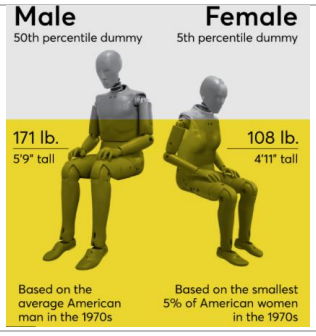
Is Your Research Gender Equitable?

Good research practices and how to apply them to your PhD.

Activity One – Day to Day Equity

What examples of gender inequity can you think of in your day to day life? If you get stuck, think of things that inconvenience you or do not just 'work right', and whether this could be attributed to gender (or other) factors. As a bonus, you could also think of examples of where something has been designed to work exceptionally well to work well across genders.

For example, cinema seats are designed with a one-size fits all approach, resulting in impeded view for shorter people and cramped seating for taller people. As height can be affected by gender, this could be considered an example of day to day (in)equity.

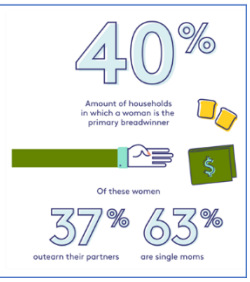


Do you have any examples?

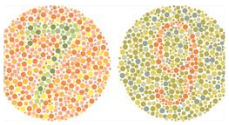
Activity Two – Recognising Gender Factors

How does gender affect your domain? Key points to consider are where gender might play a role in your research, and how the gender of end-users might play a role. Think of the typical gender split across your domain and consider why that might be. It could be 'the way things are,' but it could also be due to gender-related factors.

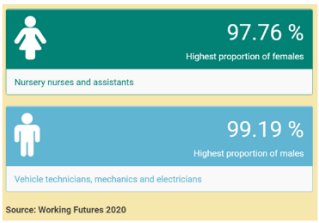
Family and Community Roles- Women and men have traditionally different roles within families and communities e.g. women are more likely to stay at home to look after children. Men are more likely to be the "bread winner" (R29 BRAND EXPERIENCES, 2018).



Medical Conditions- Men and women are more susceptible to certain conditions. This could influence how a system/interface/object/tool/ document should be designed. e.g. men are more prone to red-green colour blindness (National Eye Institute, 2019).



Labour Market- Different job sectors tend to have different compositions of women and men e.g. more pilots, builders and engineers are male, men are more likely to have higher ranking roles (Working Futures, 2020).



User Behaviour- The way that women and men use a system or think about a situation can differ. Their preferences for system interaction may also differ e.g. women may prefer different map layouts than men.

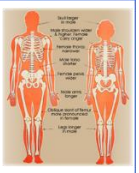
Technology and Equipment- Technology or equipment may not work equally well for men and women e.g. mascara can interfere with eye tracking equipment (Duchowski, 2003; Hassoumi, et al., 2019), females are more prone to simulator sickness or sickness from virtual reality (Flanagan, et al., 2005; Koslucher, et al., 2015; Keshavarz et al., 2018), earring use with headphones, hair bands with helmets.

Perceived Safety and Security- Gender impacts on the requirements for security and perceptions of safety. Females have more constrained travel patterns as they have a greater fear of their personal security.

This is sensitive to different times of the day and the presence of other travellers. The use of public transport (e.g. train, or bus) and walking alone at night is perceived as less safe and therefore less attractive to female travellers. They are more likely to take a taxi or drive as they are less exposed to potential offenders (Stark & Meschik, 2018; Ceccato & Pas, 2017).

To reduce their personal risk when walking at night women stick to well lit areas (Schmucki, 2012), take lengthy detours, talk on the phone, clutch their keys, and wear comfortable shoes in case they need to run (Campbell, 2021).

Ergonometric Standards- Women and men are different on average in height, size, weight, body composition and this effects concepts such as reach and clearance (FPFW, 2017; U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, 2021).

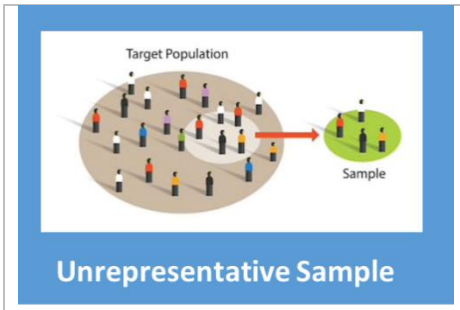


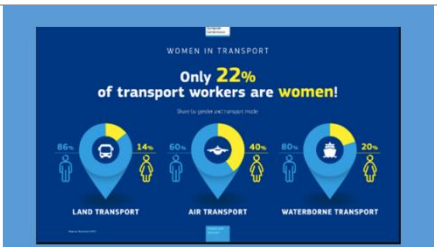
Mobility Needs- The requirements that men and women have to travel vary. Men are more likely to use a car than females and drive longer distances. In London, women are less likely than men to have a full driving licence (58% women, 72% men) (TFL, 2019). Women are more likely to walk so more likely to suffer from air pollution (Mums4Lungs).

Which gender factors relate to your research/domain?

Activity Three – Assessing Causal Factors

Based on the previous activity, think of how gender inequity could occur from research, using the categories below. After you have done this, think of the effect these factors would have on the outcome of your research. If you cannot think of something for a category in your domain, think of a factor that would affect research in general.



 Under-represented in Domain	
 Inaccurate reporting	
 Aggregated Data	
 Unintentional Bias	

Activity Four – Closing the Data Gap

Now that you understand the data gap (how it affects you day-to-day, gender factors present in your domain, and causal factors in your domain), how would you address it? For each of the general research stages below, add bullet points for how you would work towards gender equity. Remember, not all changes have to be big and all encompassing, every little helps.

Proposal	

Review / Assess	
Design	
Data Collection / Test	
Analyse	
Report	

Activity Five – Start, Continue, Stop

Based on this training session, what will you start, continue, and stop, to work towards gender equity when conducting research?

Start	Continue	Stop

Best Practice Guidance: What can you do to close the Gender Data Gap in your research?

Research Stage	**Example Best Practice**
Writing proposals and review of previous work	• Include input from men and women to ensure research is addressing needs of target population. • Check literature justifying research focus is based on gender representative samples. • Does previous research show that gender differences exist? If yes, why do these differences exist? If no, did they look for gender differences? Identify whether gender differences are expected. • Survey/question both men and women to identify gender-related problems with previous iteration/product (e.g. system, design, machine, tool or software).
Design (e.g. studies, products, systems, tools, surveys, observations)	What gender considerations do you need to take into account when designing your study, product, machine, tool, interface, observation? • Design products and write documentation which are suitable for both men and women (take into account gender differences in height, weight, size, medical conditions etc) e.g. make sure touch buttons are big enough for the male finger, make sure females can reach the machines. • In studies, plan for representative samples, recruit sufficient numbers for statistical significant gender disaggregation (if using inferential stats) and use tech & equipment that works equally well for males/females or have back-up plans if this is not possible (e.g. recruit more females to account for simulator sickness, use video recording software in case the eye-tracker does not work) • When designing an observation, plan for representative samples (rather than convenience sampling), recruit female and male observers and choose days, times and places where you can observe male and female participants (e.g. not at night or in the dark).
Data Collection/Test	• Always collect gender demographic information in your research. We propose that you should give participants five options to choose from: ▪ Female ▪ Male ▪ Prefer not to say ▪ Prefer to self-describe……. ▪ Non-Binary • If conducting a study, use gender friendly procedures, have flexible time slots, buffer to ensure gender targets can be met and pilot with mix of attendees. • If using simulation, test using both male and female dimensions (e.g. weight, height). • If conducting user trials, use a representative sample of both males and females. • If conducting an observation, observe an equal number of male and female participants and ensure sufficient time is allocated to the observation so that a representative sample of males and

	females can be observed (rather than relying on convenience sampling). • If modelling data, who is represented in your data? Are you modelling scenarios that represent both men and women's experience?
Analyse	• Gender disaggregate - investigate the differences between males and females (higher samples if not gender balanced). • When analysing and interpreting observation data, ensure male and female assessors analyse the data and conduct inter-rater reliability assessments using male and female assessors.
Report	• Clearly specify number of participants by gender (and other key demographics), number of dropouts by gender and justify reasons if males/females are excluded or if no gender analysis was done. • Specify generalizability of results based on actual sample/tests conducted. • Identify implications of gender on the study results/analysis. • Highlight further work for broader generalizability. • Highlight significant gender differences/null results, in summaries/abstracts/conclusion.