Urban Economics and Simulations

P. v. Mouche

Assignment B

This assignment concerns the discrete Hotelling game. See Slides B.

Download the Netlogo program uec.nlogo (see my webpage or brightspace). I developped a first version of this program. Then it was further developped by Dr. G. Hengeveld.

1. The Hotelling game allows for various interpretations, for example the location/vendor/consumer interpretation as explained in Slides B. So this concerns a location model. Compare this location model with the location model in Chapter 1 in the Text Book of Brueckner. Discuss assumptions, differences, ...

2. Using the Netlogo program, find out how existence of a Nash equilibrium depends on the number of vendors (2-10) and the number of consumers (2-10).

   Only use the following buttons: number-of-vendors, x-dimension (for number of consumers), dimensionise-world (for better fitting to the screen), setup, go (for finding an equilibrium), emergency break! (for stopping if there is no equilibrium). Do not use the w button; $w = 1$ should hold. Also do not use the $y - dimension$ button; $y - dimension = 1$ should hold.

Please handle in, by email to pierre.vanmouche@wur.nl, before June 10.

PS: if You prefer You may do the assignment with an Netlogo program dealing with the Braess' paradox or with the El Farol Bar game. In this case please contact me for further details.