

There are a couple things I want to accomplish through this project. I would like to use this project to diagnose what is actually happening in the NFL and how the league will start to construct their teams into the future. I can accomplish this throughout a couple tasks. First, I would like to use this data to point out trends that occur across all of this year's playoff teams on the offensive side of the ball. We all know having a good quarterback is key, but what exactly is the quarterback doing for the team to win. Next, I want to do a deep dive on the Super Bowl Champion, Los Angeles Rams. Not only, because I am a Rams fan, but because they had a unique year and I would like to know what the team did well on their championship journey. It'll be interesting to know what the stabilizing force was.

On the defensive side of the ball, I would like to examine two factors: D-Line play and turnovers. It has always said that if you win up front, you win the game so I would like to see if the data backs that up with the new flashy style of football. As well as determining if forcing turnovers is the key to a defensive or being sound and playing the game conservative. This could be fun to see the trends over the regular season that just ended play out in visual form.

To accomplish these questions, I made a dashboard with seven total visualizations. It ended up taking me a while and many pages of dashboards to land on what the most important information was and how to show it in an effective format. Because the dataset I created only had one season of data (2022), I couldn't do the time series visuals I would have liked, but I did get a good look at the year as a whole.

Out of what I stated above, as I started playing more with the data, I found that I most interesting findings were when I compared playoff teams to the rest of the field. This was able to tell me what was important and how games were won. To accomplish this, I used colors to convey those that qualified for the playoffs by their team color. The teams that didn't make it, get greyed out.

You will still be able to see what they achieved, but eyes are not focused on them and they become general. It rewards those top teams and makes them easy to focus on. Five of these visualizations include the playoff delineation, the other three compare all the teams and specifically the Los Angeles Rams.

The first visualization, going from left to right, measures the total offensive touchdowns by all the teams in the NFL. These are separated by rushing and passing touchdowns so one can see how team's structured their offensive attack. For example, the Eagles led the league in rushing touchdowns with 25. However, they only had 45 touchdowns total. The Buccaneers almost managed to reach that total with only passing touchdowns as they caught 43 of them. These two both made the playoffs, but the impact on ticket sales, and touchdown time may swing heavily in the Bucs favor. Another trend I can see looking at this data is that balance does not matter in winning games. Outside of the Eagles, the best teams in the NFL strongly favor the pass over the run, and they make no secret about it. This is why having a great quarterback is key because they are relied on so heavy.

The second visualization gives the averages of important factors for the 2021 season. These factors include scrimmage plays, pass yards per attempt, completion percentage, yards per carry, and first down rush percentage. These numbers can be kept in mind when looking at the Super Bowl Champion, Los Angeles Rams on offense and defense. Looking at the data, it seems that the key to the Rams success is chunk passing yardage. Their yards per attempt average is about a whole yard better than the average which makes big difference in wins and losses. The rest of the data for the Rams is actually underwhelming. They did give up less yards than the average per carry on defensive, but they are somewhat average when looking at the other numbers. This means that they stepped up in crunch times and had moments above the norm, not

consistently through the season. This notion makes sense due to their team build of stars that step up when it counts.

The next two visualizations are scatterplots that take into account passing yards. As seen by the first visualization, the passing game is key so I examined how balance and aggressiveness correlated to wins as noted by making the playoffs. In examining the Pass/Rush yards visualization, it is evident that passing the ball directly correlates with success. This is evident how when one looks left to right, the color is mostly all to the right. The Eagles and Titans are outliers as two teams that made the playoffs while in the upper left quadrant of this graph, but they also have two of the best rushing attacks in the league so they went all in on one style of play. It is to be noted that both of these teams did lose their first playoff game. Only about half of the playoff teams eclipsed 2000 yards rushing and most others hover around that mark so this shows a team just needs enough of a running game to keep the defense honest, so one can pass more. The Pass/INT scatterplot also shows that passing is great, but so is taking care of the ball and not throwing interceptions. There is a lot of gray in the upper left quadrant and that is a double whammy in today's league. The most interesting finding is that there are not a lot of teams in the upper right quadrant. Teams that pass the ball a lot and rack up yards also don't throw interceptions so they can keep possession to get more yards. This visualization shows that aggressiveness also has to be strategic and again shows how important a great quarterback is.

The last three visualizations show the effectiveness of areas of the defense. Interceptions are the main way to turn the offense over as a defense and they are effective in winning. The only two teams in the bottom third in the league in interceptions to make the playoffs are the Raiders and 49ers. While interceptions are important, a surprising trend for me is that sacks may not be. There is a cluster around the median of playoff teams that I was not expecting. Only 5 of the top

10 leaders in sacks made the playoffs. It says that rushing the passer is nice, but isn't the key to winning in today's NFL. We noticed earlier that this is a passing league and the running game on offense isn't important, but it seems stopping the run on defense is. None of the teams in the bottom ten in the league in this category made the playoffs. The data says that if teams can run the ball on a defense, they are very hard to be stopped.

In observing this dashboard, the main takeaway is my hypothesis in the beginning. Good quarterback play is the key to winning in the NFL. It has become a passing league as evident in the data, but the one throwing the ball also has to be smart to limit turnovers. Also, the key to the Rams Super Bowl success was a high yards per attempt and stopping the run. Stopping the run is very important because if you can't, it is very hard to win games to make the playoffs. A good defensive line is important, just not in the ways that I thought.



