MODELLING SUCCESS IN THE NFL

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OVERVIEW

- Goals of Project
- The Data
- Modelling
- Conclusion

GOAL OF PROJECT

- Develop a model that evaluates the performance of an NFL team.
- Compare performance based on different levels of success.

WHAT IS SUCCESS IN THE NFL

- 1 out of 32 teams wins Super Bowl every season
- Not a good measurement for analysis
- How do the other 31 teams know what they need to improve?
- Teams should create easier, more incremental goals.

SUCCESS TARGETS

- More easily reached
- Incremental
- Success Targets:
  - .500 Record
  - Making the playoffs
  - Winning Super Bowl

EVALUATING PERFORMANCE

- What level of performance does a team need to reach the a success targets?
- Three most useful performance metrics
  - Wins
  - Points scored
  - Points conceded

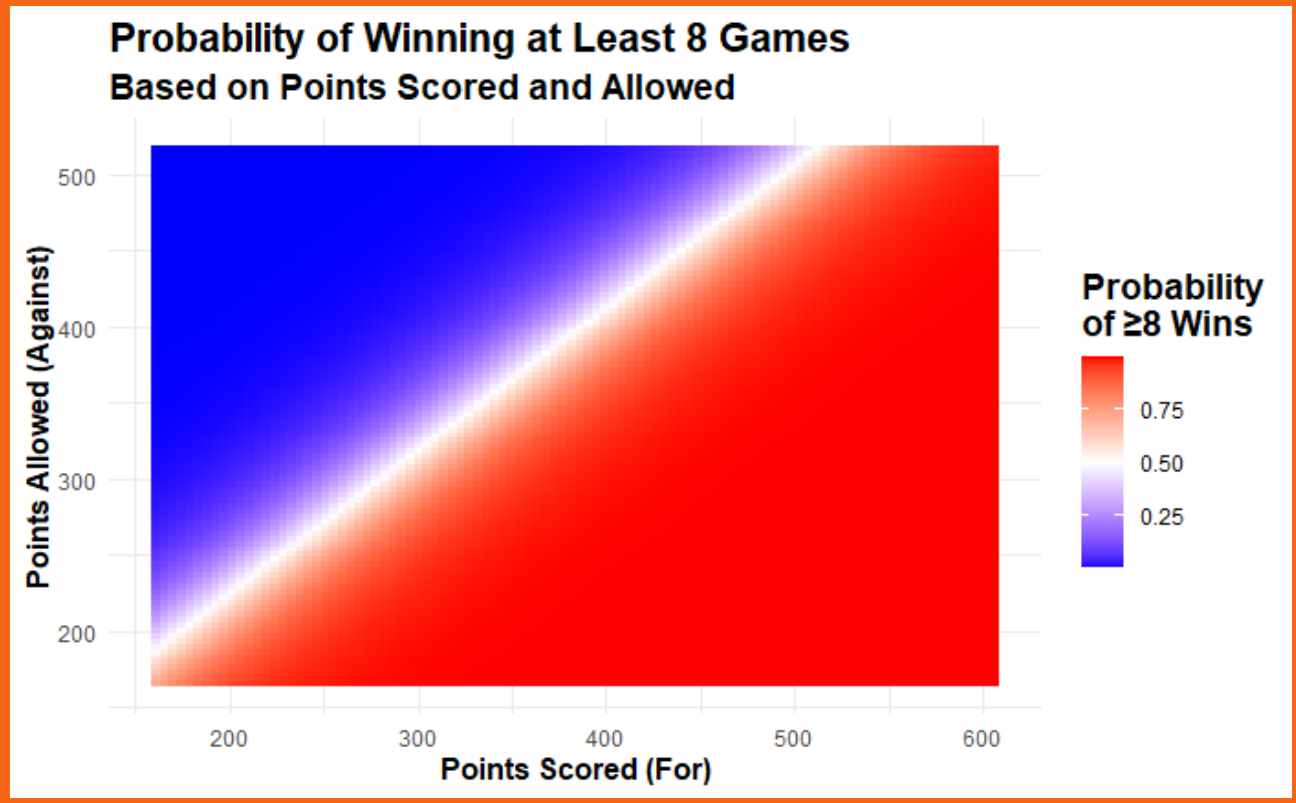
THE DATA

Variable	Class	Description
team_name	character	Team name
year	integer	Season year
wins	double	Wins (0 to 16)
points_for	double	points for (offensive performance)
points_against	double	points for (defensive performance)
playoffs	character	Made playoffs or not
sb_winner	character	Won Super Bowl or not

MODELLING .500 TEAMS

There is strong evidence to suggest:

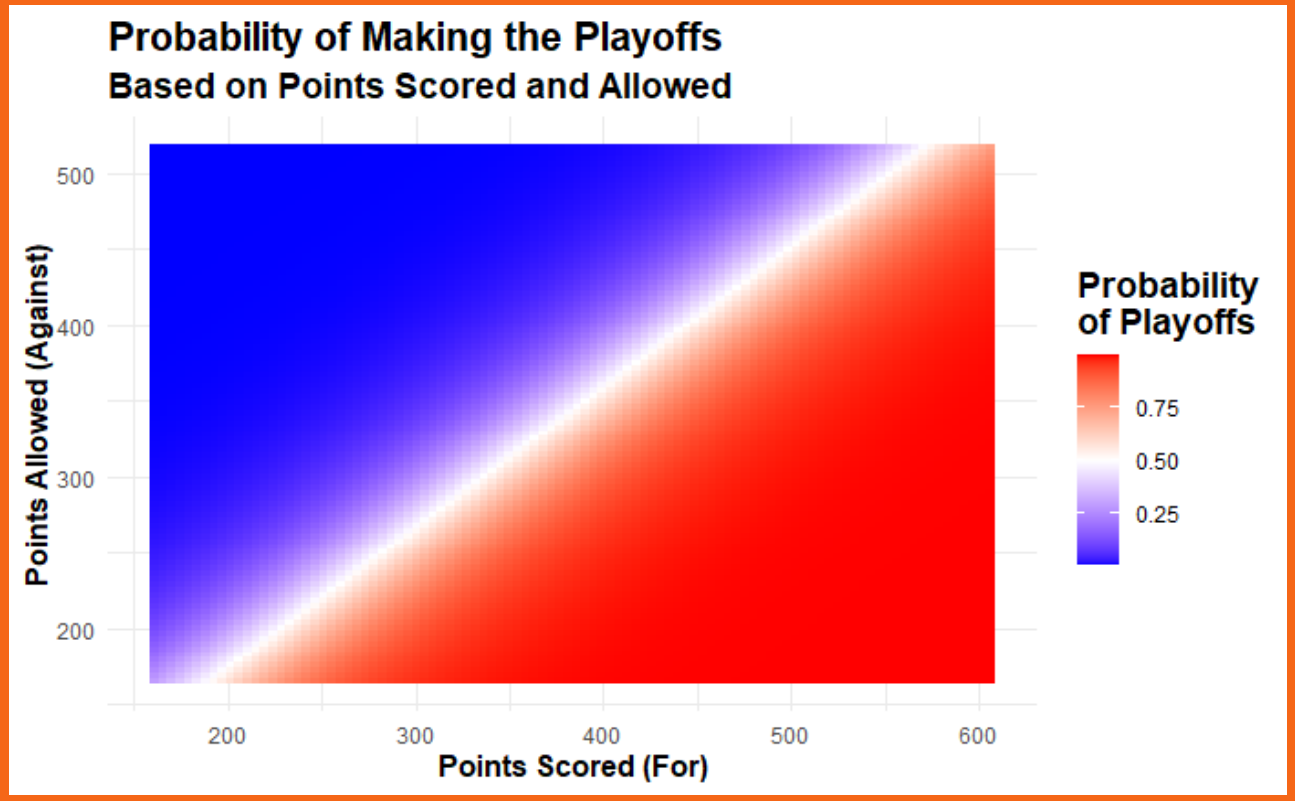
- Every touchdown scored increases the odds of a team having a .500 and above record by 28%
- Every touchdown conceded decreases the odds of a team having a .500 and above record by 28%



MODELLING PLAYOFF TEAMS

There is strong evidence to suggest:

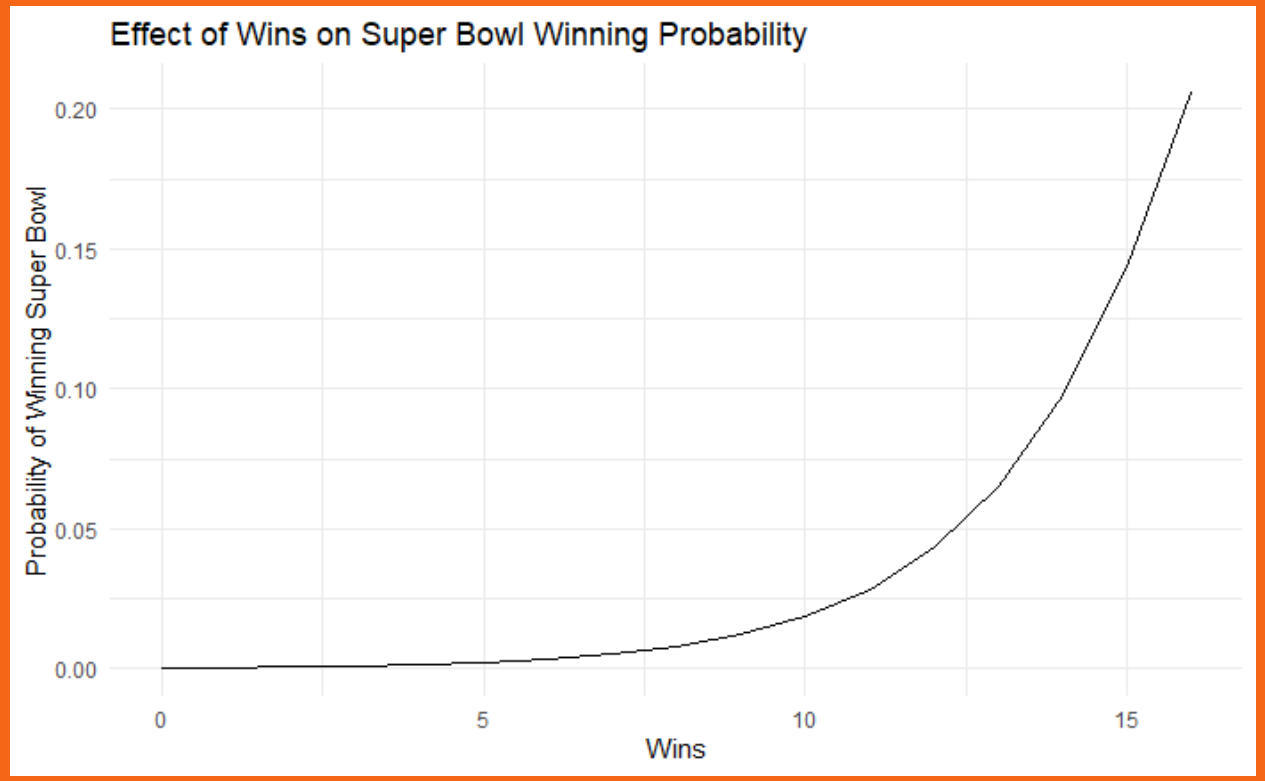
- Every touchdown scored increases the odds of a team making the playoffs by 21%
- Every touchdown conceded decreases the odds of a team making the playoffs by 21%



MODELLING SUPER BOWL TEAMS

There is strong evidence to suggests:

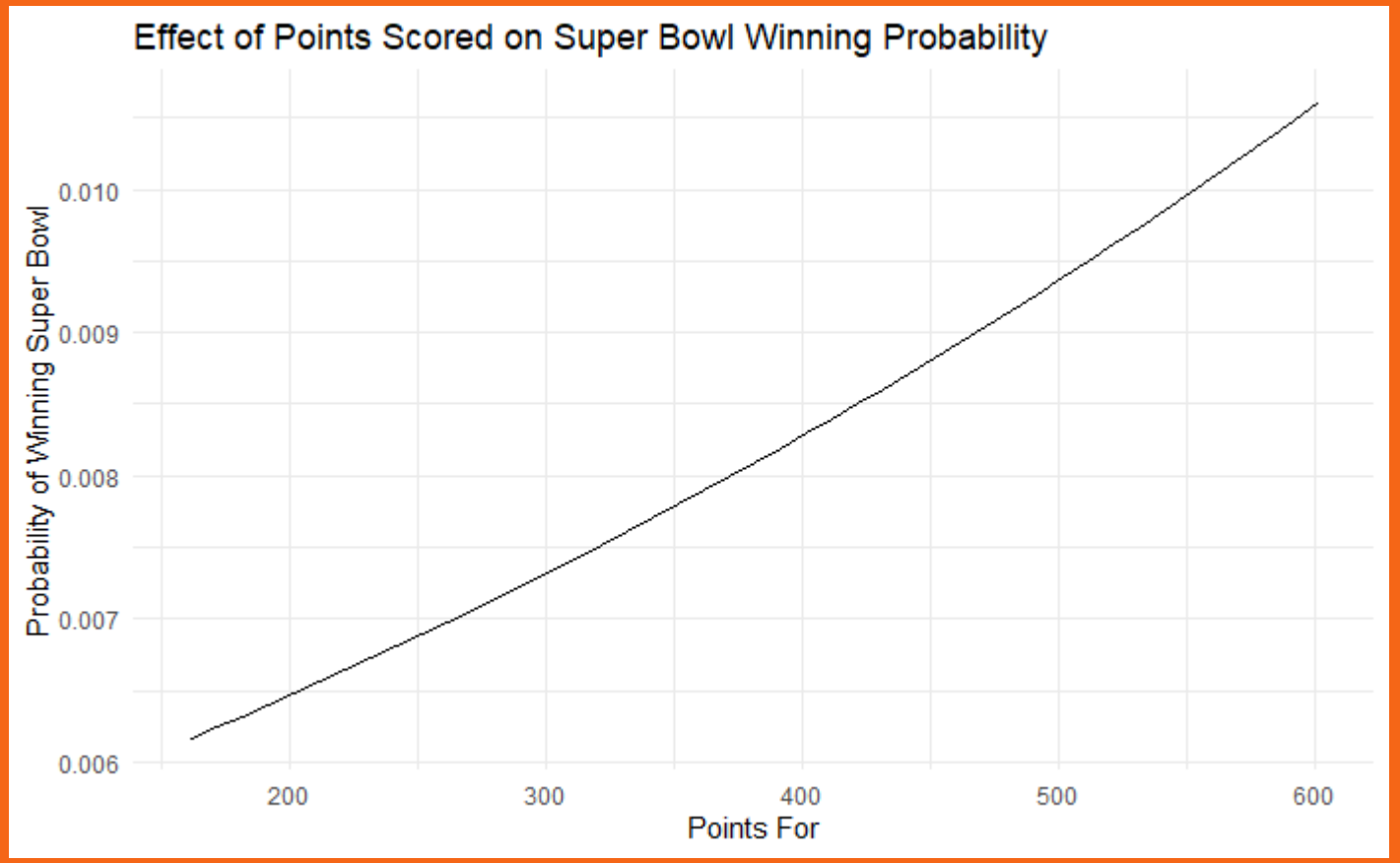
- Every win increases the odds of a team winning the Super Bowl by 55%



MODELLING SUPER BOWL TEAMS

There is some evidence to suggests:

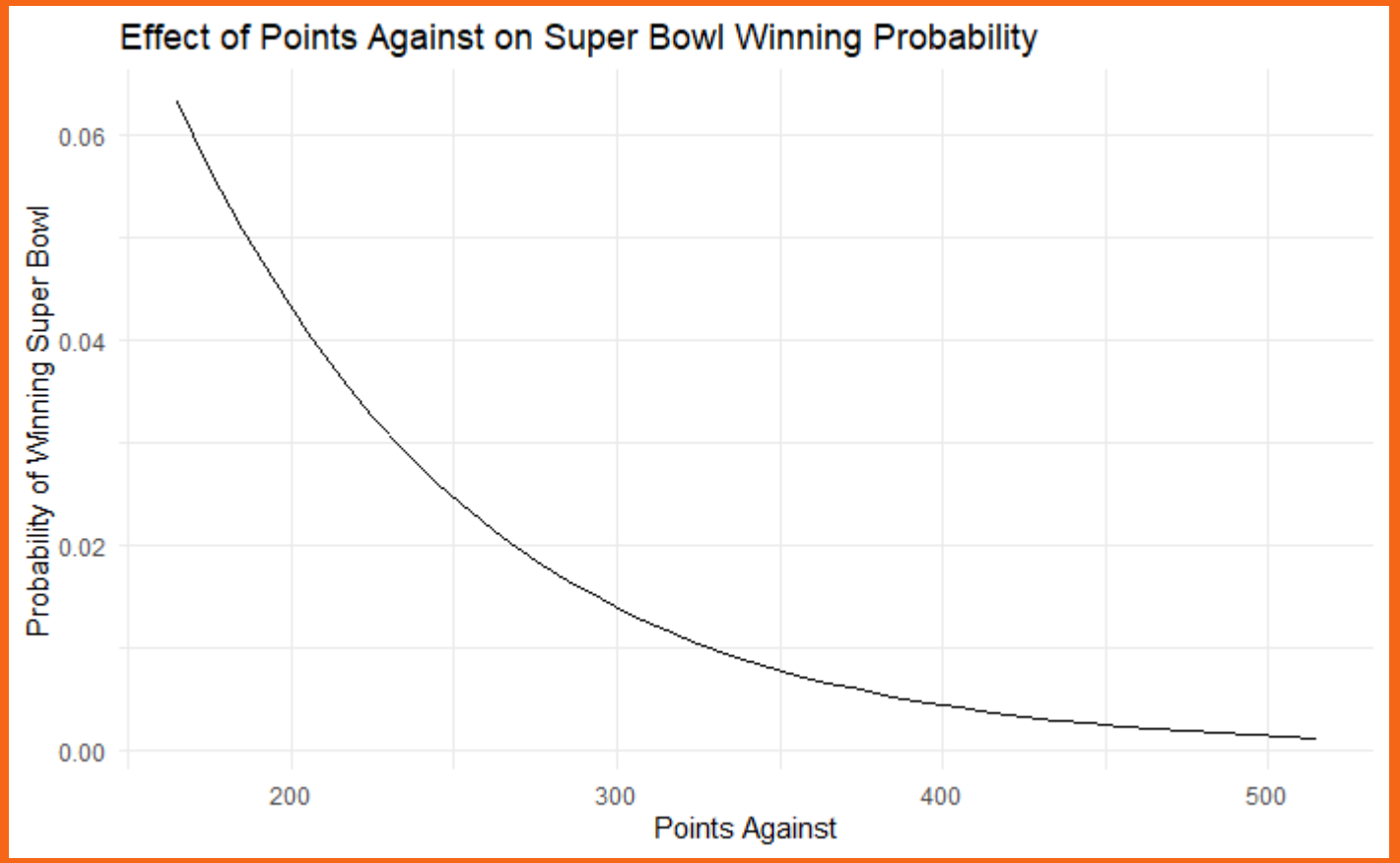
- Every touchdown scored increases the odds of a team winning the Super Bowl by 0.7%



MODELLING SUPER BOWL TEAMS

There is some evidence to suggests:

- Every touchdown conceded decreases the odds of a team winning the Super Bowl by 7%



MODELING PLAYOFF TEAMS VS SUPER BOWL WINNING TEAMS

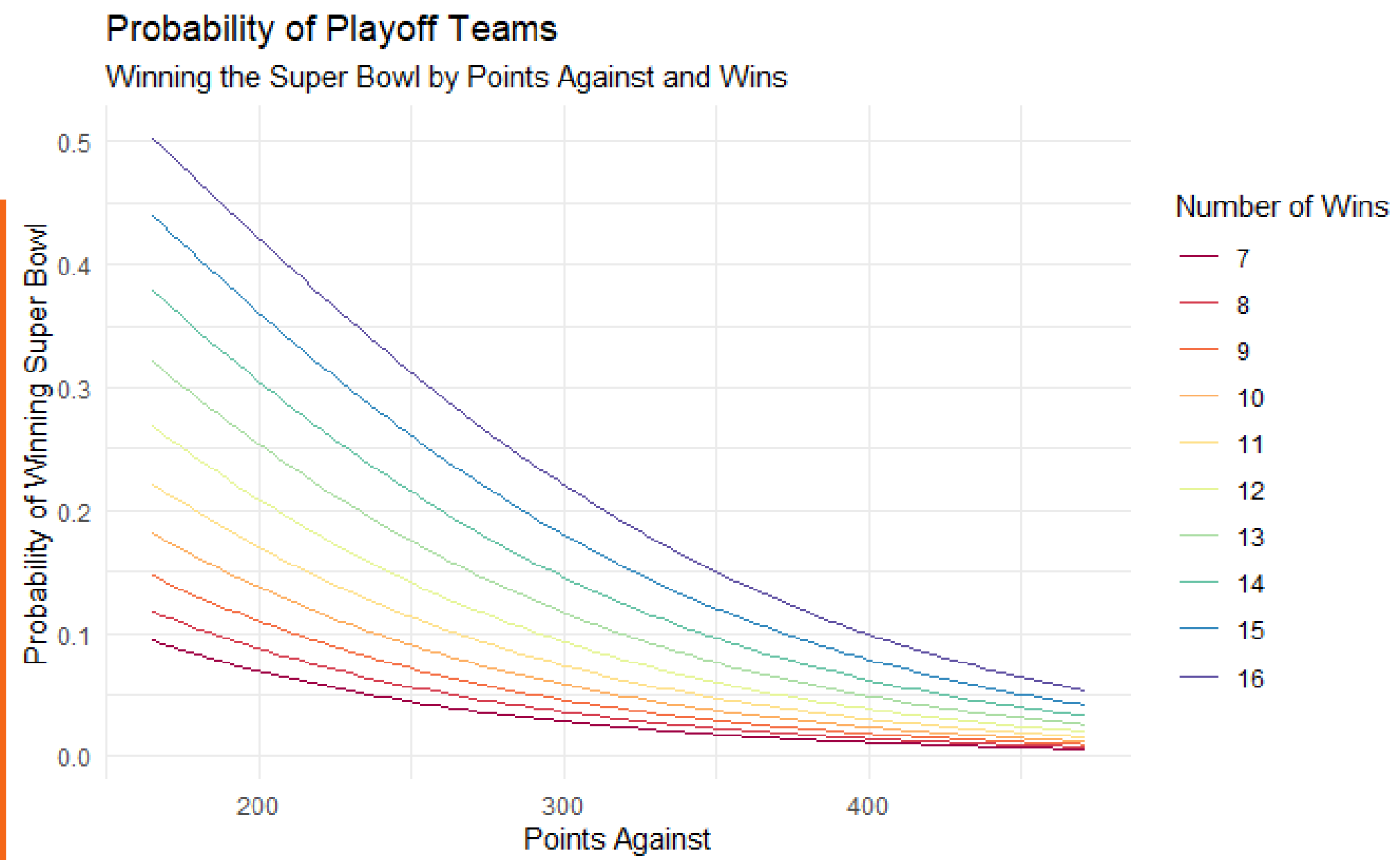
- There is no evidence to suggest that:
  - A difference in points scored influences the probability of winning the Super Bowl

There is some evidence to suggests:

- Every win increases the odds of a playoff team winning the Super Bowl by 29%

There is strong evidence to suggests

- Every touchdown conceded decreases the odds of a playoff team winning the Super Bowl by 0.7%


Probability of Playoff Teams
Winning the Super Bowl by Points Against and Wins
Probability of Winning Super Bowl
0.5
0.4
0.3
0.2
0.1
0.0
200
300
400
Points Against
Number of Wins
7
8
9
10
11
12
13
14
15
16

CONCLUSION

- Key Findings:
  - Points scored and conceded significantly influences NFL success.
  - Additional wins dramatically increase Super Bowl winning chances.
- Implications:
  - Useful for setting performance goals and training priorities.
- Future Directions:
  - Include more variables on player data and game conditions.