

## Literature Review: Cycling and Gender

### Trends and Findings from Low-Cycling Countries

Women typically represent one third of cyclists in countries like Canada that have low levels of cycling, whereas women represent over 50% of cyclists in high-cycling countries like The Netherlands and Denmark (Garrard et al., 2012; Pucher et al., 2011). Many studies have documented lower rates of cycling among women compared to men (*inter alia*, see (Bourke et al., 2019; Heesch et al., 2012; Shaw et al., 2020). The gender split tends to be less disparate among bike share users compared to private bike use (Fishman, 2016), as has been found among SoBi members (Hamilton Bike Share Inc., 2018). **It is important to address gender differences in cycling because increases in overall cycling levels or mode share do not necessarily mean that more women or more diverse groups are cycling** (Aldred et al., 2016; Pucher et al., 2011).

It has been suggested that “gender equity in cycling is an indicator of cycling-friendly environments” (Garrard et al., 2012) which has prompted researchers and transportation planners to understand women’s cycling needs and to address real and perceived barriers. The gender gap in cycling has been increasingly studied over the past decade, especially since 2015. **Most studies rely on data collected at one point in time in one location (Ravensbergen et al., 2019), which can limit generalizability, and typically only involve women who currently cycle and are of working age.** The influence of other personal factors such as age, ability, and race on women’s cycling levels and behaviour has been studied less in cycling research. Qualitative studies that explore women’s perceptions or experiences of cycling are growing, but still less common in the literature. Finally, researchers are also trying to understand differences in barriers between women who do and do not cycle (Fowler et al., 2017).

**Common trends from the literature on cycling and gender are reported in Figure 1.** See Appendix A for a summary of peer-reviewed studies, local research, and policy documents.

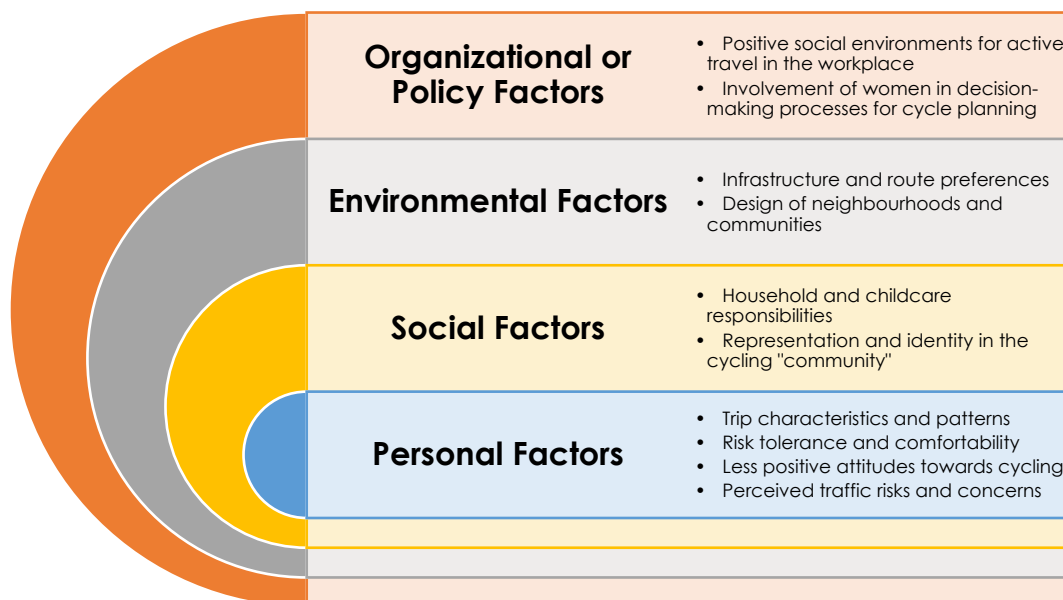


Figure 1. Gender differences in personal, social, and environmental factors can help to explain the gender gap in cycling. Women’s representation in the cycling community and involvement in cycle planning may be indirect influences on cycling levels.

**The evidence consistently suggests that lower risk tolerance and concerns about traffic, as well as household and childcare responsibilities, can explain differences in cycling levels and behaviour between men and women.** Women have a strong preference for protected or off-road infrastructure (*inter alia*, Aldred & Dales, 2017; Copenhagenize Design Co., 2021; Sustrans, 2018; Winters & Zanotto, 2017) likely due to perceived traffic risks and safety barriers (Copenhagenize Design Co., 2021; Garrard et al., 2012). Women have been found to cycle by choice not necessity (Bonham & Wilson, 2012; Le et al., 2019; Singleton & Goddard, 2016) and to make more household trips and trips with children than men (Craig & van Tienoven, 2019). While women often commute to work by bike less than men, they are more likely to make other utilitarian or social trips by bike (Damant-Sirois & El-Geneidy, 2015). The involvement of women in planning and decision-making processes may help to ensure that the design of infrastructure or routes and cycle planning tools address the barriers women face (see Xie &

Spinney, 2018). Finally, women who cycle may have different personal factors (Singleton & Goddard, 2016) and perceived barriers (Fowler et al., 2017) than those who don't. **Additional research is needed to understand the processes that enable and reinforce gendered travel patterns and mobility differences (Ravensbergen et al., 2019) in order to address personal and social factors that discourage or prevent more cycling among women.**

### Strategies to Achieve Gender Parity in Cycling

The vast majority of the literature on this topic comes from low-cycling countries because they are most interested in increasing the participation of women in cycling to be on par with high-cycling countries. Australia and the United Kingdom have conducted most of this research, which means that identified recommendations to achieve gender parity in cycling are likely to be relevant and applicable to Hamilton and other Canadian cities.

Several strategies have been identified or discussed in the literature or policy reports to increase the percentage of women who cycle. These actions are recommended by researchers and transport planners based on evidence (Aldred et al., 2016, 2017; Garrard et al., 2012; International Transport Forum, 2011) or experience developing cycling programs for women (League of American Bicyclists, 2013, 2015).



Figure 2: "Risk iceberg" for women who cycle (adapted from Garrard et al, 2012).

<p><b>Build a dense grid of protected and separated infrastructure.</b> Non-riding women are more likely to identify safety barriers than riding women.</p>	<p><b>Broaden the focus of promotion of cycling beyond commuting to work.</b> Promote a <i>utilitarian</i> cycling culture that normalizes travel by bicycle.</p>	<p><b>Ensure that promotional images or campaigns of cycling feature a variety of bicycle designs that may appeal to a diversity of women.</b></p>	<p><b>Dispel common myths about cycling, address perceived risks (see Figure 2), and highlight convenience and enjoyment of cycling.</b></p>
<p>Source: League of American Bicyclists</p> 			
<p>Compile useful data to understand gender differences in cycling. <b>Explore the needs and preferences of under-represented groups in the cycling community.</b></p>	<p><b>Involve women in cycle planning and decision-making processes.</b> Ensure that cycling outreach targets diverse groups in the community.</p>	<p><b>Implement mentorship and social programs that encourage and support women to adopt cycling.</b></p>	<p><b>Focus on the 5 C's:</b> Comfort Convenience Confidence Consumer Products Community</p>

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