

# BIOS 611 Project 1

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## 1 Introduction

Men's college basketball is a widely popular sport, especially at the Division 1 level and is broadcasted nationally for fans to watch. According to Cav's Corner, the UVA men's basketball team is one of the top revenue generators for the school.

As a recent graduate of the University of Virginia, I was interested in looking at various game statistics and their influences on the number of games won by a team. I specifically looked at the 2019 NCAA D1 basketball season since that is both the year that UVA won the national championships and the last pre-COVID season.

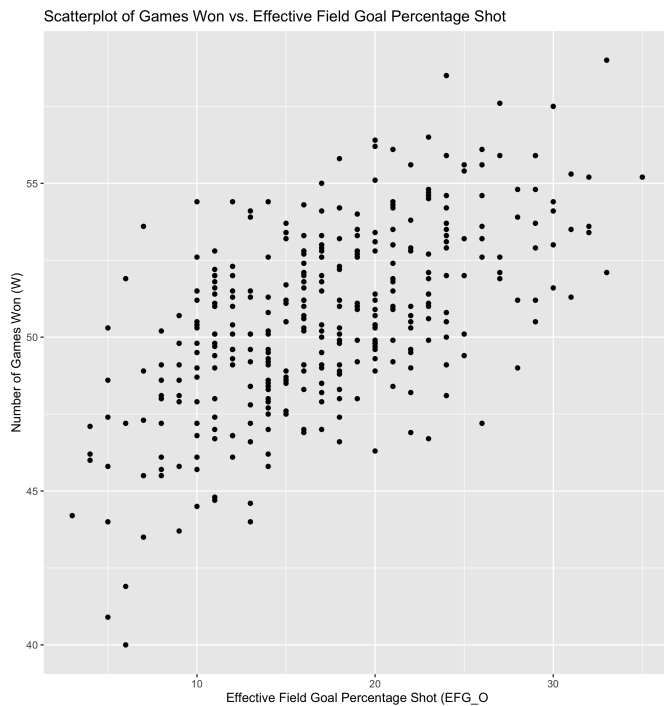
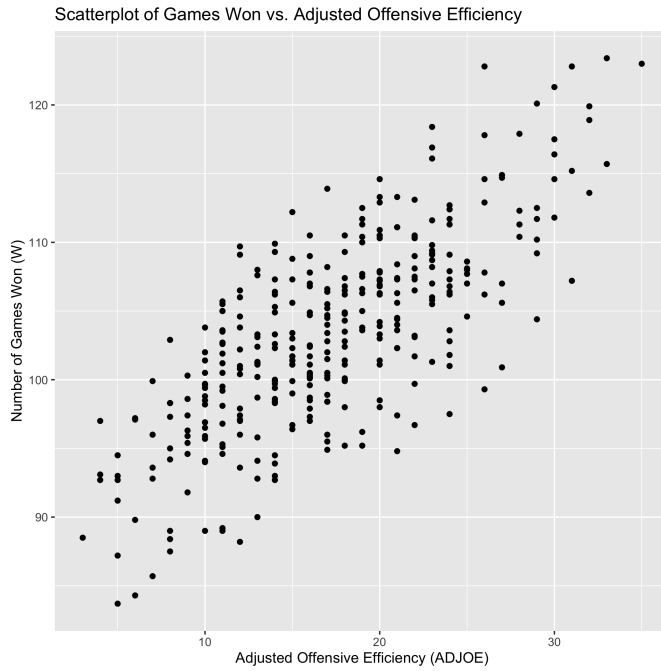
In this report, I examined the relationship between the number of games won and statistics including adjusted offensive efficiency, adjusted defensive efficiency, effective field goal percentage, turnover rate, and steal rate.

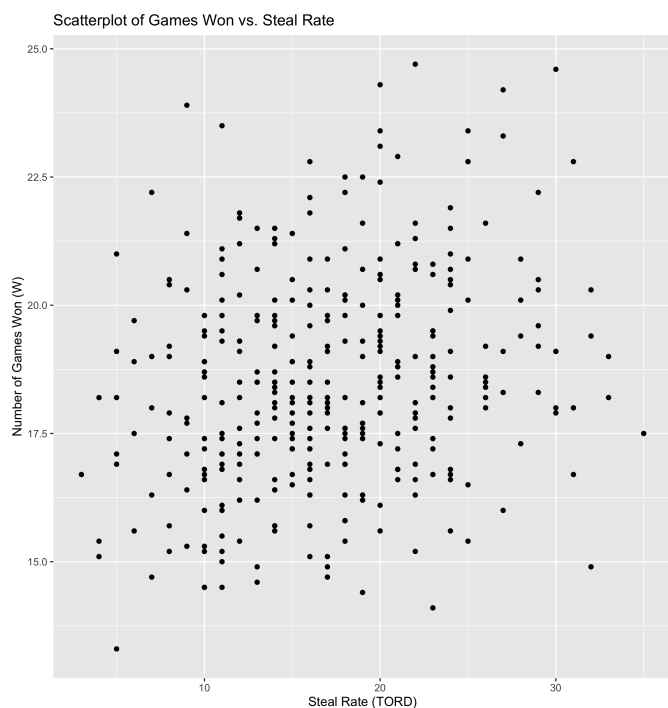
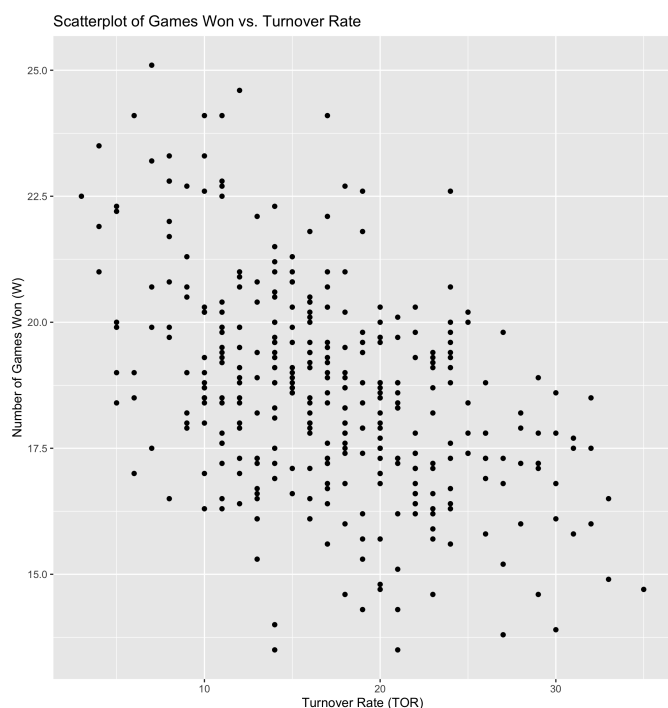
## 2 Data

The dataset with variable descriptions and more context can be found [here](#) and was found on kaggle. Originally, the data was scraped from barttorvik.com, a famous college basketball website.

### 3 Exploratory Data Analysis

In our exploratory data analysis, I decided to choose a couple variables I was interested in and plot them against the number of wins. The variables I included are adjusted offensive efficiency, adjusted defensive efficiency, effective field goal percentage shot, turnover rate, and steal rate.





Additionally, I created a correlation matrix along with a graph of some pairwise interactions.

	W	ADJOE	ADJDE	EFG_O	TOR	TORD
W	1	0.74763109907464	-0.684400288942562	0.587549918737607	-0.457309376864682	0.233868446591693
ADJOE	0.74763109907464	1	-0.568743755483125	0.698596323647121	-0.57555088414802	-0.0293797207378335
ADJDE	-0.684400288942562	-0.568743755483125	1	-0.231537861665069	0.224042007578146	-0.263413045164939
EFG_O	0.587549918737607	0.698596323647121	-0.231537861665069	1	-0.359248754684407	-0.123659931781585
TOR	-0.457309376864682	-0.57555088414802	0.224042007578146	-0.359248754684407	1	0.0729274586562059
TORD	0.233868446591693	-0.0293797207378335	-0.263413045164939	-0.123659931781585	0.0729274586562059	1

