2019 NFL QB Data

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Overview

This activity was provided to practice building simple linear regression models using R.

The data

The data used for this activity can be found in the 2019_nfl_qb_data.csv file and contains Quarterback stats for all quarterbacks in the 2019 NFL season. It has been sourced from **pro-football-reference.com** and consists of the following variables:

case_no: unique observation identification number

player_name: quarterback player name

player_id: unique player identification number

team: team the quarterback plays for in the NFL

age: age of player in years

position: Uppercase QB indicates a primary starting quarterback, while lowercase qb indicates a secondary quarterback

games_played: number of games played

games_started: number of games started

wins: number of games won when starting

losses: number of games lost when starting

draws: number of games drawn when starting

completions: number of passes completed

attempts: number of passes attempted

cmp_pc: passes completed as a percentage of passes attempted

yards: yards gained by passing

touchdowns: number of passing touchdowns

touchdown_pc: passing touchdowns as a percentage of passes attempted

interceptions: number of interceptions

interceptions_pc: interceptions as a percentage of passes attempted

passer_rating: Passer rating (also known as quarterback rating). For a description of the Passer rating see **here**

sacks: number of sacks

yards_lost: number of yards lost due to sacks

sack_pc: sacks as a percentage of passes attempted

Each row is one players total stats for the 2019 season.

Our question

Passer rating is a metric used to evaluate quarterbacks in the NFL, and it is calculated based on a quarterback's completions, yards gained, touchdowns, interceptions and attempts.

When using metrics to evaluate players or teams, it is important to determine whether these metrics are valid measures of performance. In this case, we need to determine if passer rating is a good measure of success. So, our question becomes:

How does passer rating relate to success?

We can use the number of wins (wins) a team has when a particular quarterback starts as a measure of success. And then the questions we are trying to answer now are:

- Do quartbacks with a higher passer rating have more wins?

- Do quarterbacks with a lower passer rating have fewer wins?

- How many wins can we expect to get when we have a starting quarterback with a particular passer rating?