Working Paper: Discrete Choice Analysis on Household Preferences

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## Model with City observations

##   
## Call:  
## mlogit::mlogit(formula = choice ~ 1 | commute + destinations +   
## homes + streets + transit + ParkingDriveway + ParkingOffStreet +   
## NominalPrice + alt + chid, data = subset(logitdata2, place\_type\_city\_a ==   
## "1"), shape = "long", alt.var = "alt", id = "id", chid.var = "chid",   
## method = "nr", print.level = 0)  
##   
## Frequencies of alternatives:  
## 1 2   
## 0.48893 0.51107   
##   
## nr method  
## 4 iterations, 0h:0m:0s   
## g'(-H)^-1g = 0.00444   
## successive function values within tolerance limits   
##   
## Coefficients :  
## Estimate Std. Error t-value Pr(>|t|)   
## 2:(intercept) -2.2140e-01 9.4724e-02 -2.3374 0.019421 \*   
## 2:commute -4.1033e-01 5.7768e-02 -7.1030 1.221e-12 \*\*\*  
## 2:destinations -4.3225e-01 5.7283e-02 -7.5460 4.485e-14 \*\*\*  
## 2:homes 4.2486e-01 6.4868e-02 6.5497 5.765e-11 \*\*\*  
## 2:streets 3.7690e-01 5.7792e-02 6.5217 6.953e-11 \*\*\*  
## 2:transit -1.8564e-01 5.7978e-02 -3.2019 0.001365 \*\*   
## 2:ParkingDriveway 1.1108e+00 6.4796e-02 17.1428 < 2.2e-16 \*\*\*  
## 2:ParkingOffStreet -8.4054e-02 8.4644e-02 -0.9930 0.320692   
## 2:NominalPrice 4.5198e-06 8.5065e-07 5.3134 1.076e-07 \*\*\*  
## 2:chid 1.3140e-08 5.2416e-06 0.0025 0.998000   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Log-Likelihood: -3564.8  
## McFadden R^2: 0.095817   
## Likelihood ratio test : chisq = 755.54 (p.value = < 2.22e-16)

## Model with Suburban Observations

##   
## Call:  
## mlogit::mlogit(formula = choice ~ 1 | commute + destinations +   
## homes + streets + transit + ParkingDriveway + ParkingOffStreet +   
## NominalPrice + alt + chid, data = subset(logitdata2, place\_type\_suburban\_a ==   
## "1"), shape = "long", alt.var = "alt", id = "id", chid.var = "chid",   
## method = "nr", print.level = 0)  
##   
## Frequencies of alternatives:  
## 1 2   
## 0.49096 0.50904   
##   
## nr method  
## 4 iterations, 0h:0m:0s   
## g'(-H)^-1g = 4.02E-07   
## gradient close to zero   
##   
## Coefficients :  
## Estimate Std. Error t-value Pr(>|t|)   
## 2:(intercept) -4.3529e-01 7.3797e-02 -5.8985 3.668e-09 \*\*\*  
## 2:commute -4.2272e-01 4.6049e-02 -9.1798 < 2.2e-16 \*\*\*  
## 2:destinations -3.5540e-01 4.5494e-02 -7.8121 5.551e-15 \*\*\*  
## 2:homes 7.4767e-01 5.1508e-02 14.5157 < 2.2e-16 \*\*\*  
## 2:streets 4.1995e-01 4.5895e-02 9.1502 < 2.2e-16 \*\*\*  
## 2:transit -1.7254e-01 4.6321e-02 -3.7248 0.0001954 \*\*\*  
## 2:ParkingDriveway 1.3490e+00 5.1641e-02 26.1224 < 2.2e-16 \*\*\*  
## 2:ParkingOffStreet -9.7793e-02 6.7099e-02 -1.4574 0.1449982   
## 2:NominalPrice 4.2205e-06 5.9039e-07 7.1487 8.762e-13 \*\*\*  
## 2:chid -6.0571e-06 4.1757e-06 -1.4505 0.1469067   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Log-Likelihood: -5712.8  
## McFadden R^2: 0.13315   
## Likelihood ratio test : chisq = 1754.9 (p.value = < 2.22e-16)

## Model with Small town/Rural Observations

##   
## Call:  
## mlogit::mlogit(formula = choice ~ 1 | commute + destinations +   
## homes + streets + transit + ParkingDriveway + ParkingOffStreet +   
## NominalPrice + alt + chid, data = subset(logitdata2, place\_type\_SmallTownRural\_a ==   
## "1"), shape = "long", alt.var = "alt", id = "id", chid.var = "chid",   
## method = "nr", print.level = 0)  
##   
## Frequencies of alternatives:  
## 1 2   
## 0.51006 0.48994   
##   
## nr method  
## 4 iterations, 0h:0m:0s   
## g'(-H)^-1g = 6.51E-08   
## gradient close to zero   
##   
## Coefficients :  
## Estimate Std. Error t-value Pr(>|t|)   
## 2:(intercept) -8.2937e-01 1.2515e-01 -6.6271 3.425e-11 \*\*\*  
## 2:commute -2.0943e-01 7.5390e-02 -2.7780 0.005469 \*\*   
## 2:destinations -3.4988e-02 7.4960e-02 -0.4668 0.640673   
## 2:homes 1.0021e+00 8.6145e-02 11.6323 < 2.2e-16 \*\*\*  
## 2:streets 4.1318e-01 7.5798e-02 5.4511 5.007e-08 \*\*\*  
## 2:transit -2.1895e-01 7.6050e-02 -2.8790 0.003989 \*\*   
## 2:ParkingDriveway 1.2512e+00 8.5776e-02 14.5873 < 2.2e-16 \*\*\*  
## 2:ParkingOffStreet 3.9022e-03 1.1011e-01 0.0354 0.971728   
## 2:NominalPrice 3.2150e-06 1.0634e-06 3.0233 0.002500 \*\*   
## 2:chid -5.4730e-06 7.0197e-06 -0.7797 0.435588   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Log-Likelihood: -2107.3  
## McFadden R^2: 0.12611   
## Likelihood ratio test : chisq = 608.22 (p.value = < 2.22e-16)

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