

moneyball

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Abstract

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Keywords: Moneyball, Baseball, Sabermetrics, Logistic Regression

Introduction

This data analysis was conducted using R (R Core Team (2019)), and in particular the packages Tidyverse (Wickham et al. (2019)) and Lahman (Friendly et al. (2020)) and was compiled using R markdown (Xie, Allaire, and Golemund (2018)).

Data

Model

```
##
## Call:
## glm(formula = playoffs ~ HR + ERA + `Est. Payroll`, family = binomial(),
##      data = all_years)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -2.1115  -0.5674  -0.3114  -0.0942   2.8845
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)   4.955e+00  5.276e-01   9.392 < 2e-16 ***
## HR            2.415e-02  1.925e-03  12.549 < 2e-16 ***
## ERA          -2.645e+00  1.630e-01 -16.229 < 2e-16 ***
## `Est. Payroll` 8.371e-09  1.407e-09   5.949 2.69e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 2037.6  on 2095  degrees of freedom
## Residual deviance: 1447.4  on 2092  degrees of freedom
## AIC: 1455.4
##
## Number of Fisher Scoring iterations: 6
```

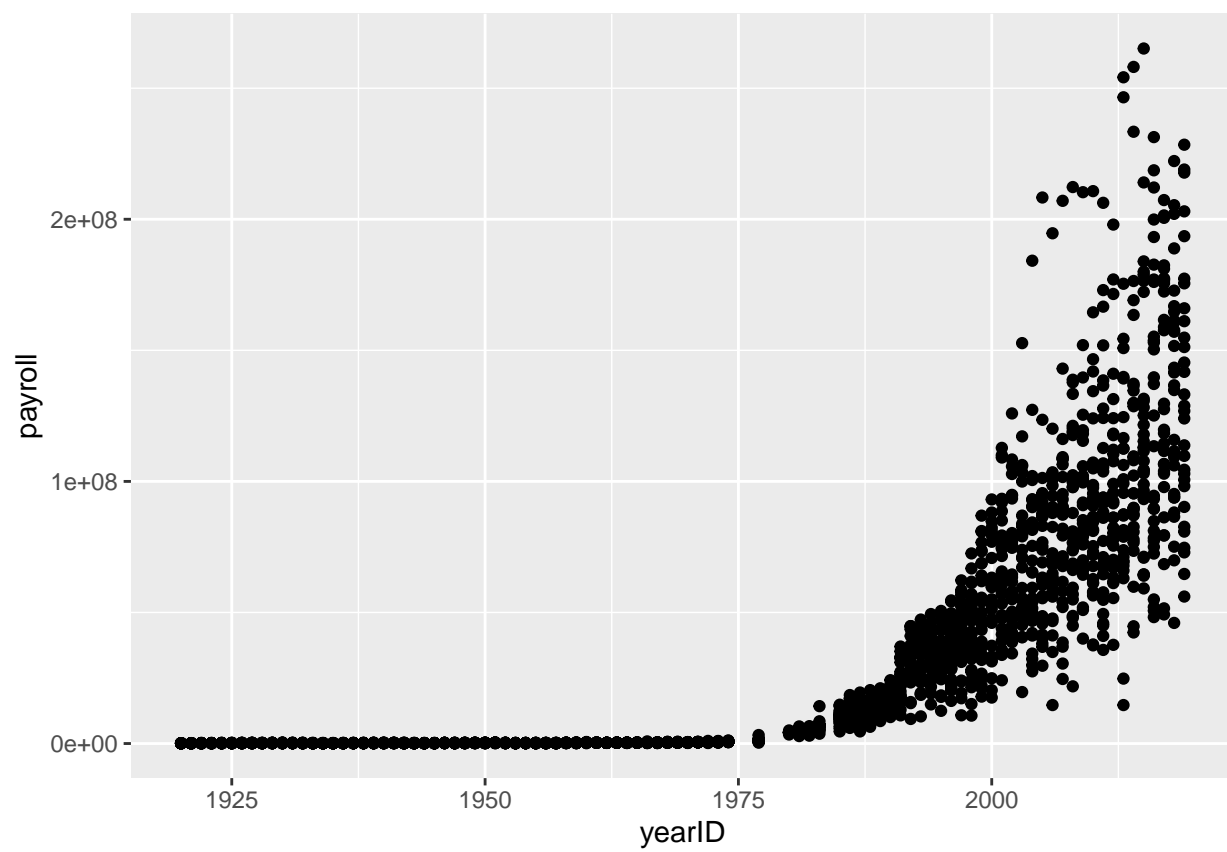


Figure 1: The increase in Payroll over the Years

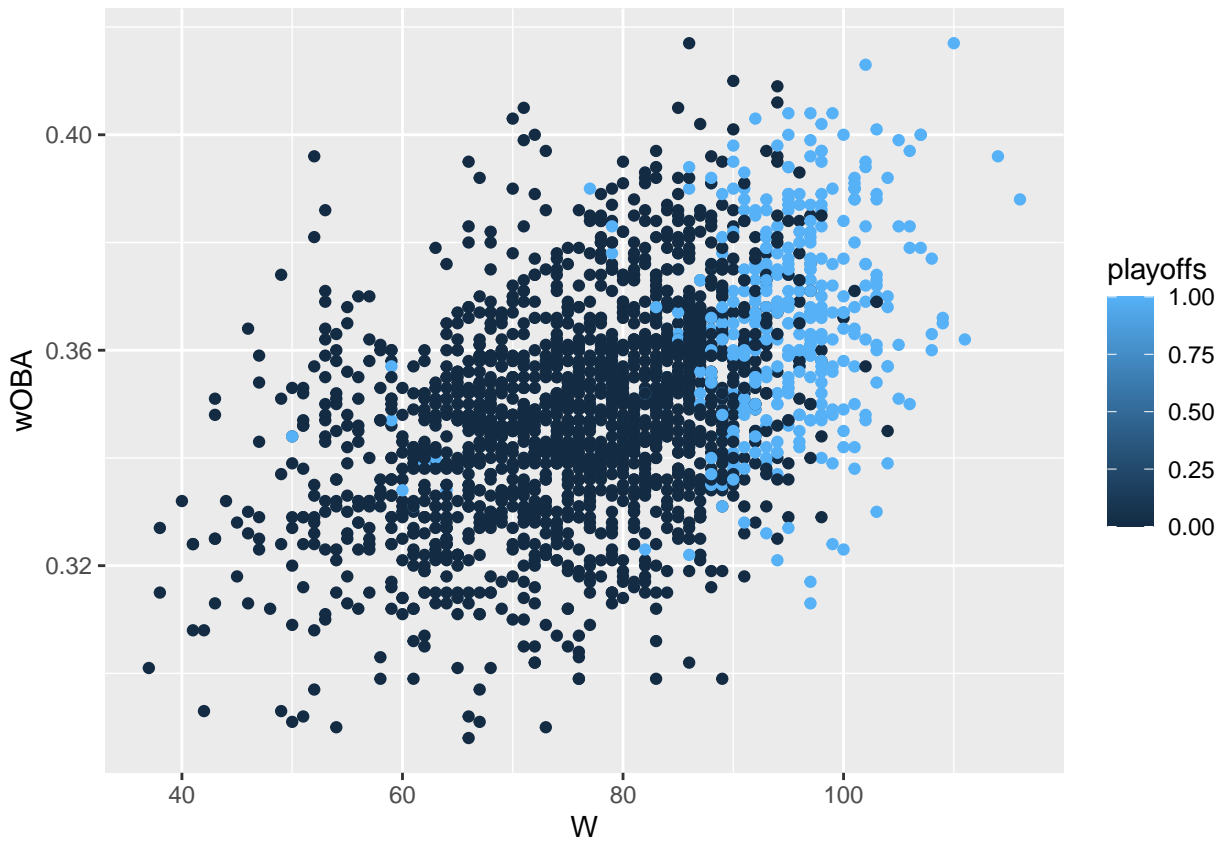


Figure 2: Relationship between wOBA and Wins

Discussion

Weaknesses and Next Steps

References

Friendly, Michael, Chris Dalzell, Martin Monkman, and Dennis Murphy. 2020. *Lahman: Sean 'Lahman' Baseball Database*. <https://CRAN.R-project.org/package=Lahman>.

R Core Team. 2019. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. <https://www.R-project.org/>.

Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D'Agostino McGowan, Romain François, Garrett Golemund, et al. 2019. "Welcome to the tidyverse." *Journal of Open Source Software* 4 (43): 1686. <https://doi.org/10.21105/joss.01686>.

Xie, Yihui, J.J. Allaire, and Garrett Golemund. 2018. *R Markdown: The Definitive Guide*. Boca Raton, Florida: Chapman; Hall/CRC. <https://bookdown.org/yihui/rmarkdown>.