Dynamic matching procedures for causal inference in social networks

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Abstract

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1 Introduction

2 Network Creation Model

Similar to ... Shalizi and Thomas (2011), we developed a network creation model which is ran in two stages. In a first stage, we allow each node to nominate a friend. In the second stage we compute the happiness of all the nodes.

For each node we create a set of candidates based in probability: $\text{logit}^{-1}(-3||(X_i, Z_i) - (X_j, Z_j)||)$. Then from the set of candidates, we pick one at random to be the nominated friend. After the edges have been added, we compute the happiness according to the following equation:

$$h_{i,t} = w_0 + w_1 h_{i,t-1} + w_2 \sum h_{j,t} + w_3 \sum h_{j,t-1} + w_4 X_{i,t} + w_5 Z_{i,t}$$

References

Shalizi, C. R. and A. C. Thomas (2011). Homophily and contagion are generically confounded in observational social network studies. *Sociological methods & research 40*(2), 211–239.