

Moneyball III

By:

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National League West Division

Which MLB team in the NL West is most likely to win the division in 2023, using the 2015-2019 & 2021 seasons' statistics as training data & the 2022 season statistics as the test data

Arizona Diamondbacks



Colorado Rockies

Los Angeles Dodgers

San Diego Padres

San Francisco Giants



The Data

- 6 years of MLB Team Data
 - 2015-2019; 2021
- 1 Year = 162 games per team
 - 972 games worth of statistics
- Narrowed Data down to 5 MLB Teams in the NL West Division
- Focused on key stats that would be good indicators of success for the season



The Stats



SLG: Slugging percentage represents the total number of bases a player records per at-bat

BAVG: Batting average; determined by dividing a player's hits by their total at-bats

SB: Stolen Bases

H: Hits

W: Wins

Win%: $\text{Wins} / 162 (\text{games in a season}) * 100$

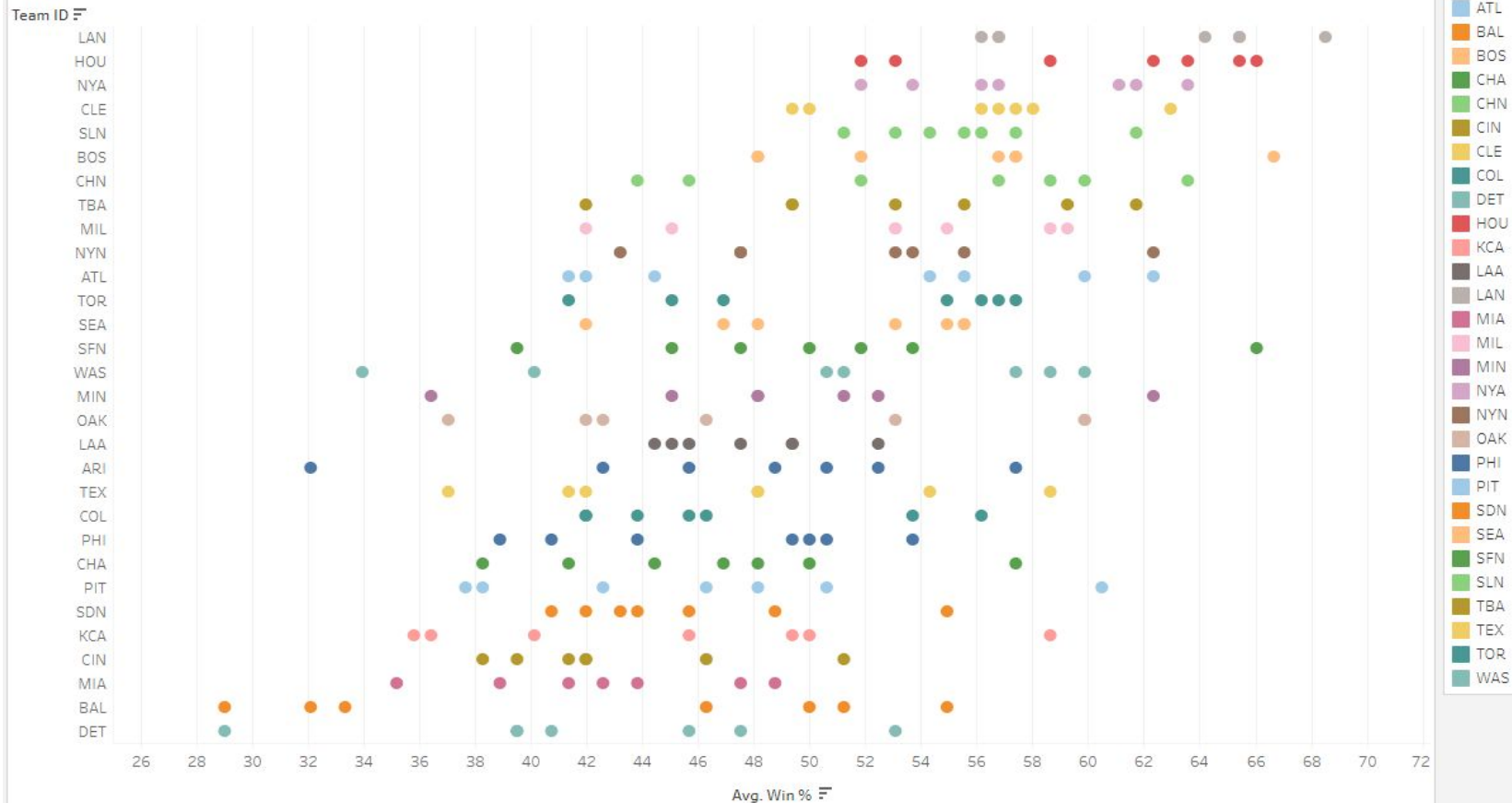
R: Runs Scored

RA: Runs Allowed

Average Win Percentage



Teams Average Win %



Averages



- Above are the Offense category averages for all 5 teams in the NL West
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Walks and Hits per Inning Pitched (WHIP)



- WHIP is a defensive statistic for pitchers; shows Walks & Hits allowed
 - The lower the WHIP, the better
- Walks & hits equal base runners, and base runners lead to runs
 - The less runs allowed, the better the chance the team has to win

WHIP vs RA

Using sklearn our model gave us a similar output to the real data

Mean Squared Error:

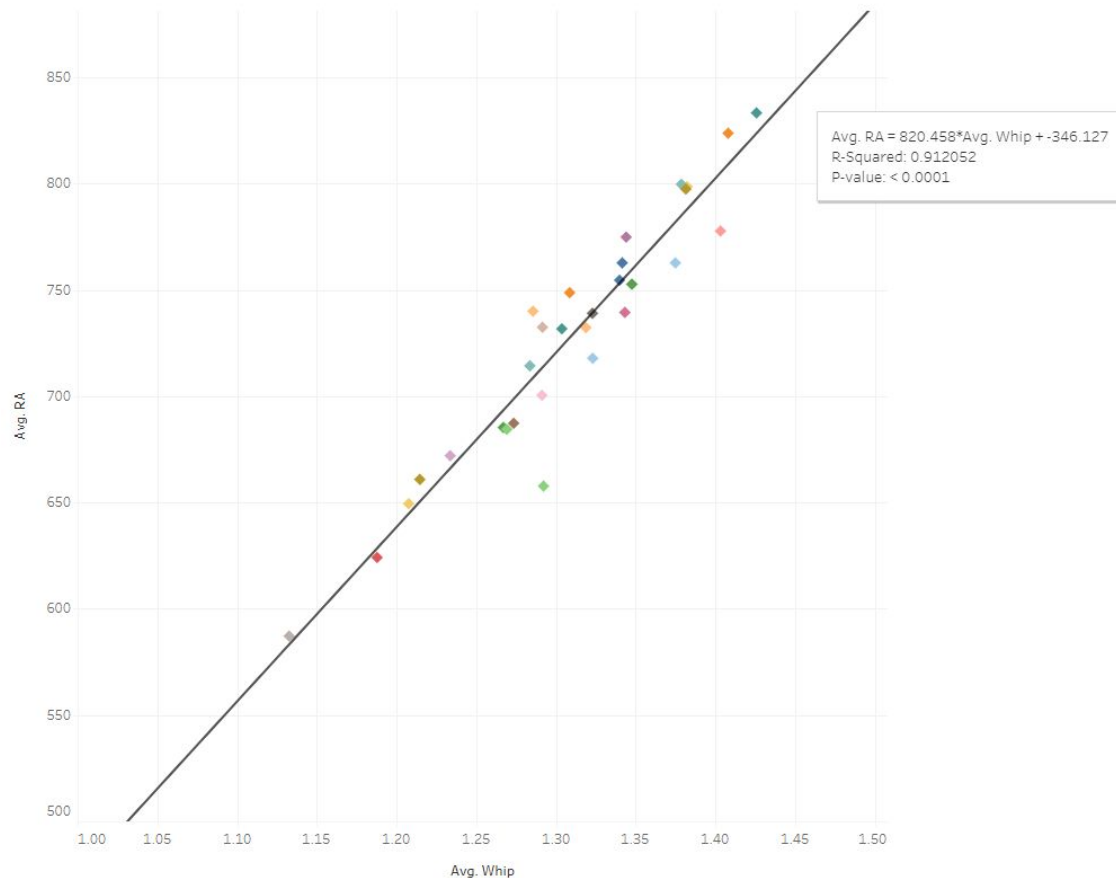
1647.7390506472318

Root Mean Squared Error:

40.59235212016214

R-squared:

0.860027722482998



Machine Learning

- Features: SLG, SB, and BAVG
 - Target: Total runs over 790 (High)
 - Target 2: Total runs under 669 (Low)
-
- **88%** accurate for high performers
 - **90%** accurate for low performers

Name	Acc	Loss		L1	L2	L3
Low Scores	0.880952	0.218548			8	5
	0.904762	0.216655			20	10
	0.904762	0.237874			40	20
	0.880952	0.37577			40	20
	0.904762	0.344131			50	35
High Scores	0.857143	0.319566			8	5
	0.857143	0.26119			20	10
	0.857143	0.260892			25	10
	0.880952	0.262558			20	20
	0.857143	0.272693			30	30



Conclusion

In Conclusion,

