Homework #1: Baseball Analysis

Data 621 Business Analytics and Data Mining

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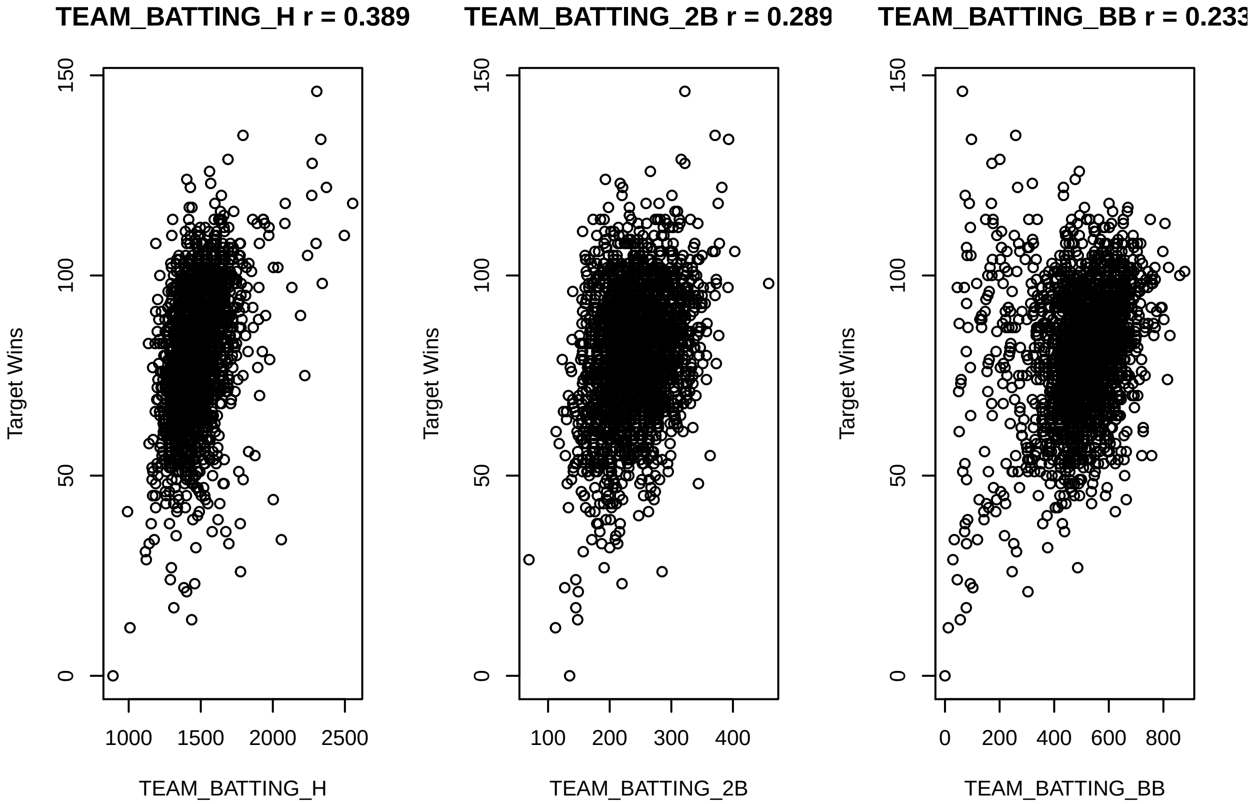
Data Exploration

The data analyzed in this report includes 2276 professional baseball teams for the years 1871-2006. In total, 16 variables were present in the data provided. Included below is a summary of descriptive statistics, correlations to wins, and the number of missing values for each variable in the provided data set:

	VAR_NAME	MEAN	MEDIAN	CORRELATION TO WINS (r)	NUM_MISSING
2	TARGET_WINS	80.79086	82.0	NA	NA
1	TEAM_BASERUN_CS	52.80386	49.0	0.0224041	772
21	TEAM_BASERUN_SB	124.76177	101.0	0.1351389	131
3	TEAM_BATTING_2B	241.24692	238.0	0.2891036	0
4	TEAM_BATTING_3B	55.25000	47.0	0.1426084	0
5	TEAM_BATTING_BB	501.55888	512.0	0.2325599	0
6	TEAM_BATTING_H	1469.26977	1454.0	0.3887675	0
7	TEAM_BATTING_HBP	59.35602	58.0	0.0735042	2085
8	TEAM_BATTING_HR	99.61204	102.0	0.1761532	0
9	TEAM_BATTING_SO	735.60534	750.0	-0.0317507	102
10	TEAM_FIELDING_DP	146.38794	149.0	-0.0348506	286
11	TEAM_FIELDING_E	246.48067	159.0	-0.1764848	0
12	TEAM_PITCHING_BB	553.00791	536.5	0.1241745	0
13	TEAM_PITCHING_H	1779.21046	1518.0	-0.1099371	0
14	TEAM_PITCHING_HR	105.69859	107.0	0.1890137	0
15	TEAM_PITCHING_SO	817.73045	813.5	-0.0784361	102

Below are graphs that show the relationship to *Target Wins* for the three variables with the highest correlation coefficient:



The full array of correlations graphs may be found in Appendix A.

Data Preparation

It was determined that the *Hits By Pitch* variable had too many missing values to be useful for regression, and thus this variable was excluded from the model building process.

Model Creation

Model Selection and Prediction