 Analytics and Baseball's New Generation

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Introduction

The term Sabermetrics comes from SABR, and acronym for the Society for American Baseball Research. SABR sets out to “search for objective knowledge about baseball” [1]. This means viewing baseball as a set of conditions, rather than a set of rules. Starting in the early 2000’s, teams in Major League Baseball (MLB) have been utilizing Sabermetrics to find ways to score more runs throughout the course of a season. An example of this is the stress put on a high On-Base Percentage by the Moneyball Oakland Athletics and General Manager Billy Beane. He argued that more base-runners would lead to more runs scored [2].

In recent years, teams have been utilizing a new defensive alignment, known as the “Pull Shift.” Teams have been positioning field players based on the projected path of a batter ball of more runs, and climbing up the final standings. Additionally, we see that Opponent On-Base Percentage trends down as the amount of shifts used went up. Staying ahead of the Sabermetrics curve is paramount to a team giving itself the best shot to reach the playoffs and win a World Series. The new generation of baseball will continue to emphasize trends and empirical analysis as teams look more to Sabermetrics to make decisions.

Methods

In order to see the effect the Pull Shift had on the 2014, the +/- statistic was derived. This stat refers to how a team did in the final standings, compared to the predicted results of the season.

• Teams who moved up compared to their predictions received a positive rating equal to the number of spots they moved up.
• Teams who did not do as well as they were projected to received a negative rating equal to the number of spots they moved down.
• Predictions were taken from Sports Illustrated [3].

The following comparisons were then made.

- Shifting Rank and +/-.
- Number of Shifts and +/-.
- Number of Shifts and Opponent On-Base Percentage (OOPB) [4].
- Number of shifts and Runs Allowed per Game (RA) [5].

The following chart shows each team’s movement in the standings, and is organized with the team that shifted the most (HOU) on the left, to the team that shifted the least (COL) on the right.

In the scope of Billy Beane’s Moneyball tactics, shifting appears to be an effective option to reduce OOBP. Six out of the nine teams who employed more than 500 shifts had an OOBP lower than the league average, 0.314 [4]. Four of those six dropped below 0.300. On the opposite end of the spectrum, half the teams below 300 shifts had an OOBP above 0.320. A 0.010 difference equates to sixty-one less base-runners throughout the course of a season. This means sixty-one less opportunities for solo homeruns to become 2 or 3-run homeruns, sixty-one less times a pitcher has to worry about a base-runner stealing, and sixty-one more potential outs—adding up to a lot less runs allowed.

Conclusion

The results of the 2014 MLB season were largely affected by the usage of Sabermetrics and the Pull Shift. There is major correlation between teams who used the Pull Shift often and climbing up the final standings. Additionally, we see that Opponent On-Base Percentage trends down as the amount of shifts used went up. Staying ahead of the Sabermetrics curve is paramount to a team giving itself the best shot to reach the playoffs and win a World Series. The new generation of baseball will continue to emphasize trends and empirical analysis as teams look more to Sabermetrics to make decisions.

References


Acknowledgements

Inspiration from this project comes from the book Big Data Baseball by Travis Sawchik. Information on the number of shifts used by each team was taken from this book via Baseball Info Solutions. The figure of the shift was taken from Creative Commons.org and is labeled for reuse.

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Figure: An example of the Pull Shift alignment, used for a batter likely to hit a ball to the right side of the field.