MPC-603 Bicycle safety roundabouts

Description of data processing and data analyses for comfort analysis

Data processing

1. Prepare data for comfort analysis.
   1. *Folder*: “Analysis/Comfort analysis/Data cleaning”
   2. *Script*: “create\_comfort.R”
      1. Create attributes of scenarios. Merge survey data with attribute data. Convert values to integers (dummy coding). Subset columns for comfort analysis. Process some data to be numeric. Create missingness dummy variables. Convert levels of factors. Create dummy variables.
   3. *Inputs*: “dat3.rds”
   4. *Outputs*: “Comfort.rds”, “Comfort.csv”
2. Calculate descriptive statistics.
   1. *Folder*: “Analysis/Comfort analysis/Data cleaning”
   2. *Script*: “describe\_data.R”
      1. Calculate descriptive statistics for dataset.
   3. *Inputs*: “Comfort.rds”
   4. *Outputs*: none, “Descriptives.xlsx”

Data analysis

1. Comfort analysis: multivariate ordered probit within structural equation model
   1. *Folder*: “Analysis/Comfort analysis/Comfort analysis”
   2. *Script*: “analysis.R”
      1. Load, prepare, and inspect datasets.
      2. Model 1: ordered probit of overall comfort, using roundabout attributes and personal characteristics
      3. Model 2: ordered probit of overall comfort, using 5x situational comfort, roundabout attributes, and personal characteristics
      4. Model 3: ordered probit of 5x situational comfort, using roundabout attributes and personal characteristics
      5. Model 4: multivariate ordered probit within structural equation model (combination of models 2 and 3)
      6. Save models.
   3. *Input*: “Comfort.rds”
   4. *Output*: “mods.rds”, “Results.xlsx”