

Empirically-grounded simulation models for networks and network-mediated processes

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Abstract: In this paper we show how to construct simulation models for networks and network-mediated social processes using data obtained from multi-wave snowball and related sampling schemes. By snowball sampling schemes, we mean those in which one or more “seed” actors report ties to their network partners, and each of those named network partners reports ties to their network partners, and so on. We describe a conditional maximum likelihood estimation approach that leads to the construction of empirically grounded simulation models for networks and network-mediated social processes. An illustrative application of the approach using partial network data from an Australian field study is presented. Potential applications and issues for further research are also canvassed.

Keywords: *Social networks, Statistical models, Exponential random graph models, Social processes, Snowball sampling*

Abstract only