

## DATA INSIGHTS

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# What makes people more likely to cycle to work?

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Even though cycling is inexpensive and healthy, only 2% of people in Scotland commute to work by bicycle. As part of our research we wanted to know what factors predict whether an individual cycles to work or not?

## WHAT WE DID

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Our current research on whether cycling to work benefits mental health has also allowed us to investigate the population's likelihood to cycle and what factors predict whether an individual cycles to work or not.

Our work uses data from the City of Edinburgh and Glasgow City Council areas in 2011, the same time the population census was collected. In the census, all respondents were asked: How do you usually travel to your main place of work or study (including school)?

Responses included the following:

- driving a car or van; passenger in a car or van;
- on foot;
- bus, minibus or coach;
- train, underground, subway, metro, light rail or tram;
- taxi, bicycle;
- motorcycle, scooter or moped;
- work or study mainly at or from home
- and other

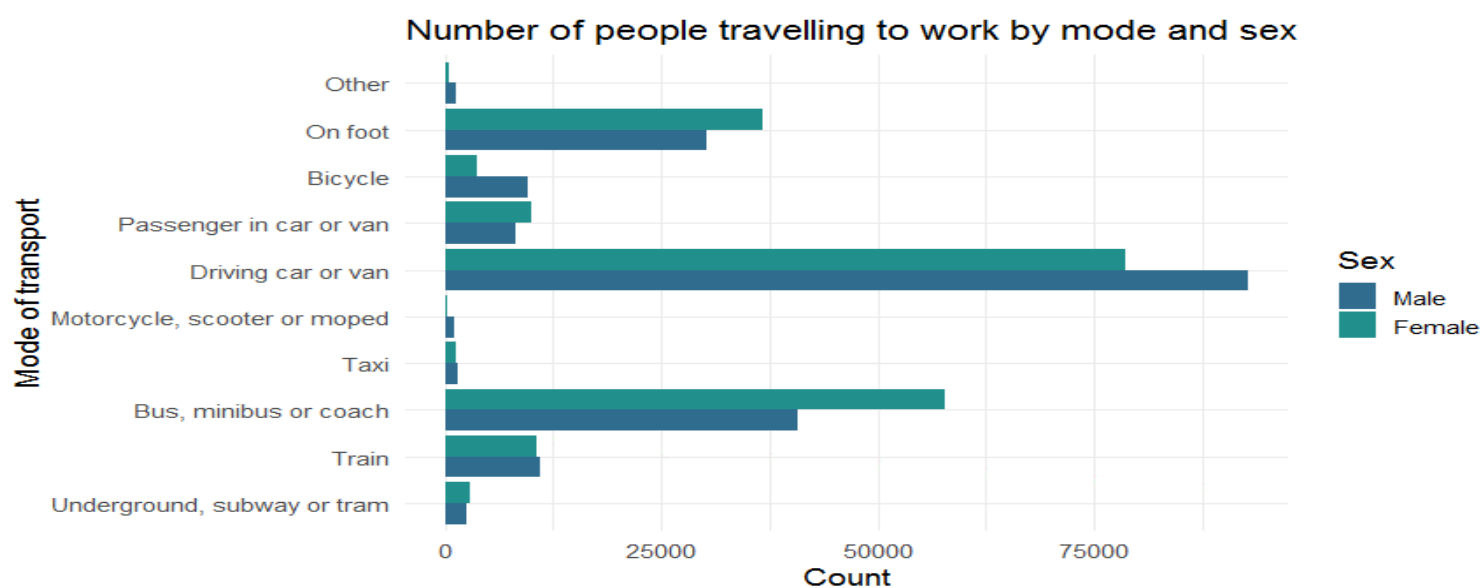
As we are specifically interested in commute journeys, we excluded those who work mainly at or from home and limited our data to those aged 16–74 with a current job on the night of the census. We calculated the level of cycling to work as the proportion of all people in employment who travelled to work. The cycle route data were made computer readable from cycle route maps at the time of the census.

Geographic Information System (GIS) was used to calculate straight-line distances from the centre of a postcode for an individual's place of residence to their nearest cycle path.

We used a statistical model to predict which factors influenced whether a person cycled to work or not.

## WHAT WE FOUND

From our descriptive statistics, we can see that at the 2011 census, in Glasgow and Edinburgh, men were more likely than women to drive a car or van to work, cycle, take a train or taxi. Whereas women were more likely than men to walk, be a passenger in a car or van or take a bus, minibus or coach (Figure 1).



We found evidence from our modelling to suggest that the following factors influence whether a person cycles to work or not:

- cycle commuting decreases the further someone lives from the nearest cycle path (distance from home to cycle path),
- cycling to work decreases with age,
- women are the sex less likely to cycle commute than men,
- those with worse self-reported health are less likely to cycle commute,
- those in managerial, administrative and professional occupations are more likely to cycle to work than those in other occupations (National Statistics Socio-economic Classification (NS-SEC) Coding Tool), and
- there is an interaction between distance from home to cycle path and gender. Women are already less likely than men to cycle, but this interaction tells us that women are increasingly less likely to cycle the further they live from a cycle path.

These findings contribute to the existing literature that suggests that a person's residential proximity to the nearest cycle path increases their propensity to cycle commute.

It is particularly interesting to note that there is an interaction between distance from home to cycle path and gender, indicating that women are increasingly less likely to cycle to work than men the further they live from a cycle path. This supports the argument that cycling to work (and travel in general) is a gendered issue.

Women's journeys tend to be more complicated than men's as they are more likely to trip chain, e.g. dropping children off at school on the way to work or collecting shopping on the way home. These journeys are examples of encumbered travel and they make cycling to work more difficult for women. It will be important to understand this further in developing new cycling infrastructure.

## WHY IT MATTERS?

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This work on propensity to cycle is not the focus of our research and some may argue that this is an obvious finding; however, it is important that the claim that those who live closer to cycle paths are more likely to cycle is backed up with evidence. A particular strength of our research is that we use administrative data that captures the whole population and is not subject to the biases that can affect survey data. This can be used in conjunction with qualitative analyses that have sought to understand why people choose to cycle to work and what policy interventions to cycle infrastructure and workplace facilities would be required to change a population's cycling habits.

The Scottish Government have strategies to make the nation healthier. Two of its national performance indicators are to: increase physical activity and increase the proportion of commutes made by active transport. This research provides further evidence on the effects of cycle infrastructure on cycling behaviour, which can help to inform policies to promote cycling to work.

## WHAT'S NEXT?

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These findings support the need to understand the barriers to cycling to work which can be ascertained using qualitative analysis. Once new policies are implemented, we will be able to use quantitative data analysis to evaluate them.

We will build on this work in our research looking at whether cycling to work benefits mental health which we will report on soon.

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