

Moneyball III

By:

Allen Alonso, Cole Turner, Matthew Leon, & Michael Garverick

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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

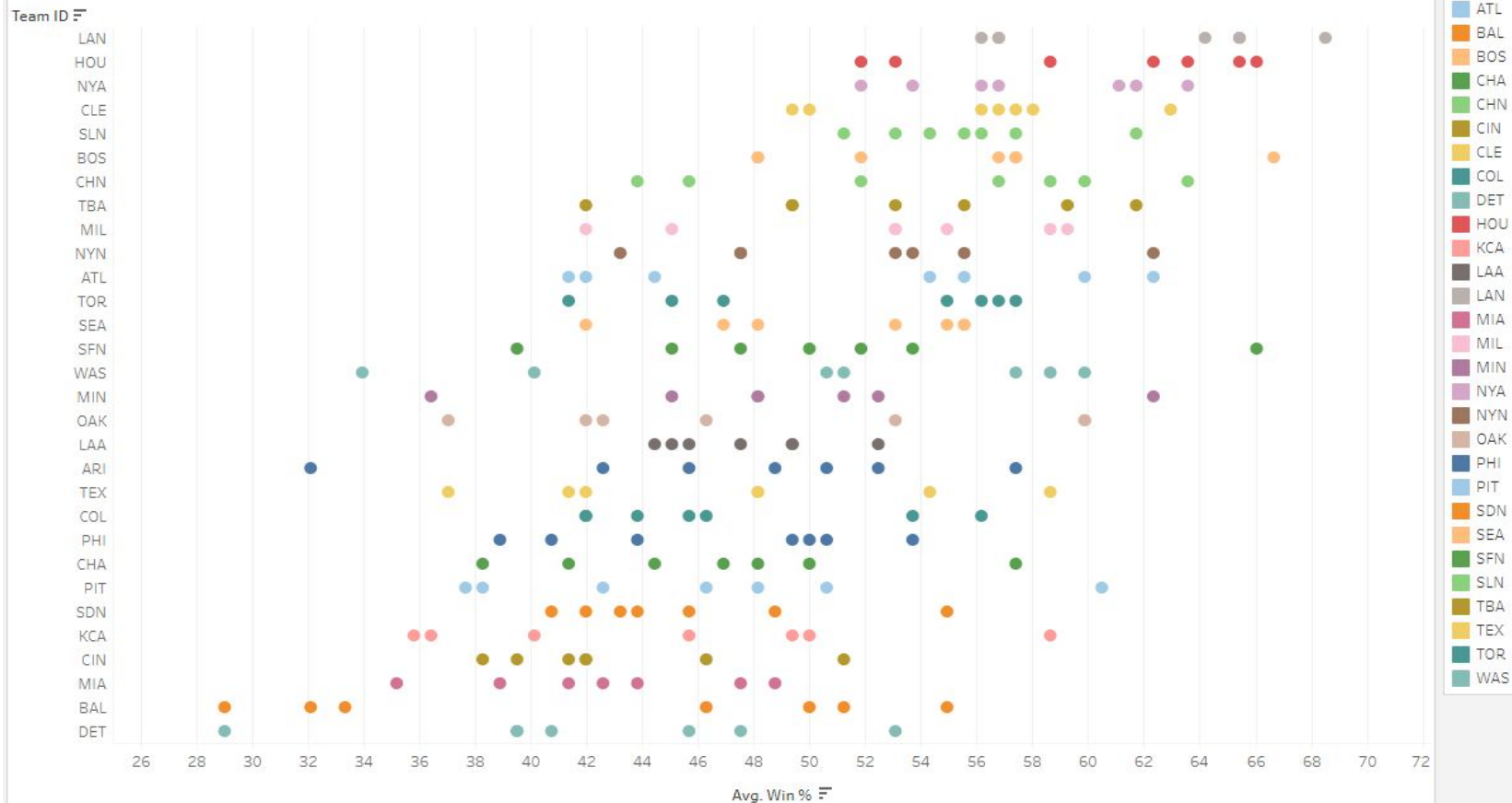
RA: Runs Allowed

WHIP: Walks/Hits per Innings Pitched

Average Win Percentage



Teams Average Win %



Averages



- Specific Offense Categories vs. Runs scored

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:

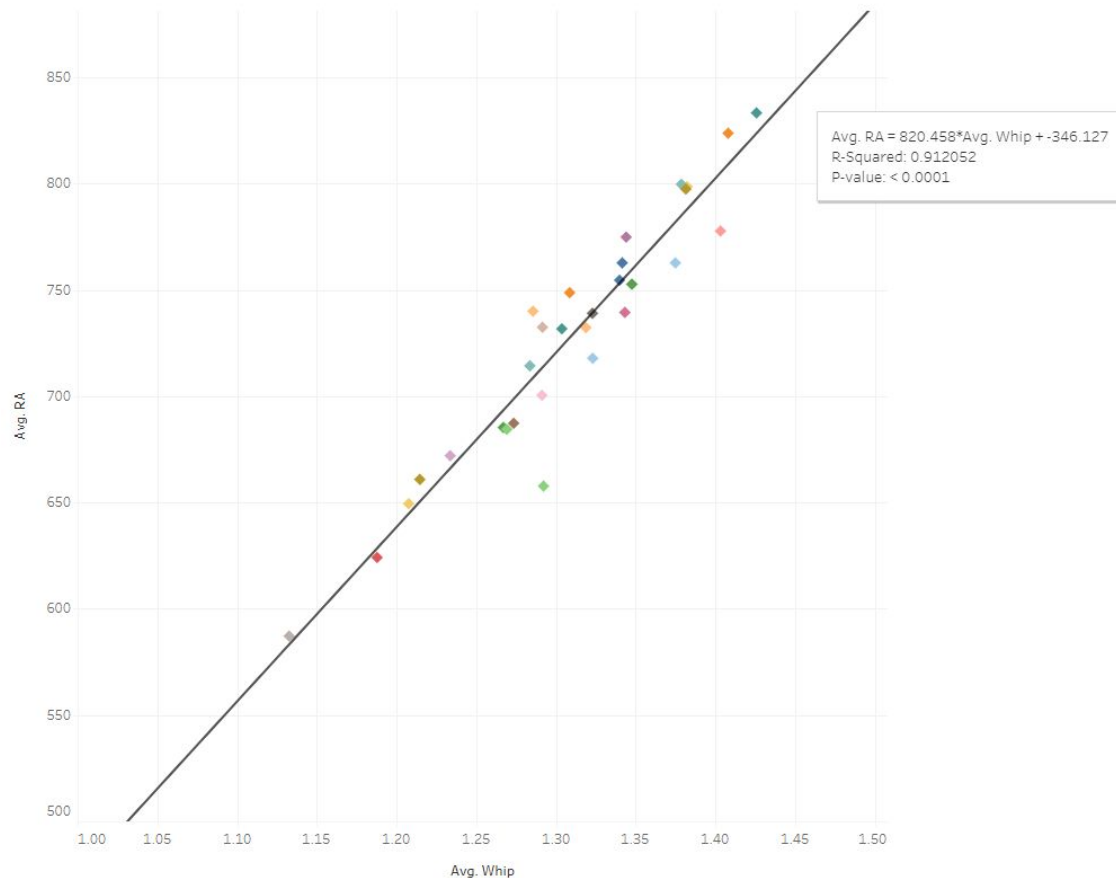
1647.7390506472318

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, our data clearly shows that the Los Angeles Dodgers are the team to pick when it comes to who will win the NL West in 2023.

They allow the least amount of runs, and have the tendency to score the most amount of runs due to their higher Slugging Percentage (which leads to more runs scored).



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