**Identification and Estimation of Endogenous Peer Effects in the Presence of Multiple Reference Groups**

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**Abstract:**

There has been a considerable amount of interest in the empirical investigation of social influence in the marketing and economics literature in the last decade or so. Among the many different empirical models applied for such investigations, the most common class of model is the linear-in-means model. These models can be used to examine whether the social influence is truly due to agents affecting each other through their choices simultaneously (endogenous effect) or due to having similar taste and characteristics (homophily). However, the two effects are not separately identified in general in the standard linear-in-means model unless data on all members of an individual's network are available. With data on a sample of individuals from a network, these effects are not identified. In this research, we leverage a very natural aspect of social settings viz. that consumers are usually part of multiple, as opposed to a single, networks. We discuss the sufficient conditions for identification when the standard linear-in-means models is extended to allow for multiple sources of social influence. We also show how the additional variation generated by more than one source of social influence actually allows estimation of endogenous effects with sample data. We demonstrate the feasibility of our approach via simulation and on the National Longitudinal Study on Adolescent Health data, which has been used in a number of studies in order to examine social influence.

**Keywords**: Peer Effects, Social Influence, Linear-in-Means Models.