Making Bicycling Comfortable Using Video Surveys

Inform policy decisions pertaining to road design, bicycle planning, and investment needs for bicycling to become a mainstream travel mode in US cities.

WHAT IS THE NEED?

Understanding what environments are comfortable and safe for bicyclists is essential for increasing bicycling, particularly for non-experienced riders. Surveys probing people’s qualitative perceptions about bicycling environments thus have a key role in bicycle planning.

In this study, the research team proposes to use survey data to analyze bicycling comfort and its relationship with socio-demographics, bicycling attitudes, and bicycling behavior. They will use an existing survey of students, faculty, and staff at University of California (UC), Davis (population size is 3089) who rated video clips of bicycling environments based on their perceived comfort as a part of the UC Davis annual Campus Travel Survey.

The researchers use video clips from a variety of urban California state highways around the Bay Area where bicycling rates vary. They expect these results will help show the infrastructure minimums needed for most people to comfortably bicycle. In addition, the research team expects to identify groups of people, specifically the types of bicyclists, based on their comfort needs. Groups they expect to look closely at are those with low incomes and low rents, women, those with less bicycling confidence, and those who rarely rode before living in Davis.
WHAT ARE WE DOING?

The researchers will conduct the following:

1. Writing computer code (R statistical language) to read, examine, and filter the survey data. Since survey data tends to have many missing values, data may need to be imputed at this step. The survey data will also be transposed into a workable dataset for analysis which includes conversion of qualitative data into quantitative representations.

2. Writing computer code (R statistical language) to analyze the survey data. It will generate a series of descriptive and bivariate statistics of the processed survey data. The research team will also employ a series of statistical models to analyze multivariable relationships.

3. Formatting the data so it can easily be shared amongst the transportation research and professional community.

4. Preparing detailed research report. It will include background information including a literature review, methodological details of the survey design, processing and analysis of the data, results and discussion, and policy implications for the research.

5. Conducting a webinar hosted at UC Davis with one or more presentations of research material at the Annual Transportation Research Board Conference 2020. The webinar will discuss specifically about the application of the research for local/regional/state policy decisions.

WHAT IS OUR GOAL?

This research will help policy makers to understanding what environments are comfortable and safe for bicyclists, to increase bicycling particularly for non-experienced riders. Furthermore, it will inform transportation planners the needs for road design, planning, and investment for making bicycling a mainstream a travel mode.

WHAT IS THE BENEFIT?

This research will inform policy decisions pertaining to road design, bicycle planning, and investment needs for bicycling to become a mainstream travel mode in US cities and improve mobility for disadvantaged populations. It will increase ridership of people of low incomes and low rents, women, and those with less bicycling confidence.

WHAT IS THE PROGRESS TO DATE?

In the last quarter, the researchers completed the primary background analyses of the project. Using these findings, they are currently exploring ways of visualizing the modeling results to better communicate riders’ bicycling comfort level.

IMAGE

Image 1: Example of video used in survey