Data-Driven Player Ratings for Recreational Ultimate Frisbee Leagues

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Abstract

Nearly 1.5 million people in the United States are core participants in the sport of ultimate frisbee, meaning that they play at least 12 times annually. The vast majority of core participants play in recreational leagues in which teams are formed by randomly assigning players according to skill level such that league-wide parity is maximized. Historically, skill level has been determined by each individual's self-assessment. Such ratings tend to be biased in ways that create significantly imbalanced teams. In this contribution, we use seven years of recreational ultimate frisbee league data from the Boston Ultimate Disc Alliance to show that a rating system based on self-assessment regularly results in 8% of teams in a given league winning less than 15% of their games—approximately double the rate expected if teams were equal in skill level.

1 Introduction

Popularity of ultimate frisbee.

What is a hat league? How many hat leagues are there? Over 200.

What is a club league? How many club leagues are there? About 20?

What is BUDA?

Why spring season?

Why the past 7 years?

2 Performance of Existing Rating System

Describe basic approach to forecasting team rating.

Justify use of average plus/minus per game.

Explain results of self-assessment rating forecast.

Explain results of captain rating forecast.

Explain results of BUDA draft rating forecast.

Note the fraction of players on a given team that do not have captain rating.

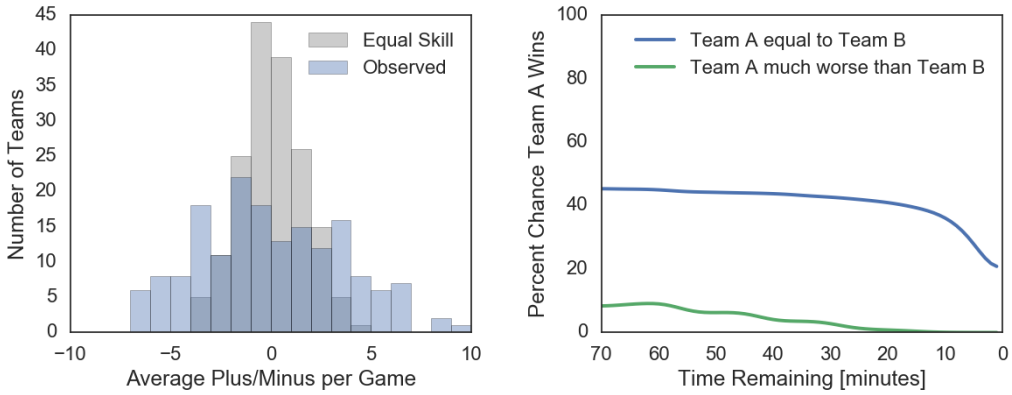

Figure 1: Test of a new caption.

3 Self-Assessment Ratings and Captain Ratings

Correlation between self-assessment rating and average per game goal differential.

Correlation between captain rating and average per game goal differential.

Fraction of players in a league that have a captain's rating.

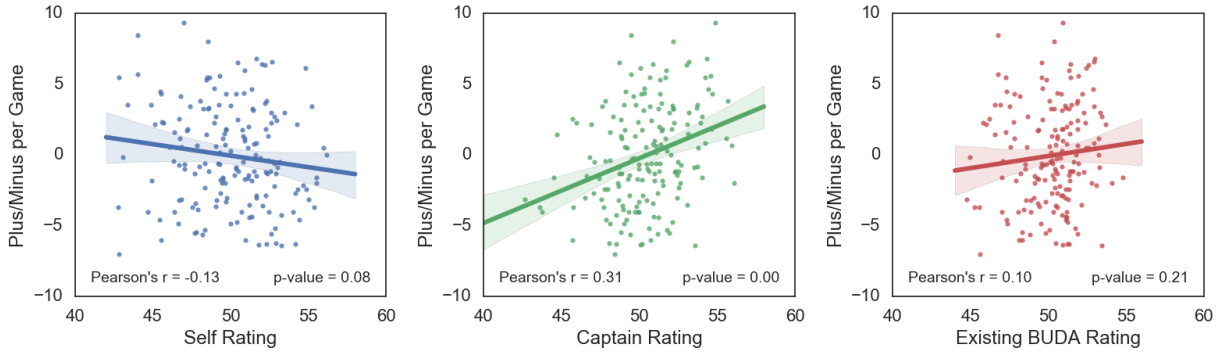

Figure 2: Replace this text with your caption

4 A Data-driven Rating System

Brief reminder of how club leagues work.

Definition of club rating. Math behind computation.

Plot showing club rating vs. average goal differential per game (club).

What about club players that don't have a self-rating??

Plot showing club rating vs. average goal differential per game (hat). This is the money plot.

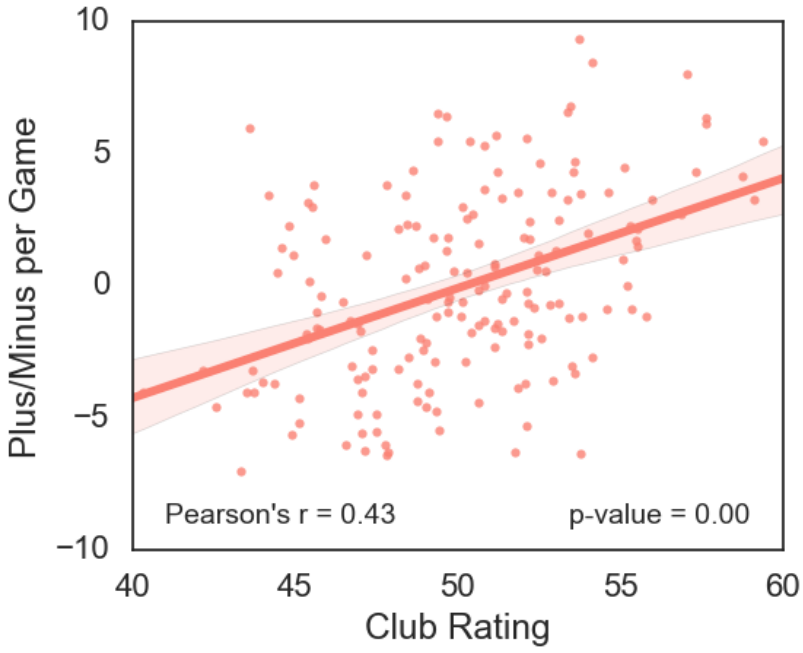

Figure 3: Replace this text with your caption

5 Recommendations for League Commissioners

Discuss significance of five points of club rating on a 16 player team. Corresponds to 80 points total, or roughly replacing worst player on roster with one of best players in the league.

Recommend that league organizers use club data if available. Organizers should strongly encourage captains to rate players (perhaps provide a monetary reward).

6 Summary and Future Work

Review conclusions. Bullet point form.

Outline goals in future work.

(missing citation)

References