

# Do Multi-Use Path Accessibility and the Clustering Effect Play a Role in Residents' Choice of Walking and Cycling?

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This research investigates whether, for people who do not walk or cycle at all, the decision not to use active modes is associated with the lack of accessibility to multi-use paths (MUPs) or their own travel attitude of not liking walking or cycling; for those who walk or cycle, the question is whether accessibility to MUPs and the clustering effect encourage them to do more walking or cycling.

## Study Methods

Accessibility to multi-use paths by walking or cycling is first calculated for Salt Lake City, Utah. The metric measures the total length of multi-use paths (walkway and bikeway) a resident could reach from their household location with a 15-min walk or 20 min of cycling based on the average travel time from the 2012 Utah Travel Survey. For spatial modeling, all typical explanatory variables from the literature (individual socioeconomic, built environment features, and travel attitudes) are also collected, together with two new added variables (MUP accessibility and the clustering effect). We regarded this as

a methodological contribution that has been neglected in past studies. Then, a spatial probit model is estimated to see whether and why people walk or cycle. A spatial autoregressive model is also estimated to examine what factors encourage walkers or cyclists spend more time with active modes.

## Findings

Most typical socioeconomic characteristics (e.g., gender, age, employment, race, bike and vehicle ownership, and number of adults in family), attitudes towards walking and cycling, and some built-environment features (e.g., street intersection density, land-use diversity) do affect people's decisions about active mode choices (walking and biking) to some extent. However, the current distribution of active transportation investments in terms of accessibility to multi-use paths only plays a role for existing walkers and cyclists. In other words, providing better MUP accessibility might not necessarily encourage people who already walk and cycle. Moreover,

respondents' active travel behavior is affected by their neighbors in two opposite ways. A clustering effect exists among doers (walkers and cyclists), meaning that walkers and cyclists spend more time in walking and cycling if they see more doers around the community/city. Between doers and non-doers, there is a competing effect, meaning that a resident who walks or cycles is more likely to live with neighbors who do not do so, possibly due to the lack of trail-activity culture, the preference for using other means for exercise, trail congestion, or different lifestyles.

The two-level spatial modeling approach in this study gives decision-makers empirical evidence towards understanding the importance of separating the design and promotion of active transportation strategies for different groups of users. The study considers all salient correlates (typical and novel) of active travel behavior.

### Policy/Practice Recommendations

The results suggest that decision-makers need to design different active transportation strategies to promote active travel for the two different groups: doers (walkers and cyclists) and non-doers (non-walkers and non-cyclists). For doers, it is important to improve the existing multi-use paths by increasing the amount of MUPs or enabling better connectivity; it is also important to use the clustering effect as leverage to create a walking and cycling culture. For non-doers, on the other hand, it would be more efficient to adopt non-physical strategies, since the supply of physical infrastructure does not play a role in these residents' active travel behavior, and a walking or cycling culture might not exist yet.

### About the Authors

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### To Learn More

For more details about the study, download the full report at [transweb.sjsu.edu/research/2011](http://transweb.sjsu.edu/research/2011)



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