

Choose Your Adviser Wisely: Endogenous Advisor-Advisee Relationship and Early Stage Coauthorship on Research Output

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Abstract

We investigate the impact of initial academic social network, formed from advisor-advisee relationships and coauthorships, for economics Ph.D. students (advisees) in the U.S. on their early stage productivity. We define the *academic social network* as a union of i) an advisor-advisee network and ii) a coauthorship network. We model the advisor-advisee relationships with a preferential attachment-like process based on a discrete choice model and find that advisees show weak gender homophilic preferences when choosing advisors. We further model early stage coauthorship formation of advisees through a bipartite network setup, also based on a discrete choice model, and find that advisees prefer to choose projects that are coauthored with their advisors during their graduate studies. Given the *academic social network* through the two networks, we find that the network statistics for advisees have significant positive correlation with early stage output but find weak evidence on the difference by gender. Through simulated synthetic data, we show that, advisee's preference based formation results in productivity gain in percentage at the average individual level but not as much at the aggregate output level, compared to uniform random formation of the networks. This implies that the advisee's preference based allocation of advisors to advisees is less efficient in a social planner's view.

(Results are preliminary and subject to change.)

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