

Efficiency of NFL Pass defenses in 2018

The NFL and its 32 professional teams have created an environment friendly to quarterback-led offenses which has made defending the pass significantly more difficult. Where defensive players were allowed to contact offensive players, hit offensive players in certain ways, and affect the routes being run by WRs, today those tasks are more difficult. This project seeks to examine the relationships between the Quarterback Passer Rating and the most effective defensive scheme or schemes, player personnel packages, and types of players for defending the pass in the modern NFL. Ultimately the goal will be to predict the most effective player personnel packages and defensive schemes that lead to a lower Quarterback Passer rating. It is often said that offense is exciting but defense wins championships and in today's NFL, teams must be able to stop the pass in order to have a shot at the coveted Superbowl appearance and potential Lombardi Trophy.

The data used in this project will include the Game Data which expresses each of the 32 teams with the key variable being Game ID. Another data set will be the Player data that contains player level information broken down by position. This will create the opportunity to focus on specific personnel, assess their rankings among their peers, and the impact that has on the pass defense overall. The key variable will be NFL ID. A third data set that will be used is the Play data that contains play level information for each play in every NFL game in 2018 for every team. This will be useful in assessing which plays were most successful against the run and noting the relationship between those plays and personnel being used in those plays. The key variables are Game ID and Play ID. The final data set will be the Week data set which contains player tracking data for each team over each of the 17 weeks of the 2018 regular season. This data can be used to compare players within schematic systems that prove a strong relationship to successful pass defense play.

I will utilize a Github repo that contains the step by step work completed in solving this business problem. I will convey the findings through a slide deck as well as a progress report that details my findings, outlining the successful defensive schemes against the pass and the type of players and positions key to enhancing productivity and their position.