



THE UNIVERSITY OF CHICAGO

Department of Statistics

MASTER'S THESIS PRESENTATION

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An Analysis of NHL Trades as a Social Network and Their Impact
on Short-Term Performance

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ABSTRACT

Trading in the NHL is a common way for a team to improve or prepare for the future. However, there may be ramifications to trading. The following paper attempts to first determine whether or not there is a relationship between trading behavior and short-term performance, and second see if there is any persistent structure to the social network formed through trades over time. To examine short-term performance implications two models are considered. One looks at each month of team performance and sees if it is related to trade volume that month through a mixed effects GLM model. The next treats individual games as the units and uses a Bradley Terry model to see if a relationship exists. Both models show that trades are correlated with short-term performance hits. To look at structural persistence in the network a Poisson model was built to see if the trading relationship between two teams in a given season is predictive of the relationship in the next season. A similar model was built for a GM-level social network. Both models show persistence in the dynamic network, but the persistence is stronger in the team-level model.