

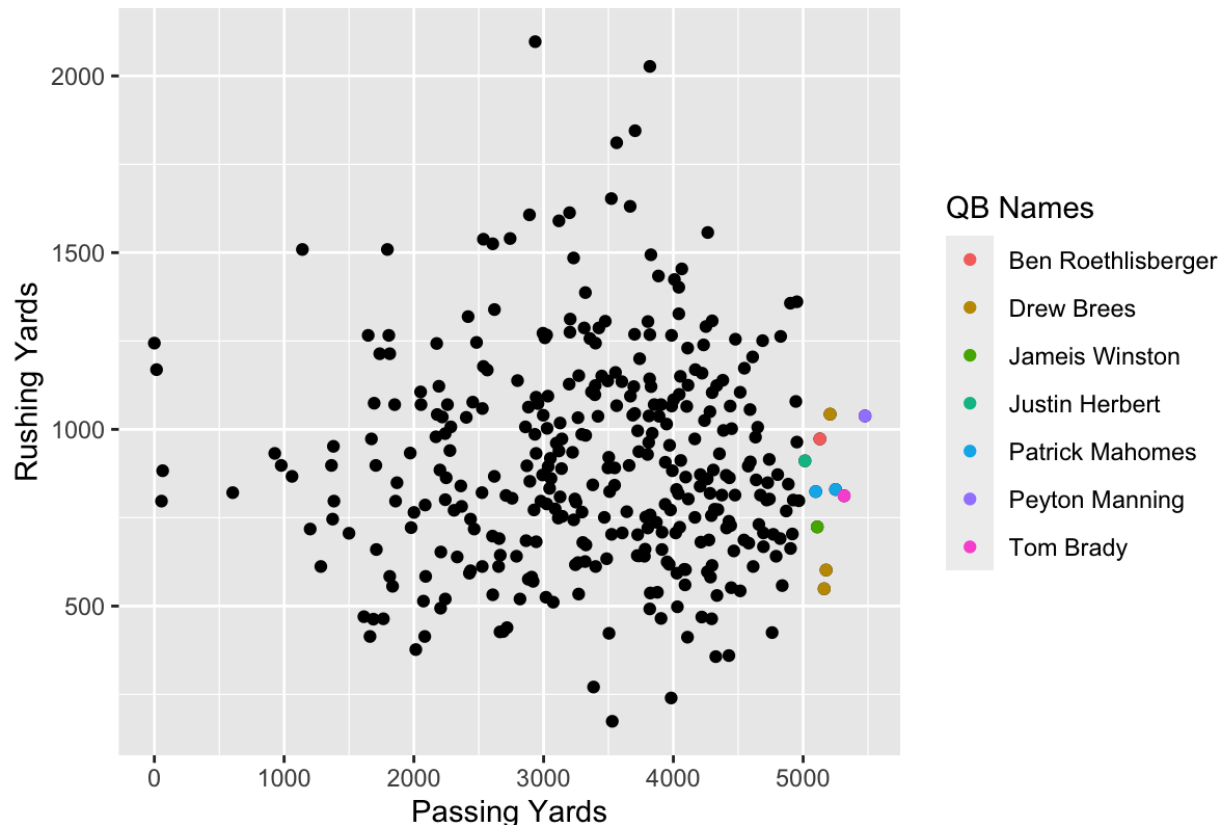
Anthony Gash

Part 1: Exploration

Graph #1

### QB Passing Yards vs RB Rushing Yards from 2012-2022

The color is the top 10 QBs by passing



The RB rushing yards was limited to the best RB on the team that year

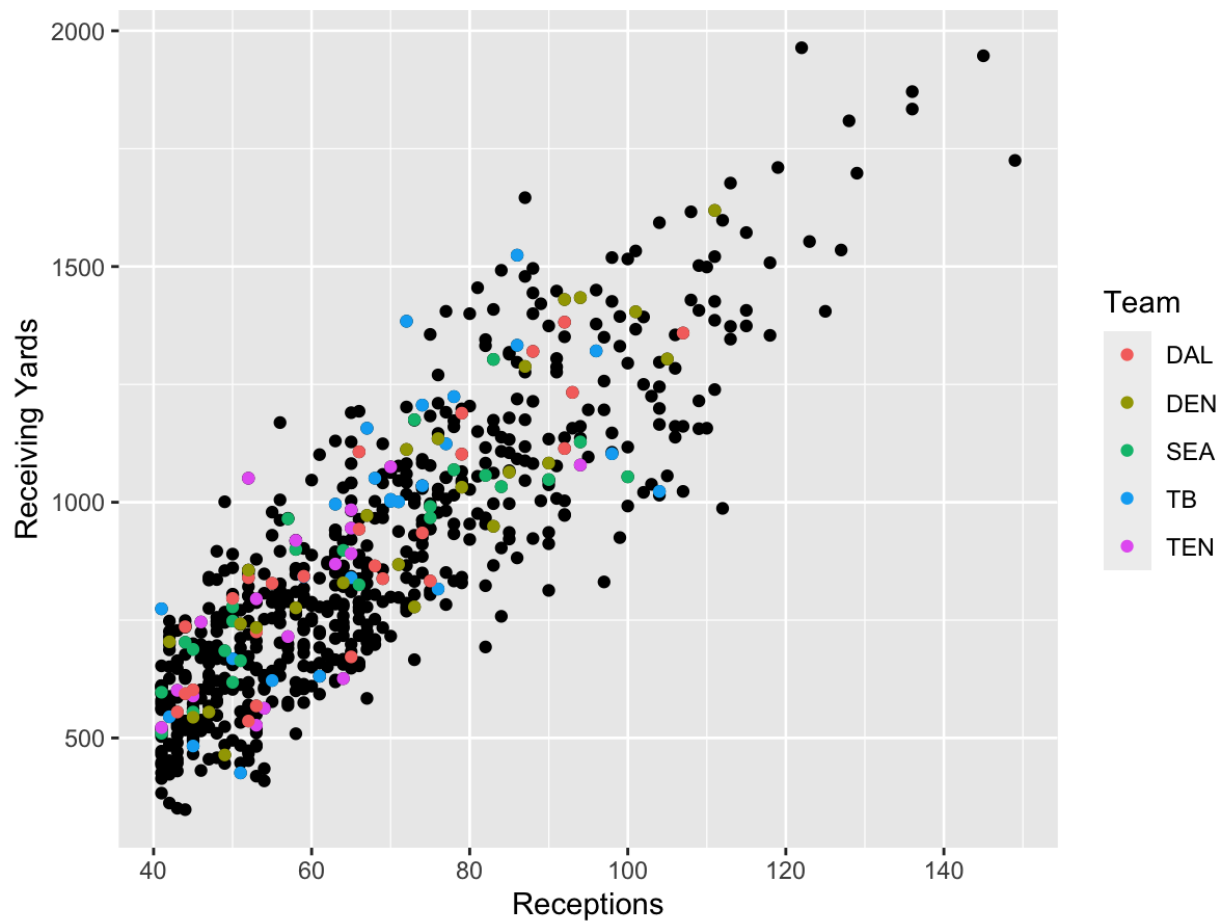
and QBs need a minimum 8 games played

This a graph that was trying to see if there was a correlation between QB passing yards and their respective best RB rushing yards. I thought that if a QB is throwing for a lot of yards the RBs rushing yards would be at a low. The colored dots represent the QBs that have had the highest passing yards season in the data set. As you can see during these great years the rushing yards were lower. This is what I thought we would see, a negative relationship between the two (passing yards high rushing yards low, and vice versa). However, there is little to no relation between the two. What's also interesting is that despite playing 8 games, there are still QBs that threw almost 0 yards.

Graph #2

## Receiving Yards vs Receptions For Recievers from 2012-2022

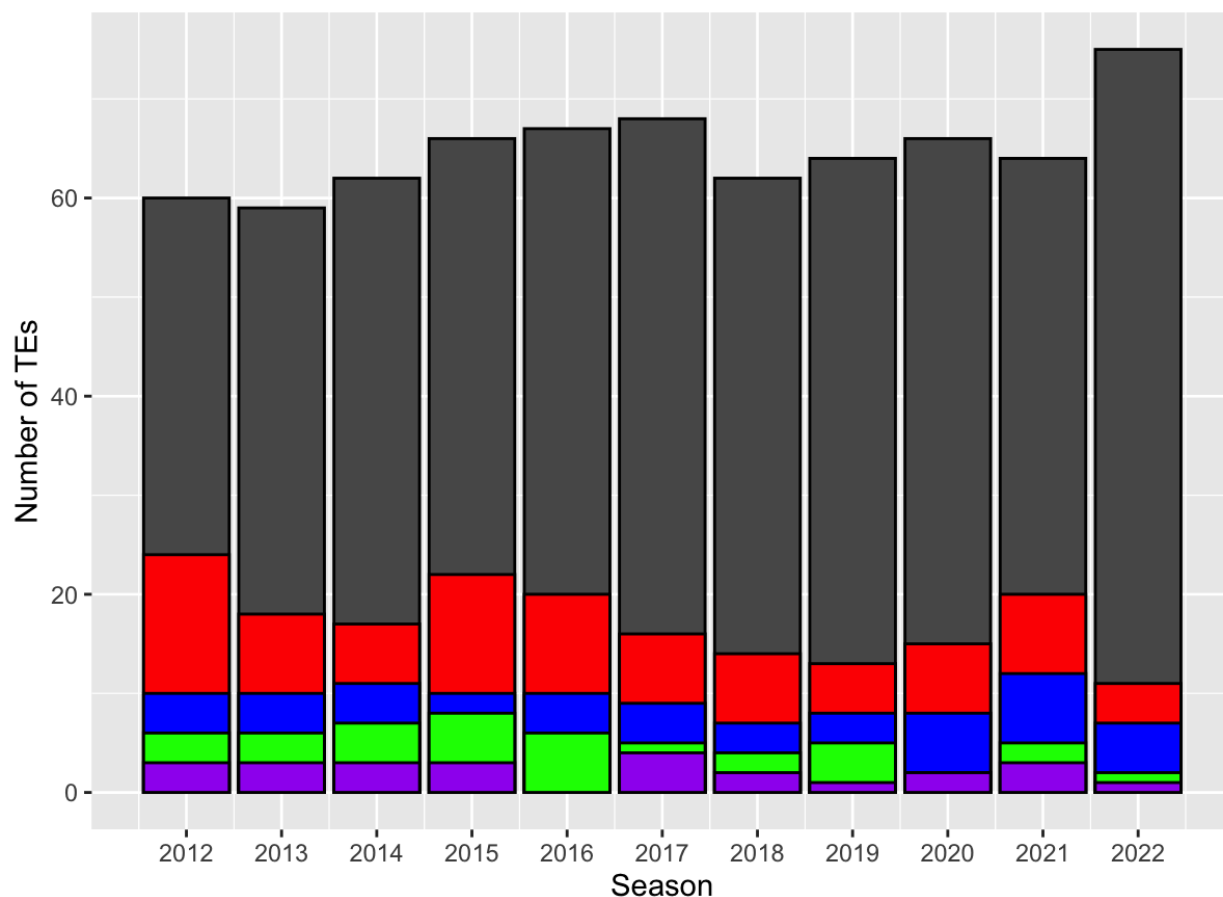
The color represents teams with best average yards per reception



This graph shows the relationship between receiving yards and receptions. As I envisioned, there is a positive relation between the two, meaning more receptions equals more receiving yards. The colored dots represent players who played on the teams that had the best average yards per reception based on all their receivers. I will say I am a little shocked by how low the colored dots are but it does make sense as every point represents a player and sometimes one player on a team can have a monster year while the other receivers do not.

Graph #3

### Number of TE's Each Season With Increasing Filters

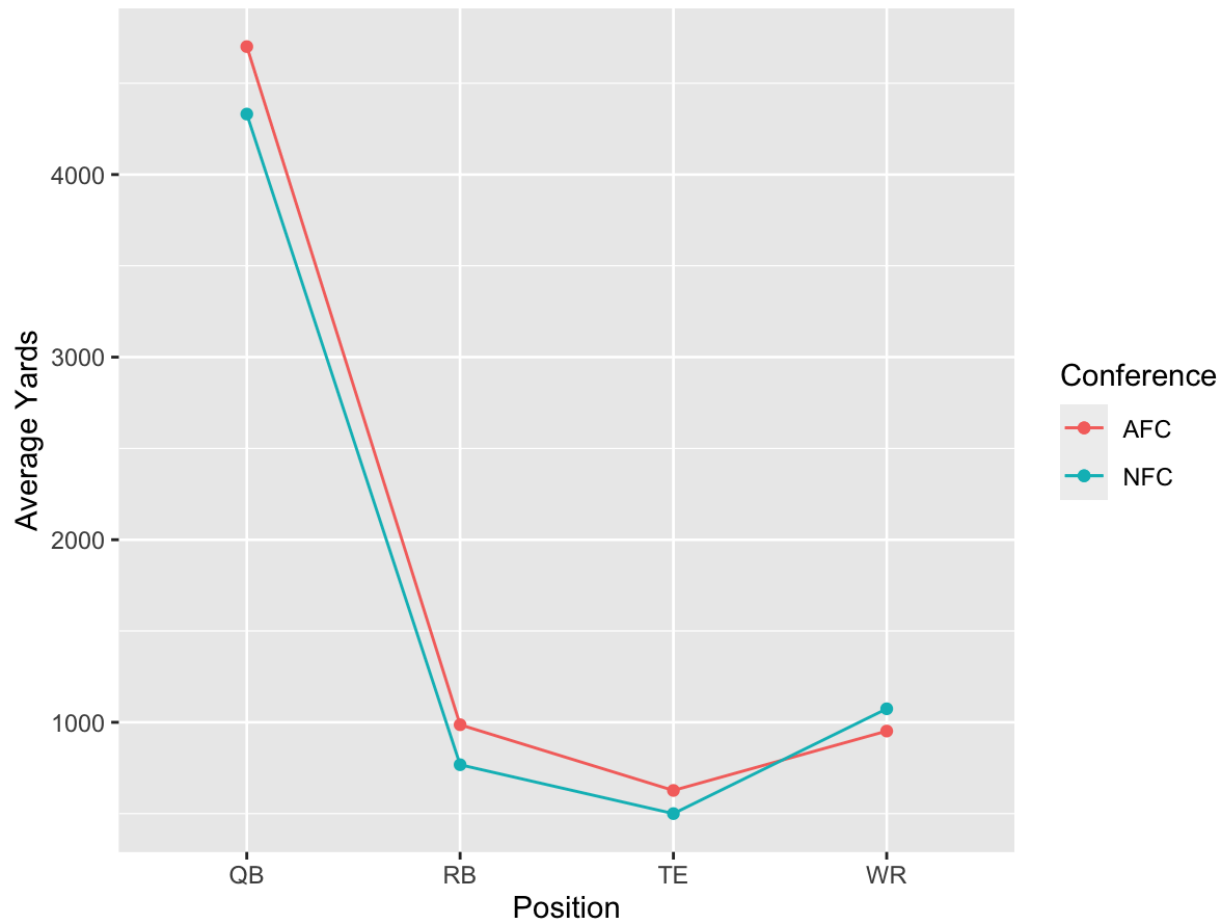


Red represents 70+ targets, Blue represents 60+ receptions, Green represents 800+ receiving yards, Purple represents 8+ touchdowns

Here, I was creating a bar graph to see how few tight ends in the league are considered "elite." The bottom of the graph to the top of the gray represents all tight ends in the league that have played 8 or more games. The bottom to red represents all tight ends that have 70+ targets and have played 8 or more games. The bottom to the blue represents all tight ends that have 60+ receptions, 70+ targets, and have played 8 or more games. The bottom to the green represents all the tight ends that have 800+ receiving yards, 60+ receptions, 70+ targets, and have played 8 or more games. The purple represents what are considered "elite" tight ends; with 8+ touchdowns, 800+ receiving yards, 60+ receptions, 70+ targets, and have played 8 or more games. What's interesting is that there were no "elite" tight ends in 2016. I thought there might be a pattern of elite tight ends increasing as time goes on, but there seems to be no pattern.

Graph #4

### Average Yards Per Position in the AFC vs the NFC in 2022



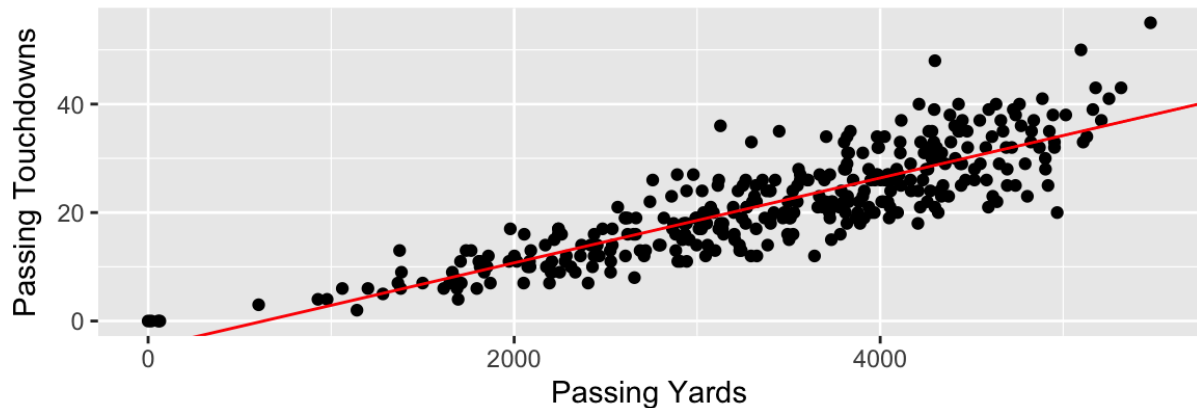
Players were selected by playing a minimum 16 games

This graph shows the average number of yards per position in both the AFC and NFC. The red represents the AFC and the blue represents the NFC. The goal of this graph was to see if any conference held a total advantage over the yards by position. I was curious, since the NFC won the Super Bowl in 2022, if they also dominated the stats. This seems to not be the case as on average, the AFC wins every position, except WR which it lost by a small margin. It is still important to note that the difference between points is still relatively small. I thought that because the NFC won the Super Bowl, that would mean they were more skilled and in turn get more yards. It is interesting to note that the production of yards has no correlation with who wins the Super Bowl. It might be interesting to look at this in a broader context over 20-30 seasons to see if there is a relationship.

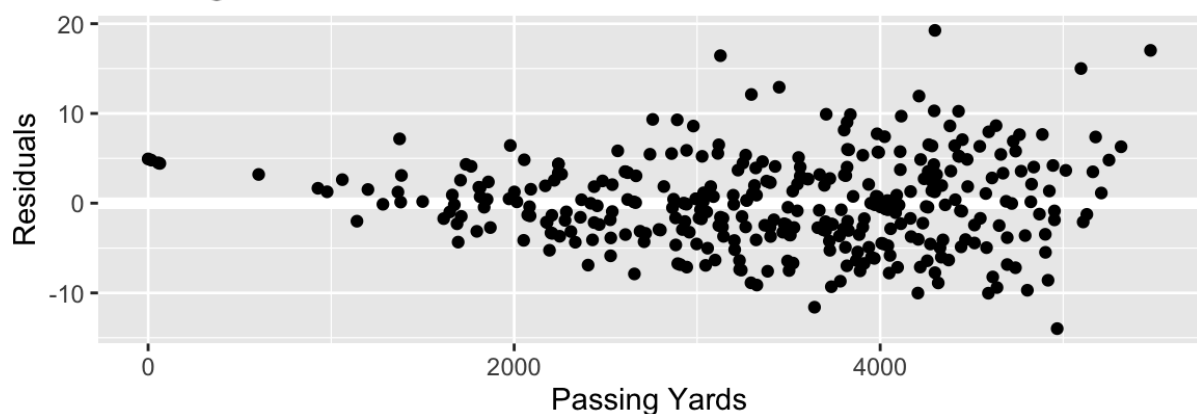
Part 2: Modeling  
Graph #1

### Passing Yards vs Passing TDs from 2012-2022

Quarterbacks must have played a full 16 games



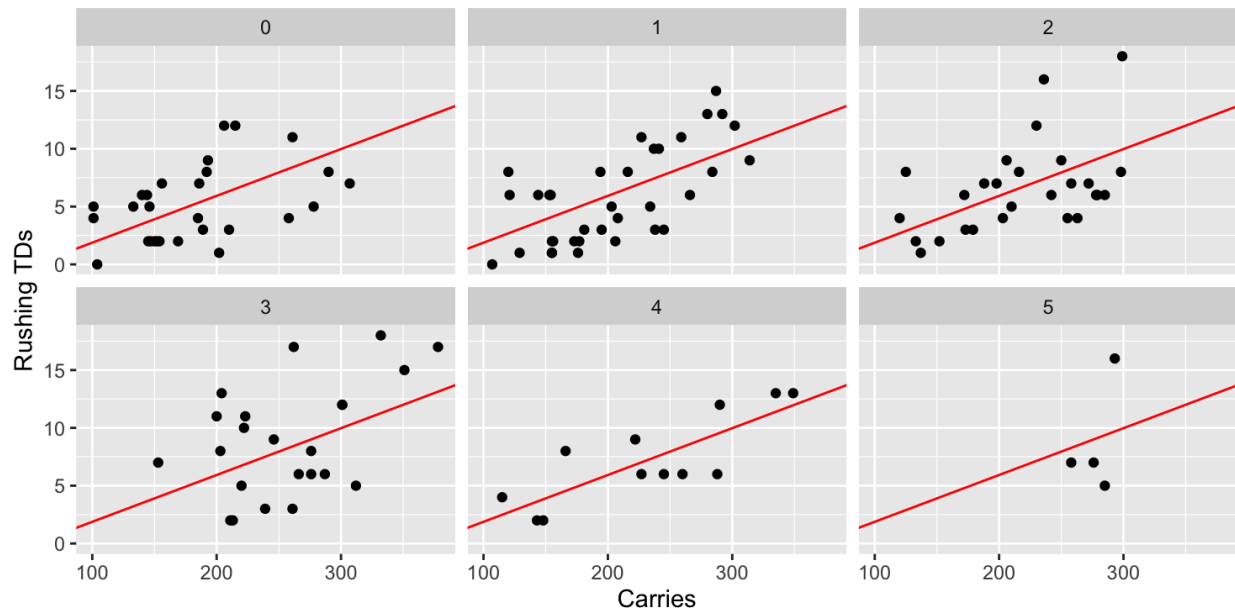
### Passing Yards vs Residuals From 2012-2022



I was looking to see how QBs performed on touchdowns based on predicted values using the passing yards. The top graph shows the relationship between the passing yards and passing touchdowns from 2012 to 2022. You can see a gradual positive relationship between the two with the red line representing the trend. The points above the red line indicate quarterbacks that had more touchdowns than the predicted value based on the passing yards. The bottom graph represents the passing yard vs residuals in the same years. There is no predictability between the two. An interesting thing to note is a couple of outliers. One is Brad Smith who is actually a WR but got credit as a QB for instances he played in the wildcat. Another one is Jacoby Brissett and the other two are Taysom Hill (who also plays multiple positions)

## Graph #2

Carries vs Rushing TDs of Over and Under Performing Running Backs from 2012-2022

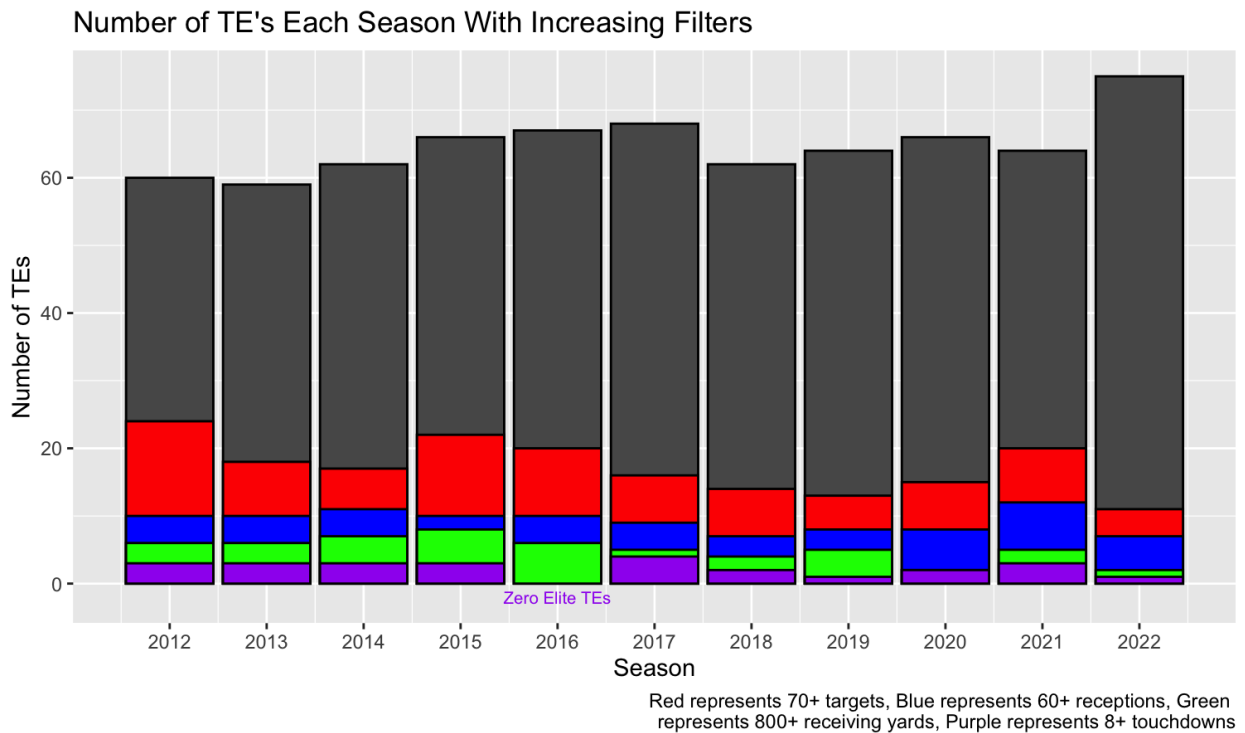


RBs needed a minimum of 16 games played and 100 carries

This graph is divided into 6 graphs based on fumbles in a given season. My goal was to see if there was a correlation between fumbles and running backs underperforming. I found underperforming running backs by making a model of carries vs rushing touchdowns where touchdowns are predicted based on carries. If the running back had a residual value of less than -1, I considered them to be underperforming meaning their touchdown value was 1 or more less than predicted. I did the opposite for the over-performing, filtering the residual value if it was greater than 1. The red line would represent where running backs that meet expectations would be. This graph shows that there isn't much of a correlation between fumbles and performance. The only thing I notice is that having 5 fumbles puts you at more of a chance of underperforming.

### Part 3: Communication

#### Graph #1



Here, I was creating a bar graph to see how few tight ends in the league are considered "elite" each year. The purple represents what are considered "elite" tight ends; with 8+ touchdowns, 800+ receiving yards, 60+ receptions, 70+ targets, and have played 8 or more games. What's interesting is that there were no "elite" tight ends in 2016. There is also no observable pattern between the number of elite tight ends over the years.