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Cycling by Choice or Necessity? Exploring the Gender Gap in Bicycling in Oregon

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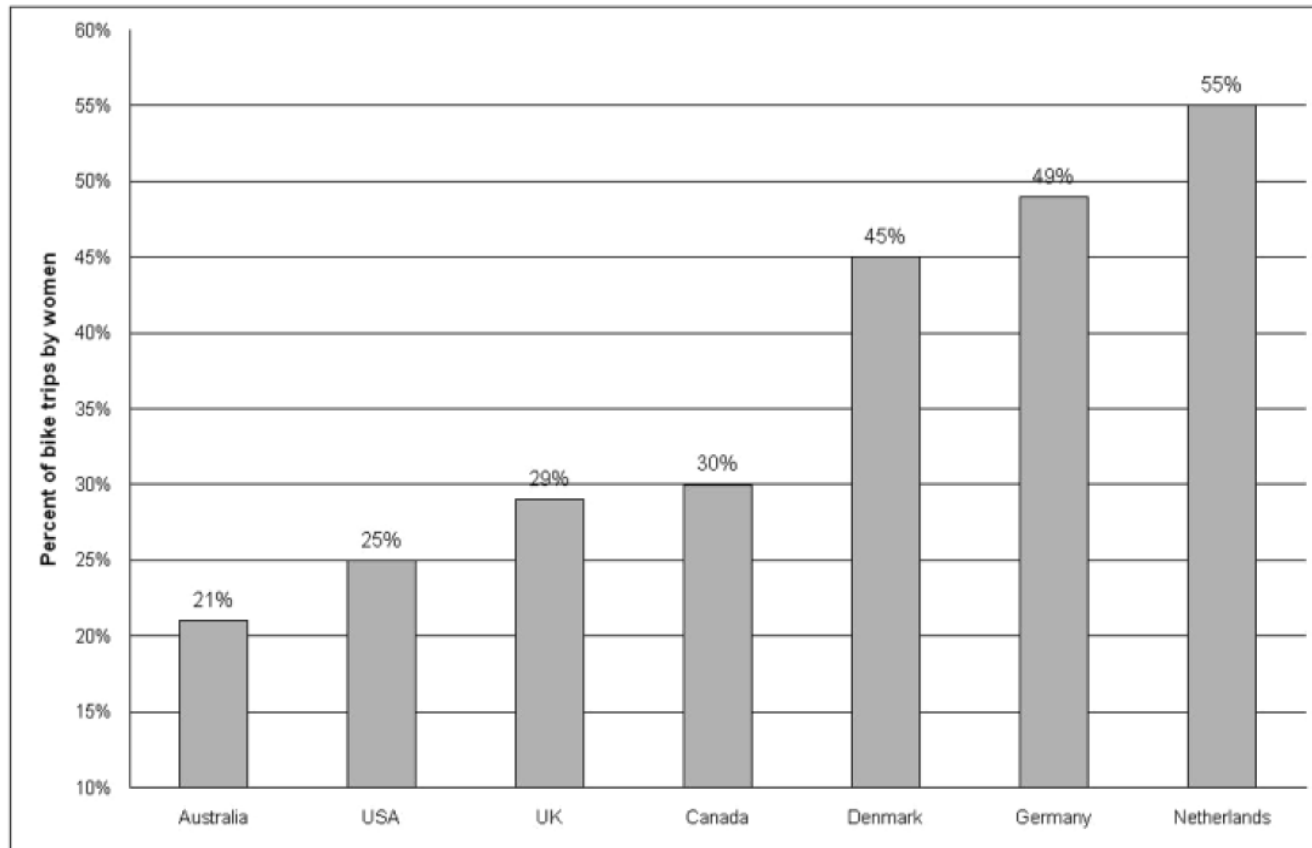
Cycling by choice or necessity? Exploring the gender gap in bicycling in Oregon

Patrick Singleton & Tara Goddard
Portland State University

Friday Transportation Seminar Series
29 January 2016 | Portland, OR



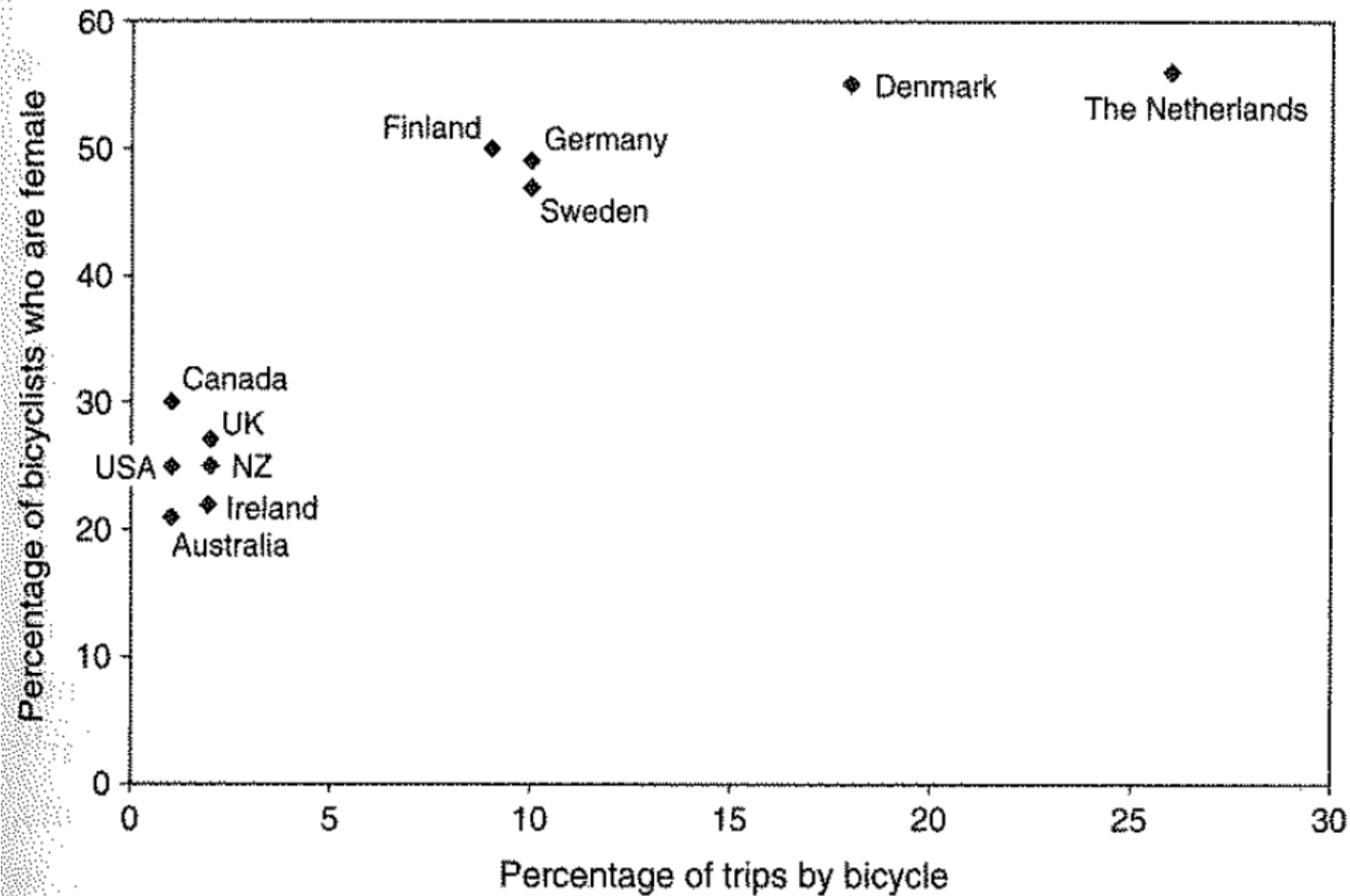
Gender gap in bicycling



Sources: German Federal Ministry of Transport (2003); U.S. Department of Transportation (2003); Danish Ministry of Transport (2005); Statistics Netherlands (2005); Australian Bureau of Statistics (2007); Department for Transport (2007) and information provided directly by bike planners in Canadian provinces and cities

Pucher, J., and R. Buehler. Making cycling irresistible: Lessons from the Netherlands, Denmark and Germany. *Transport Reviews*, Vol. 28, No. 4, 2008, pp. 495–528.

Gender gap in bicycling



Garrard, J., S. Handy, and J. Dill. Women and cycling. In J. Pucher and R. Buehler (Eds.), *City Cycling* (pp. 211–234). The MIT Press, Cambridge, MA, 2012.

Gender gap in bicycling

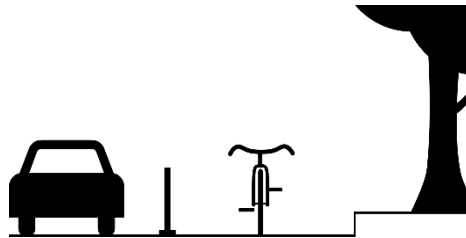
- **Goal: to understand bicycling's gender gap**
- **Importance of closing gender gap**
 - Health
 - Well-being
 - Access to jobs, services, and community



Gender gap in bicycling

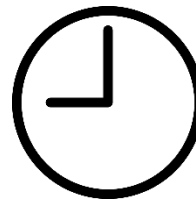
- Explanations

- Bicycle facility preferences & safety perceptions



<https://www.flickr.com/photos/bike/196792901>

- Household responsibilities & time constraints



<https://www.flickr.com/photos/krawcowicz/4279213591/>

- Social normative gender roles

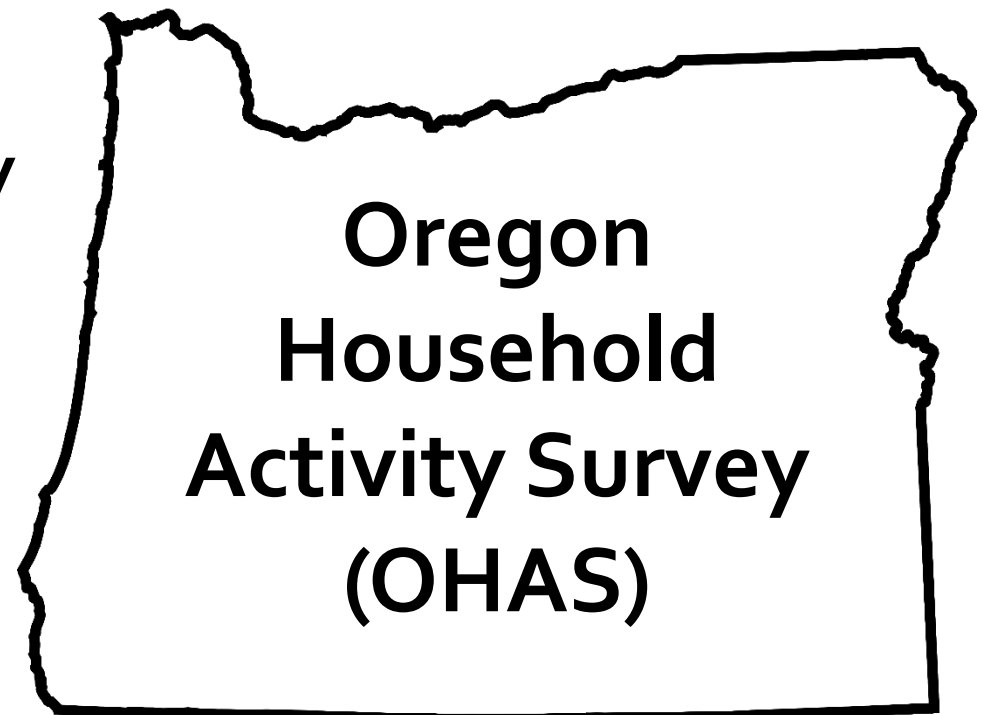
- **Our hypotheses**
 - **Household maintenance responsibilities:**
 - Women with children → ↓ bicycling
 - Women with maintenance activities → ↓ bicycling
 - Single women → ↑ bicycling
 - **Limited means and mobility options:**
 - Low-income women → ↑ bicycling
 - Women with ↓ vehicles → ↑ bicycling

- **Method**
 - **Travel behavior: cross-sectional, one-day**
 - **Bicycle use by gender across demographic and household variables**
 - **For any characteristic, looked for reduced or increased gender gap in bicycling**
 - **Suggest possible interventions; or identify target populations for interventions**

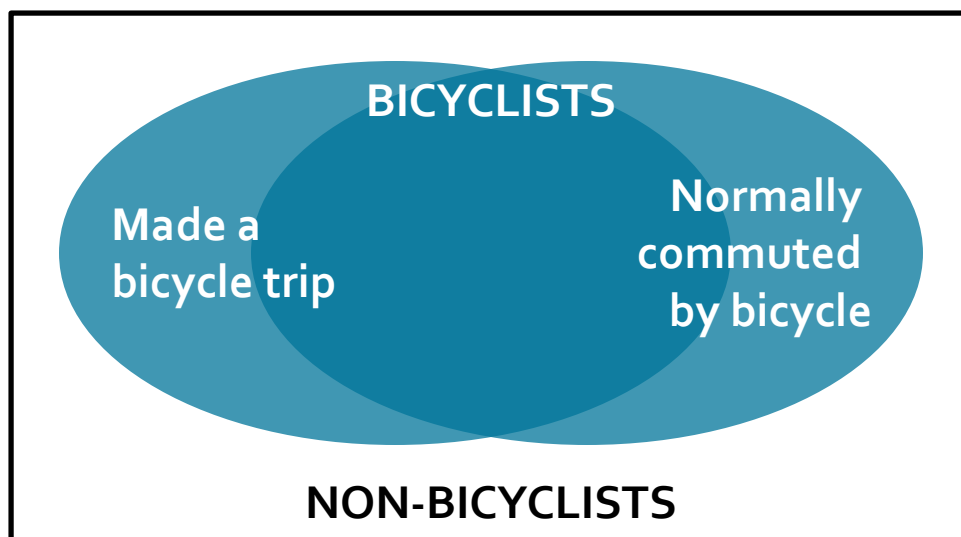
- **Data**

- One-day,
household-based,
travel diary survey
- Weighted
- 30,090 adults
(age 18+)

2009–2011

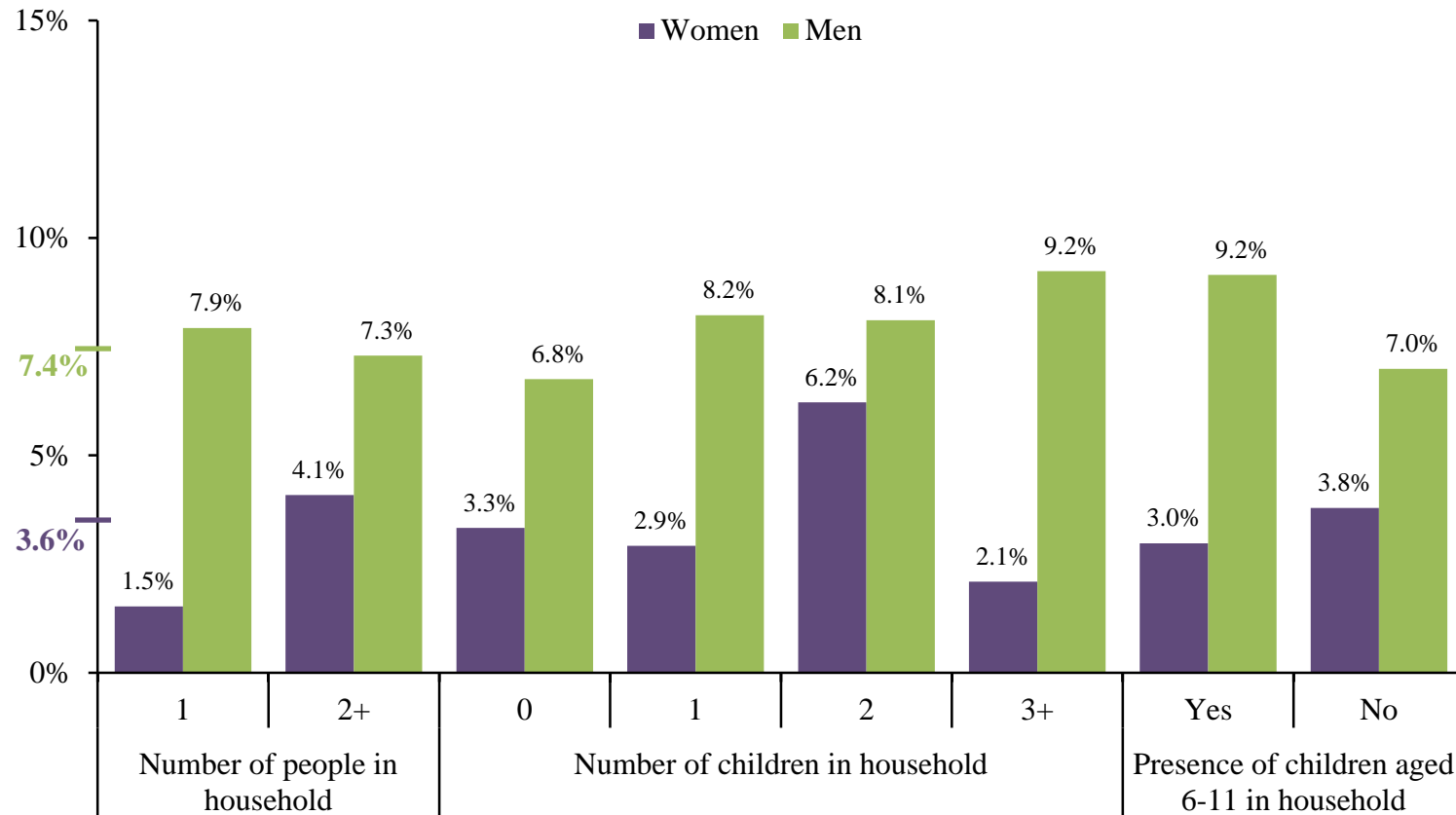


- **Bivariate analysis**
 - **Pearson's chi-squared tests of independence, two-way contingency tables**

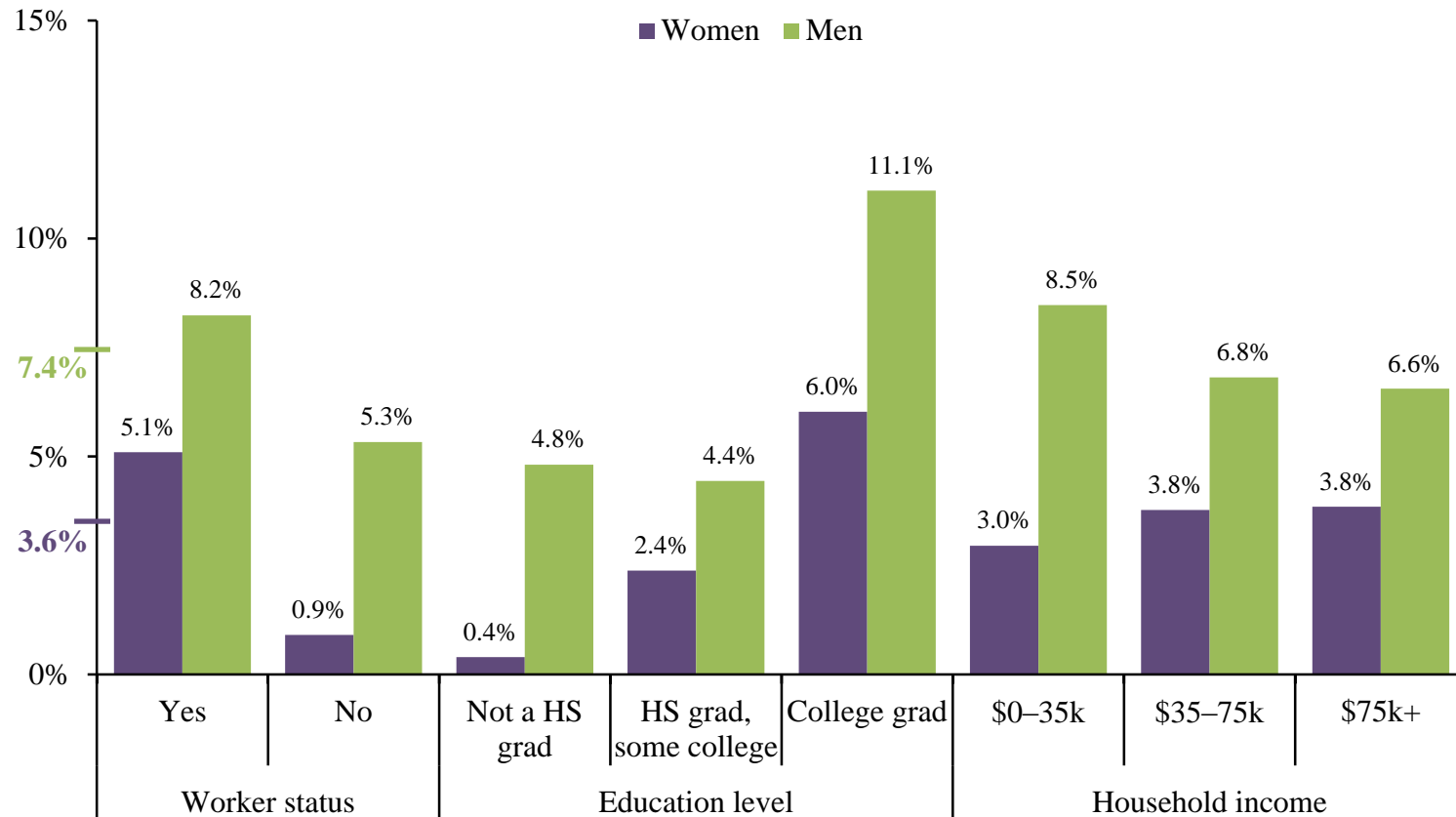


<i>Bicycle use</i>	<i>Women</i>	<i>Men</i>
Made a bicycle trip	2.8% (453)	5.5% (768)
Normally commuted by bicycle	2.2% (356)	4.8% (665)
Bicyclists	3.6% (590)	7.4% (1,023)

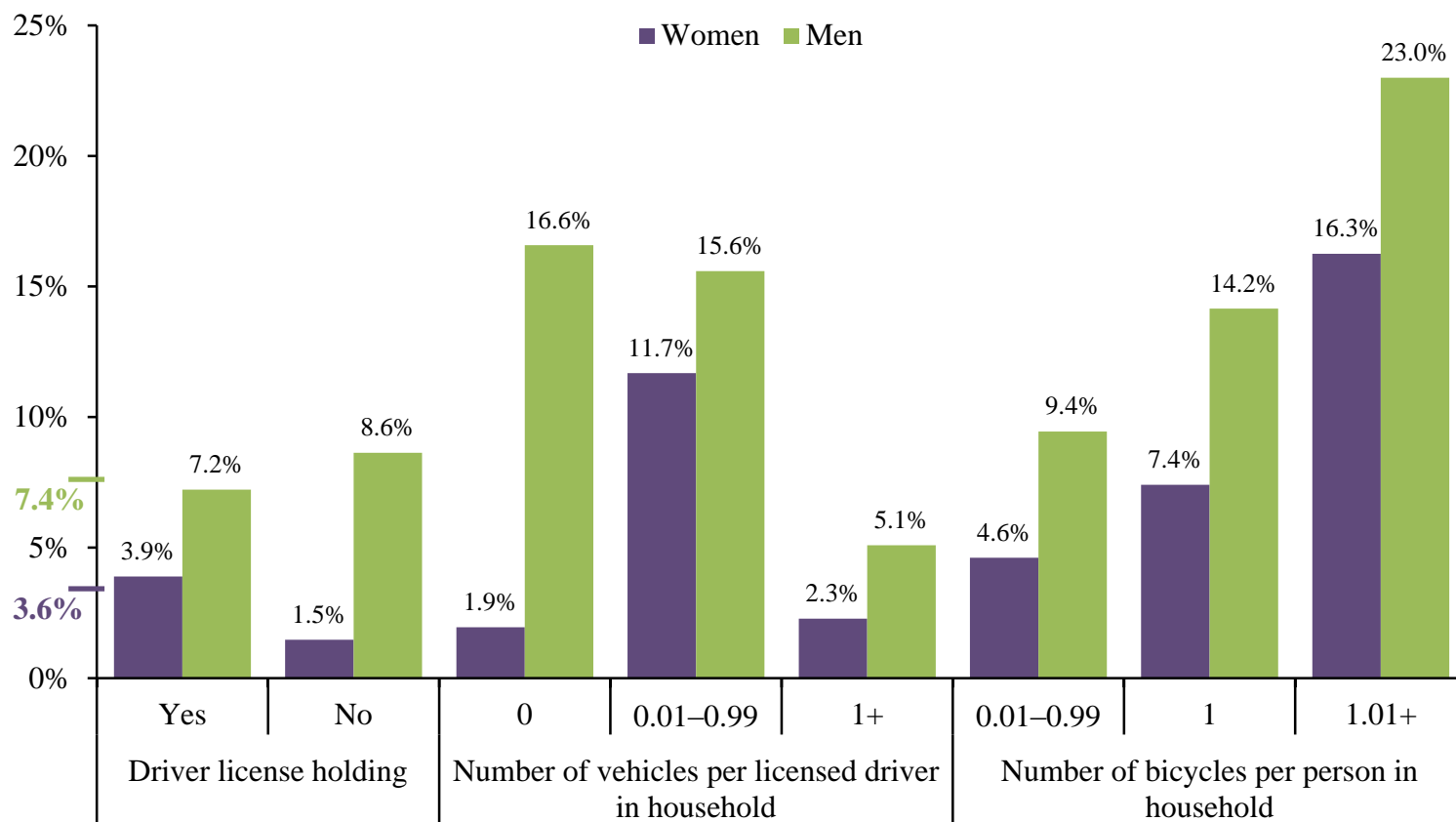
Percentage of bicyclists by gender for demographics



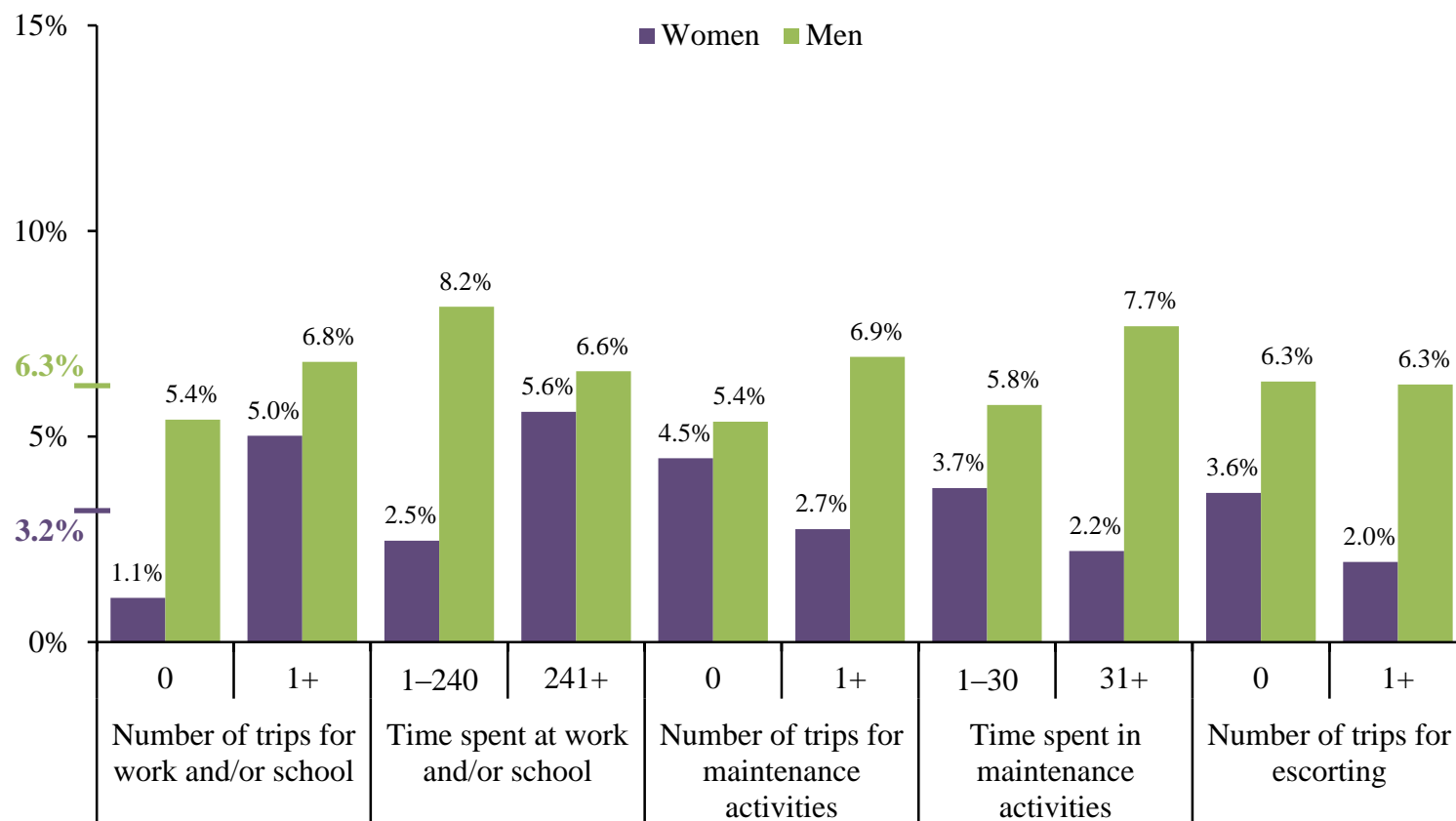
Percentage of bicyclists by gender for socioeconomics



Percentage of bicyclists by gender for mobility characteristics



Percentage of bicyclists by gender for trip and activity characteristics



- **Women, household roles, and bicycling**
 - Household maintenance trip-making; time spent on maintenance activities:
 - Women less likely to bicycle; men more likely.
 - Women made more maintenance trips, and spent more time on maintenance activities.
 - Presence of children:
 - Women with 2+ children more likely to bicycle.
 - Women with children aged 6–11 slightly less likely to bicycle; men more likely.

- **Bicycling as a choice**
 - Women with more economic means and mobility options were more likely to bicycle:
 - ↑ income, employed, Friday, driver license, motor vehicle access, ↑ bicycles.
- **Bicycling (or not) by necessity**
 - Women with less economic means and limited mobility options were less likely to bicycle:
 - < HS degree, not working, low-income HH, no work/school trips, no driver license, zero-vehicle HH.

- **Potential policy implications**
 - **Target low-bicycling women:**
 - Living alone or in single adult HH, < HS education, not working, no driver license, and/or living in low-income or zero-vehicle HH.
 - **Interventions:**
 - Infrastructure installations, awareness-raising, training, skills-building, and social events.



- **Future work**
 - **Multivariate model of bicycling (gender × other variables)**
 - **Multi-day travel survey, longitudinal data**
 - **Data on built environment, bicycle facilities, safety, attitudes and preferences**
 - **External validation of findings (beyond Oregon)**
 - **Supplementary qualitative interviews, case studies, ..., to ask: Why?**

Questions?



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