April 17, 2018

Professor Jeff Gill, Editor
Political Analysis
Department of Political Science
American University
sent electronically with submission

Dear Jeff & colleagues:

We herewith submit to *Political Analysis* a manuscript entitled "Inferential Approaches for Network Analysis: AMEN for Latent Factor Models," co-authored by Shahryar Minhas, Peter Hoff, and Michael D. Ward. We think this will make an important contribution to the study of political networks. The latent factor model develops further the latent distance model originally introduced in *Political Analysis* (Hoff & Ward, 2004). The new developments allow one to estimate higher-order dependencies as well as dyadic ones. Since 2004 many scholars have been using ERGM models. We compare the latent distance model, the ERGM approach, and the more recent latent factor approach.

We show that the latent factor approach (AMEN) presents a principled way of doing inference on network models. It is fairly general and can be used on binary, ordinal and continuous data from longitudinal networks or snapshots. It is built on a framework familiar to many political scientists: the generalized linear model. Finally, the latent factor models are much more accurate making in- and out-of-sample forecasts than other approaches. All approaches do reasonably well at predicting the zeros in sparse networks, but the latent factor models are vastly superior at predicting the actual linkages. Thus AMEN appears to be superior at capturing the underlying data generating process which characterizes social networks.

Among the associate editors, Xun Pang is knowledgable about this approach having seen it presented at the 2017 Asian Political Methodology meetings held in Seoul in January.

Respectfully submitted,

Shahryar Minhas
Peter Hoff
Michael D. Ward

Dr. Michael D. Ward