NFL Capstone Project Proposal

To all NFL owners, thank you for the time to discuss my proposal. As we all know, hiring a general manager or coach is not an easy task. With how competitive the league is, you really only get a couple years before deciding if the people in power are the right ones. But could there be a better way to predict long-term success? My proposal is to go deep into NFL statistics from the last few years and see what statistical trends bettered each team's chances of success and could possibly create a predictive model.

There is a fine margin for success in the league. A few plays here or there can make the difference between finishing 10-6 or 6-10. The league really is that competitive. And one of the issues that face teams is their coaching philosophy. Some are big believers in running the ball while others strive for a dynamic passing attack. The question is how much does either really impact the chances of a team's success? Is the total amount of rushing yards more or less important than the amount a team averages per game? Should teams focus more on passing yards than pass attempts? And lets not forget about the defense. What statistics should they focus on when crafting their schemes? Are sacks more important than yards given up? Does creating turnovers give a bigger boost to a team's winning percentage? Also, how important is a team's success on fourth down? Should they go for it more often? All of these are possible questions that could be answered by this deep dive into NFL statistics.

My method for getting all this information is to go team-by-team and game-by-game from 2015 to 2017 and see what statistics really gave each team the better chance of winning. While there are only 32 teams, each is constructed very differently with personnel as well as coaching schemes so there can be some issues with a simple look at the NFL as a whole. You need to go through each game for each team to really see what led to their success and failure. And the reason to keep it within only 3 years is how much turnover occurs in the league. Teams change drastically each season when it comes to personnel. While winning teams may make small changes, losing ones can overhaul their entire roster. It's important to keep the seasons close together to better the chances of obtaining a more consistent dataset.

And when it comes to datasets, there are plenty out there to help dive into all of these statistics with the main one being the Stattleship API. It has game-by-game statistics for each team that will give me the main information I need. There will also be more feature-specific statistics in the project that focus on where a team is by a certain point. For example, there could be a column for average rushing yards through the first half of the year or median amount of points against for each team going into the final stretch of the season. These features and others will assist in making this project more successful.

When all is said and done, the purpose of this project is to see what statistics truly measure a team's success as well as figure out how much they can predict a club's future and help you as owners make better decisions when hiring a coach or general manager. I will have my code on my GitHub repository, a report that describes the process I went through in obtaining and wrangling the data as well as what I discovered plus a PowerPoint presentation to discuss it. There is certainly a need for this type of research as everyone in the NFL looks to get a leg up on their competition. Yet no matter how much these datasets can help, there is still no accounting for the human element. There will always be unforeseen setbacks for each team like

a bad injury or a horrible decision by a referee. But despite these possible difficulties, this project could have a major impact on the way we look at the NFL.