Exploring Global Variables in ADAM

CE3201 Lab #1-2

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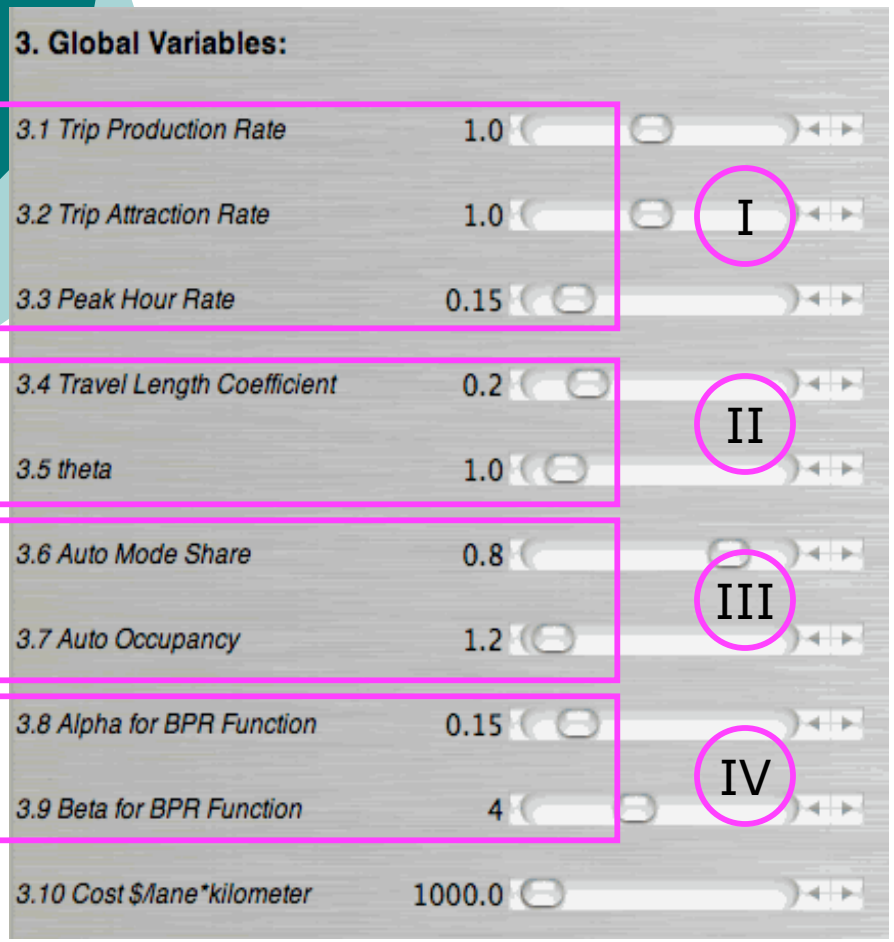
Global Variables



I. Trip Generation

#Person Trips Produced=#Workers* Trip Production Rate

#Person Trips Attracted=#jobs* Trip Attraction Rate

II. Trip Distribution

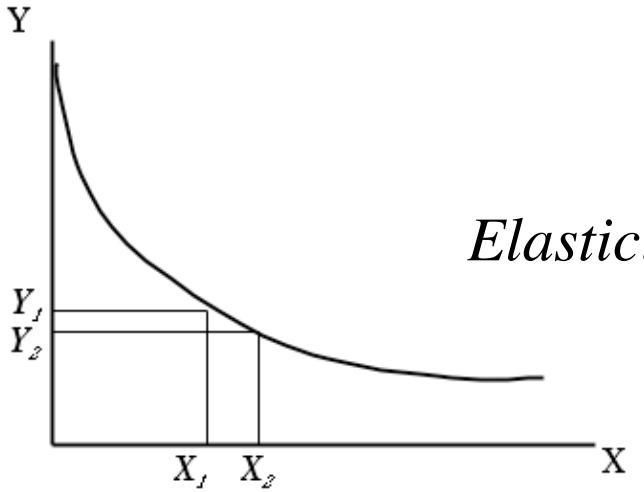
III. Mode Choice

#Auto Trips=#Person Trips* Auto Mode Share/Auto Occupancy

IV. Traffic Assignment

Elasticity

- Measure the responsiveness of one variable (**Y**) to changes in another (**X**) by calculating the percentage change in **Y** in response to a percentage change of **X**.



$$Elasticity = \frac{\%Change\ in\ Y}{\%Change\ in\ X} = \frac{\frac{Y2 - Y1}{Y1}}{\frac{X2 - X1}{X1}}$$

Example:Trip Production Rate

	X1=1.0(default)	X2=0.5	X3=1.6
vht	1792	900	2853
vkt	42714	21599	65329
#Trips	25926	12921	40566

Y-vht: Y1=1792 Y2=900 Y3=2853

Elasticity from X1 to X2

$$E = \frac{\%changeY1}{\%changeX1} = \frac{\frac{Y2-Y1}{Y1}}{\frac{X2-X1}{X1}} = \frac{\frac{900-1792}{1792}}{\frac{0.5-1.0}{1.0}} = 0.996$$

Elasticity from X1 to X3

$$E = \frac{\%changeY1}{\%changeX1} = \frac{\frac{Y3-Y1}{Y1}}{\frac{X3-X1}{X1}} = \frac{\frac{2853-1792}{1792}}{\frac{1.6-1.0}{1.0}} = 0.987$$

Assignment 2

- Sioux Falls network
- Alter one global variable at a time
- A short report (2-3 pages) including a table for elasticity.
- Your understanding of the role of each global variable and the concept of elasticity.
- Comment on your results.