

Proposal: An Analysis of Hockey's Most Controversial Statistic

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September 25, 2024

Introduction In hockey, a very common statistic that is reported is the plus/minus statistic. Plus/minus is calculated by taking all the even strength goals that were scored by their team while they were on the ice and subtracting it by the total number of goals that were scored by the other team while they were on the ice. The idea behind the number is that it will show if a player has an overall positive or negative contribution when they are playing. However, the plus/minus has a lot of drawbacks. For example, in ice hockey, players tend to play on "lines", meaning the same three forwards and the same two defencemen tend to play at the same time. Because of this, plus/minus is heavily influenced by who they play with. Some would argue that the plus/minus is more of a team statistic rather than an individual statistics. Many of the criticisms of this statistic comes from the fact that there are a lot of confounding variables that influence how the plus/minus is calculated.

The goal of this paper is to evaluate the effectiveness of the plus/minus statistic. Some of the information I am trying to determine is if the plus/minus statistic can be used to determine how good a player is both on offense and defense. I also want to see if the plus/minus has any validity being used as an individual statistic or as a team statistic. Based on my observations, I will compare the plus/minus statistic to other statistics that have a similar purpose such as CORSI or Fenwick.

Specific Aims Formulate your research question; translate your research question into statistical/data science questions

Research questions: Is the plus/minus statistic an effective way of evaluating a players offensive or defensive contribution? Is the plus/minus statistic an individual or team statistic? Is the plus/minus statistic a better evaluation of a player than other contribution statistics such as CORSI or Fenwick?

Data Hopefully, you have identified the data needed for your project. Give a description about it.

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Research Design and Methods What design or methods will you use?

Since the plus/minus statistic tends to deal with collinearity, a ridge regression might be more appropriate for analysis.

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Discussion What are the most challenge parts of the task? What are the limitations of your work? What is your fall-back plan if something unexpected happens?

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