	5	5	38
Cleanliness		Responses relating to requirements for clean facilities, including; clean toilet seats and adequate soap and water for menstruation or breastfeeding.	"As a woman we need clean toilets and basic water and soap to clean and empty the menstrual cup, to change a tampon, a pad…" mixu11 (female)	3	10	3	7	23
Convenience, time, and reliability		Harder to trip chain on public transport, must leave earlier and/ or long wait times. Often delays and cancellations which leave people stranded – especially at night. With car, can leave when want to and can carry more things. Good North-South connections but bad East-West – suits commuters but not shopping, childcare, local jobs etc.	"I seem more concerned about the time I am wasting on public transport…private transport gives more flexibility, I can arrange a lot of things on a way to/ from work" fp1	4	9	1	5	19
Accessibility (due to mobility or childcare)		Problems for those with mobility impairments or due to childcare and pregnancy. Require ramps or lifts for prams. Poorly maintained paving, blocked walking routes to stops and transporting children means it's easier to use car. Need seat if pregnant and a clean, safe place to breastfeed.	"Obstacles such as poorly maintained pavements and dropped kerbs, blocked walking routes…lack of step free access etc. all influence routes and methods of travel with a baby" fu7	0	8	1	6	15

Category	Subcategory	Description	Quote					
Cost		Views on the cost of public vs private transport, and how this leads decisions.	"I try to take the transportation that gets me closest to home, cheapest" fu16	1	3	0	2	6
Cycling	Hygiene and appearance	Concerns relating to uncleanliness of active travel, whereby messing up hair and/or making user sweaty at destination.	"Helmets mess up your hair!!! That's a bit of a factor if you want to look good at the other end" mixp16	0	0	0	1	1
	Cycling safety	Concerns relating to lack of safe infrastructure when cycling on roads and/or with child trailers.	"Being a regular cyclist, in honesty I do not feel safe cycling – waiting on the next near miss to occur" mp23	3	0	1	2	6
Past experiences	Harassment, aggression, and/or unease	Responses describing past experiences relating to and including cat calling, being followed, sexual comments, indecent exposure, uncomfortable situations with strangers	"I have been cat called and have strange men talk to me on buses and trains" fp29	6	11	1	7	25
	Late and unreliable services	Past experiences involving late buses or taxis or being driven past when waiting.	"I've also been driven past by buses when full, or indeed left standing for nearly an hour a couple of times as bus after bus was cancelled without notice or explanation" fu9	0	8	0	1	9
No past experiences or issues	Acknowledgment and/ or avoidant	Haven't experienced anything bad in transport systems but still acknowledges the possibility, or worried about something happening so have avoided potential situations like underground passages, taking public transport, walking in dark etc.	"Although I haven't had a direct experience of this myself, the possibility of it happening puts me off travelling by public transport at night" fp12	1	6	1	1	9
	No bad experiences	Haven't experienced anything bad or has no knowledge of the issue to consider the possibility and make considerations	"I can only speak for myself as a male, and I don't really have a problem travelling on my own or late at night on public transport" mixp11	5	0	2	0	7
Age		Increased personal awareness and life experiences now that older. Have had more uncomfortable experiences when younger.	"If one is an older adult, they might feel more vulnerable and it does not matter if they are male or female" fu12	2	5	1	3	11
Media and news		Discussing the media's contribution to fear of harassment, aggression, or crime	"There is so much fear out there nowadays which is not helped with media and news reporting which	0	1	0	2	3

			encourages people to think that everyone is out to harm them" mixp25					
Male responsibility		Recognition that men can make women feel uncomfortable and bear responsibility for change, including descriptions of precautions, such as crossing the street away from women, not sitting near women.	"I am now more aware that innocently walking a short distance behind a woman on the same route in a quiet area can be intimidating" mp20	2	0	2	1	4
Female consideration of male experience		Sub-category relating to above themes, where women have acknowledged the behaviours and considerations of men (i.e., 11.1.A accounts for a woman considering that men could be concerned about harassment or aggression) See Table A5, below.		0	14	0	6	20
Male consideration of female experience		Sub-category relating to above themes, where men have acknowledged the behaviours and considerations of women (i.e., 12.2 accounts for a man considering that women are more concerned for transport cleanliness). See Table A5, below.		32	0	15	0	47
No gender differences		There are no gender differences in how men or women experience transport – either safety wise, cleanliness needs, accessibility etc., respondent feels that both genders would behave similarly or are subject to the same risks.	"Being male or female, young or old, I think we can all feel unsafe at times" mp6	6	3	3	2	14
Suggestions for improvement	Security and staff	Including more than one conductor on train, guards, working CCTV, theft and unsociable behaviour prevention, crime reporting and sufficient follow up	"we need better policing at the transport hubs" mp19	8	4	2	6	20
	Well-lit stations and routes	To and from stop/ station and safe parking	"Safe parking and well-lit areas are important at stations and bus stops" mixp21	2	2	0	6	10
	Consider the most vulnerable	Transport design is currently based around male default and if systems were designed for the most vulnerable group, it would benefit all	"I think services should be designed for the most vulnerable, and then everyone benefits" mixu10	0	1	0	3	4
	Other	Other suggestions from only one or two respondents, including; Separate gender transport, curfew for dangerous people, no mixed gender toilets	"Having an 'after hours' card that would have to be checked" mp11	3	1	1	0	5

				Male only	Female only	Male mixed	Female mixed	Total
Positive		Generally positive views about local transport systems	"I've never had a problem with public transport, in my view its safer than walking alone or getting a taxi" fp25	2	4	1	3	10

Table A2. Consideration of other's experiences – subcategories 11 and 12.

Category	Sub-category	Description	Example Quote	Number of times mentioned				Total
				Male only	Female only	Male mixed	Female mixed	
FEMALE CONSIDERATION OF MALE EXPERIENCE								
Safety	Harassment, aggression, and/or unease	Female consideration for men being subject to harassment, aggression or similar.	"I think there is a risk to men too, mainly violence or being targeted by someone wanting a fight" fp23	0	4	0	3	7
	Visibility, time of day, or season	Female consideration for men being concerned to travel in the dark, or in the winter	"I would often be more concerned about my teenage son travelling at night" mixu10	0	0	0	1	1
Cleanliness		Female consideration for males being equally concerned for cleanliness on public transport	"I can't imagine there are differences in terms of cleanliness standards" fu20	0	1	0	0	1
Accessibility (due to childcare)		Female consideration for a male need for accessibility due to childcare	"More and more men are taking responsibility for childcare these days, so are making transport decisions based on their children's needs" mixu10	0	0	0	1	1

No past experiences or issues	No bad experiences	Female views that males do not have bad experiences on public transport	"My husband doesn't seem to have these worries as he feels he's much safer as a man and would happily catch the train or walk home in the dark" fp13	0	8	0	1	9
Male behaviour or male personal impact		Female consideration that men are aware of their personal impact	"the man may feel nervous about a woman feeling nervous around him" fp11	0	1	0	0	1
MALE CONSIDERATION OF FEMALE EXPERIENCE								
Safety	Harassment, aggression, and/or unease	Male consideration for women being subject to harassment, aggression or similar.	"Women are frequently harassed on public transit in the U.S….they have a totally different experience from men" mu3	5	0	4	0	9
	Presence of others	Male consideration that women are concerned regarding people in their surroundings.	"Female relatives of mine don't like waiting at bus stops in the dark unless with someone else" mixp12	6	0	3	0	9
	Visibility, time of day, or season	Male consideration for women being concerned to travel in the dark, or in the winter	"My wife, for example, would not feel safe travelling alone on public transport or walking/ cycling at night" mp21	8	0	4	0	12
	Taking precautions	Male consideration that women often take safety precautions in public transport settings.	"My wife used to call me a lot when on the train to warn me about people behaving strangely, approaching her etc." mu10	4	0	1	0	5
Cleanliness		Male consideration that women care about cleanliness either more or just as much as men.	"Women would be more put off from using a public transport system over another if facilities were not up to standard, ie. Cleanliness of toilets" mp17	4	0	1	0	5
Convenience, time, and reliability		Male consideration for women choosing certain transport modes in terms of their convenience.	"My other half uses the car for everything, inc. taking the kids to school even though the school is within walking distance" mu16	1	0	0	0	1
Cycling	Hygiene and appearance	Male consideration that women are concerned for	"If [my partner] has meetings, she will not cycle to work as helmet crushes her hair" mixp15	0	0	2	0	2

		their hygiene and appearance when cycling.					
Cycling safety	Male acknowledgement for women not cycling due to lack of safe infrastructure.	"My wife will cycle on the pavement as she considers it too dangerous to ride on the road" mp24	4	0	0	0	4