TEMPLATE
INSTRUCTIONS

Please use these instructions
to complete your academic poster

1. Please read all instructions before beginning.
2. Fill out your poster title in ALL CAPS. Names should also be in ALL CAPS.
3. The text size of the title can be decreased if it is too long.
4. Fill in any applicable info in subtitles and paragraphs on the rest of the poster.
5. Click the “Pictures” icon under Insert to locate an image on your computer, or drag a photo into the poster.
6. After your image is placed, when it is selected, use the options in the hovering menu at the bottom of the image to crop, resize, and reposition your image.
7. Before submitting your poster, delete this instruction page.
8. Save your PowerPoint with only the remaining completed poster slide.
9. Save your PowerPoint Poster as a PDF
10. Submit the finalized PDF of your poster by **November 17th, 11.59 pm.**

OFFENSE WINS GAMES

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Introduction

- My project explores the correlation between offensive yardage, points scored and win outcomes for the best and worst NFL teams during the 2023 season.
- Research on NFL statistics consistently shows that offensive productivity, such as high yardage and scoring, often correlates with increased winning rates.
- an analysis of past NFL seasons shows the big role of passing and scoring stats in determining who wins and loses games, showing us that teams with stronger offensive stats typically has more wins than loses
- Does the yards per game and points scored relate to the number of wins between the best and worst team in the NFL in the 2023 regular season?

Hypothesis-If a team gains more yards per game and scores more points per game, then they will have more wins over the 2023 regular season compared to the team with the lowest yards and points, as greater offensive productivity is expected to correlate with better game outcomes.

METHODS

Samples & experimental setup:

- Independent variable- points scored/ yards per game
- Dependent variable- number of wins based on yards and points scored because it changes every week
- Controlled Variable - number of games played/ game location/ teams played against
- Correlation study to analyze the relationship between offensive productivity and wins

Data collection:

- Gathered the points per game, yards per game, and wins data from the sources and plugged them into excel
- We then organized the data and included columns for the three categories.
- Checked with my sources to make sure all of my data was correct

Acknowledgments

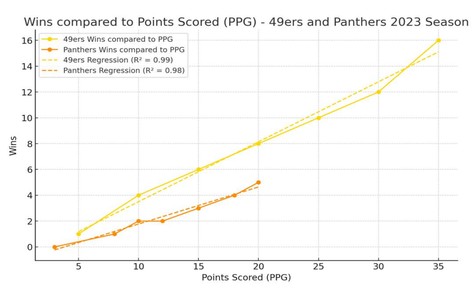
METHODS CONT.

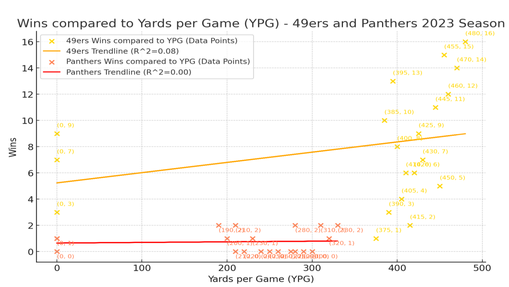
-Analysis:

- Create a scatter plot using the week-by-week data containing one with points per game on the x axis and wins on the y axis and then another graph with yards per game on the x axis and wins on the y axis
- added trend lines to calculate the strength of the coordination.
- used statistical analysis to assess the relationships between the three categories and see if this supported my hypothesis or not.

Results

Week	49ers Points Scored (PPG)	49ers Total Yards (YPG)	49ers Result	Panthers Points Scored (PPG)	Panthers Total Yards (YPG)	Panthers Result
1	28	375	1	14	275	0
2	31	415	2	16	290	0
3	24	390	3	13	260	0
4	0	0	3	0	0	0
5	27	405	4	10	250	0
6	35	450	5	15	280	0
7	30	420	6	9	240	0
8	28	410	6	3	210	0
9	34	430	7	17	300	0
10	0	0	7	7	220	0
11	27	400	8	25	320	1
12	31	425	9	3	200	1
13	0	0	9	0	0	1
14	24	385	10	10	230	1
15	33	445	11	0	0	1
16	35	460	12	20	310	2
17	28	395	13	16	280	2
18	37	470	14	23	330	2
19	34	455	15	6	190	2
20	38	480	16	16	210	2





DISCUSSION

Since I have two graphs the first one looked like this The R^2 value for the 49ers' trendline is **0.11**, indicating a **weak** correlation between points scored (PPG) and wins. The R^2 value for the Panthers' trendline is **0.07**, also indicating a **weak** correlation. These values show that while there is a slight positive relationship for both teams, points scored have limited predictive power for wins based on this dataset

And the second graph looked like this. The R^2 value for the 49ers' trendline is **0.08**, indicating a **weak** correlation between yards per game (YPG) and wins. The R^2 value for the Panthers' trendline is **0.00**, indicating **no correlation** between yards per game (YPG) and wins. These results suggest that yards gained per game have little to no predictive power for wins in this dataset.

CONCLUSION

- My hypothesis stated that there would be a strong correlation between points scored and wins and yards per game. My trendline did not match on either graphs.
  - Points per game and wins had a slightly positive relationship and yards per game and wins had a weak relationship. This suggests that offense is important however not the most important factor to winning games.
  - One issue that was big was the controlled variables as you cannot fully control the weather or indoor/outdoor stadiums. and also a selections bias doing the best and worst offenses.
  - In the future if I were to do a study like this I would expand the study to different years and to increase amount of data and I would have selected closer statistical teams.
  - I would have tested different stats like third down conversions, or time of possession.
  - In a further experiment I would I would aim to complete a study that could help teams in the playoffs.

Text

- *NFL.com*. (n.d.). NFL.Com. Retrieved November 17, 2024, from https://www.nfl.com/stats/team-stats/offense/passing/2023/reg/all

- **. https://www.samford.edu/sports-analytics/fans/2019/The-Most-Important-Aspect-to-Winning-Football-Games-from-Last-Years-NFL-Season**

- **https://www.footballperspective.com/correlating-passing-stats-with-wins/**