



# Posses or Perish: How Best to Play It

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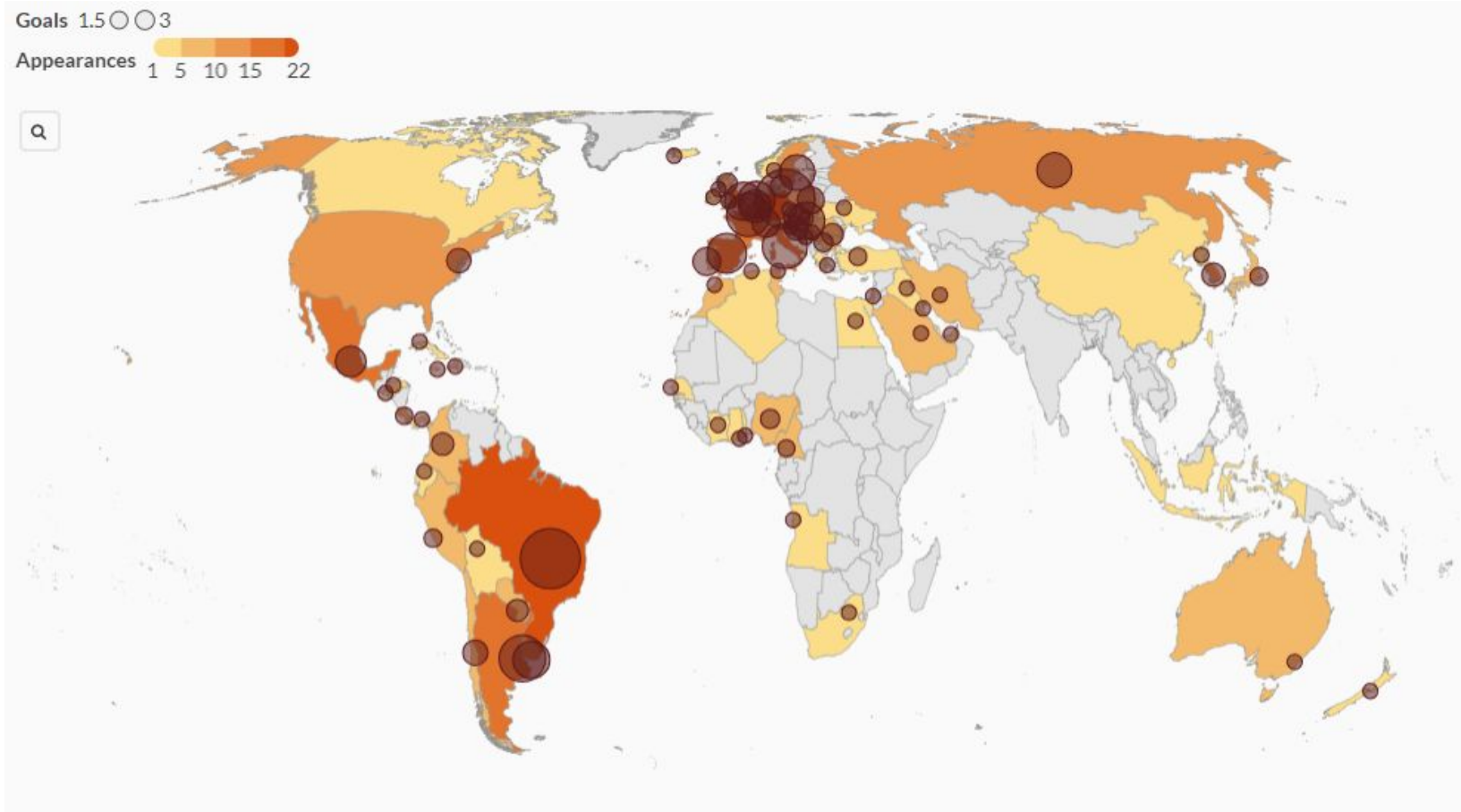
W209 Section 5 Group 3

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**FIFA WORLD CUP**  
**Qatar2022**

# Introduction



- One of the main popularizers of possession was Dutch legend [Johan Crujff](#)
- Ultimate importance kick-started with the Spanish “tika-taka”
- Objective is to understand possession time as a key performance indicator that influenced 2022 WC

# Data

- [Public Fifa World Cup 2022 Dataset from Kaggle](#)
  - Includes 64 matches with both teams' respective statistics such as number of goals scored and attempts made
  - The dataset was obtained from web scraping the Fifa website
    - Transformations to the data were made to ease the data visualization process. Each row represents one team's statistics from a match instead of two teams' statistics for one row
- Player Statistics: [Player performance](#) data from Kaggle
- [Weather Dataset from wunderground.com](#)
  - Includes many weather dimensions in Qatar from the dates of the World Cup (Nov. 20, 2022 - Dec. 18th 2022)
    - Includes temperature, humidity, precipitation, and wind conditions

# Users

- Soccer Analysts
- Soccer Coaches
- Soccer Brands
- Soccer Betting Companies
- Soccer Fans
- Soccer Players



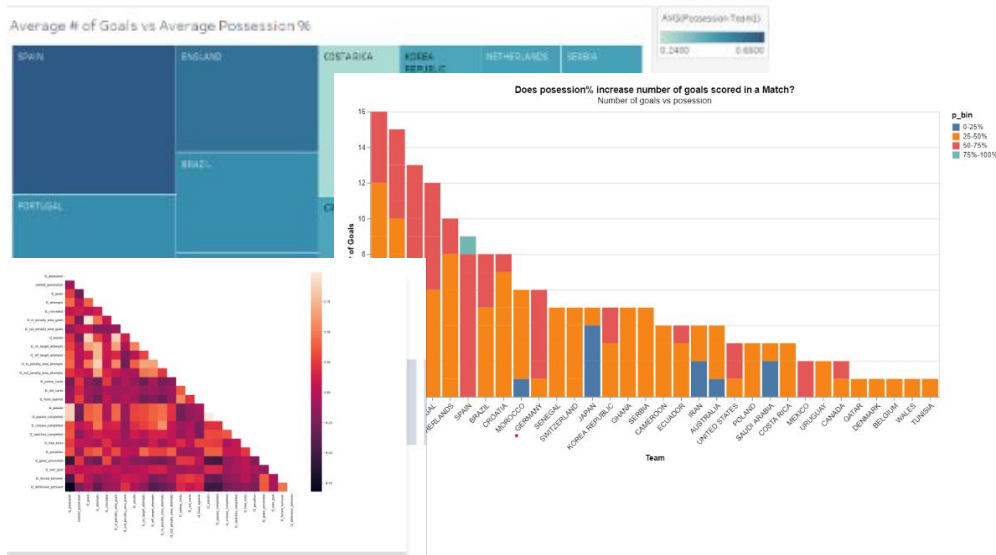
# Tasks

- To what extent does possession percentage impact a team's scoring rate?
- How do possession skills influence a player's success rate in scoring goals and avoiding yellow cards?
- Is there a correlation between the number of penalties awarded to a team and their ability to score goals?
- How does possession percentage affect a team's ability to create scoring opportunities while avoiding yellow cards?
- How do attempts inside and outside the penalty area affect a team's scoring rate?
- How does defensive pressure impact turnovers and penalties, and what is the relationship between those factors and goals and yellow cards?
- In what ways does weather influence game outcomes and goal-scoring rates?

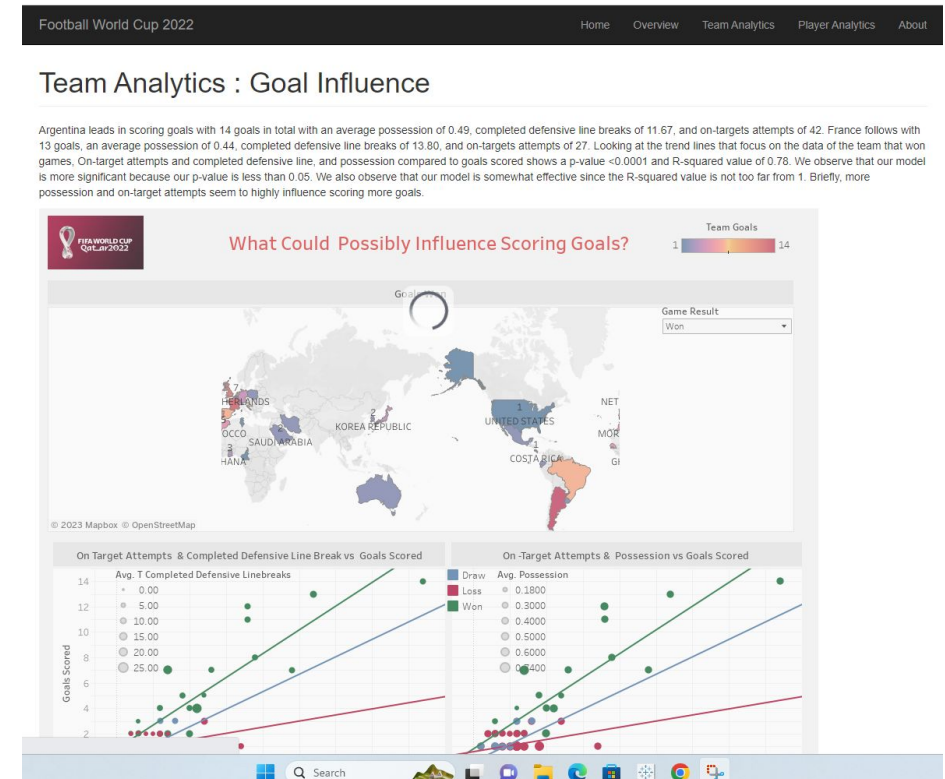


# Usability Testing led to Improvements

## Before Usability Testing



## After Usability Testing



## Insights/Learnings from Usability Testing

- Changed from 'disconnected' dashboards to a holistic story
- Organized dashboards into "Team Analytics" and "Player Analytics"
- Provided an overview of each dashboard to assist the user in understanding



# Why Tableau?



- Quickly create interactive visualizations (helpful for EDA)
- Team familiar with Tableau
- Can easily create a Maps dashboard
- Needed some customization with dashboards, but not a lot
- Implement cross filtering in the dashboard
- Easily insert to website by using Tableau Public's embedded code function

# Live Demo

[2022 Fifa World Cup \(Possess or Perish\)](#)



# Insights + Use Cases

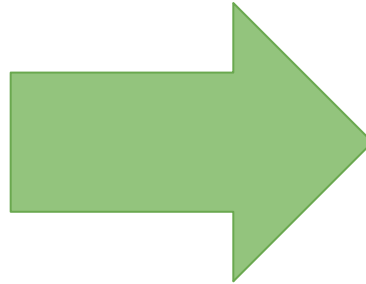
- More possession and on-target attempts seem to highly influence scoring more goals
- Teams with a high number of average goals generally have more attempts inside the penalty area on average
- High goal scoring teams in individuals matches are clustered together at around 10 attempts inside the penalty area and 4 attempts outside the penalty area
- The most goals scored in the 2022 Fifa World Cup belongs to Kylian Mbappe
- As temperature, wind speed, and humidity decreased, the number of goals and passes increased

How we started? The initial Version

# Usability Testing led to Improvements

## Learnings from Usability Testing

- Make axes more clear/visible
- Make metrics understandable
- Add in additional weather features
- Dashboards seem disconnected and separate

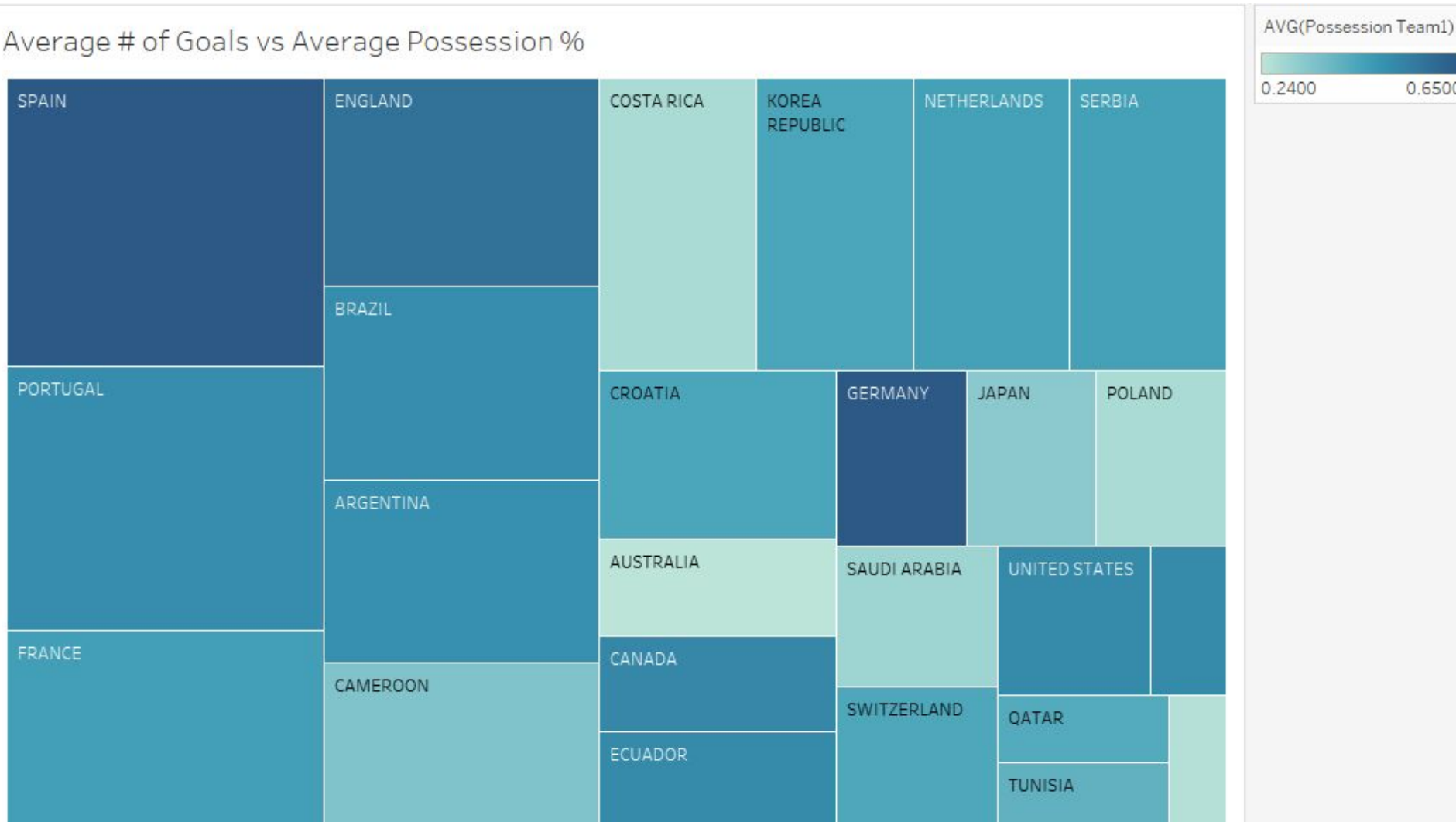


## Changes to Dashboard

- Updated axis labels
- Changed layout of dashboard
- Made title larger, standardized title font/size across all dashboards
- Weave and organize dashboards together by using headers (eg. Team Analytics, Player Analytics)

# Basic EDA

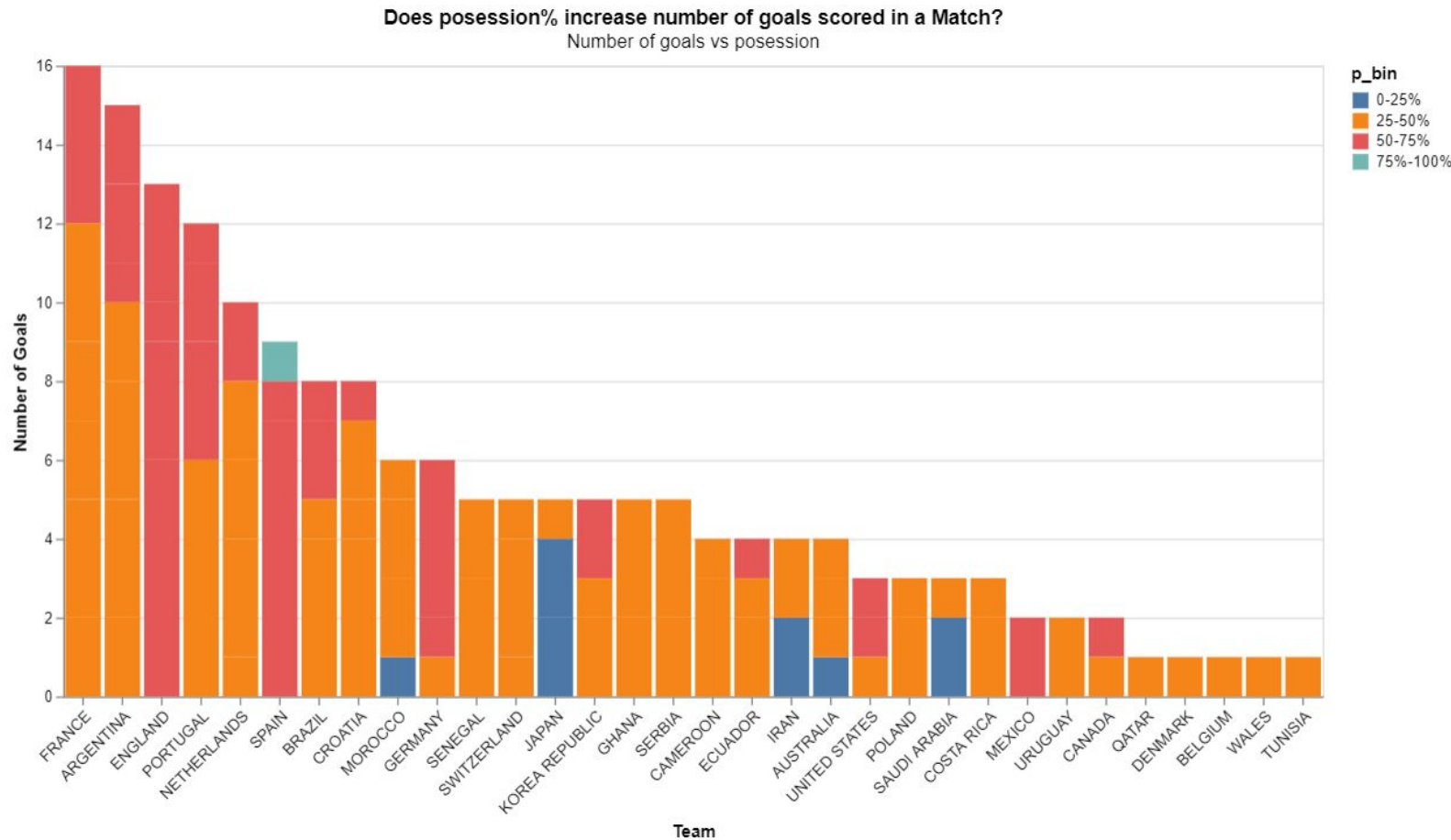
Average # of Goals vs Average Possession %



## Observations:

- Sample Size: 65 matches
- it doesn't seem there's an obvious relationship between possession time and goals scored

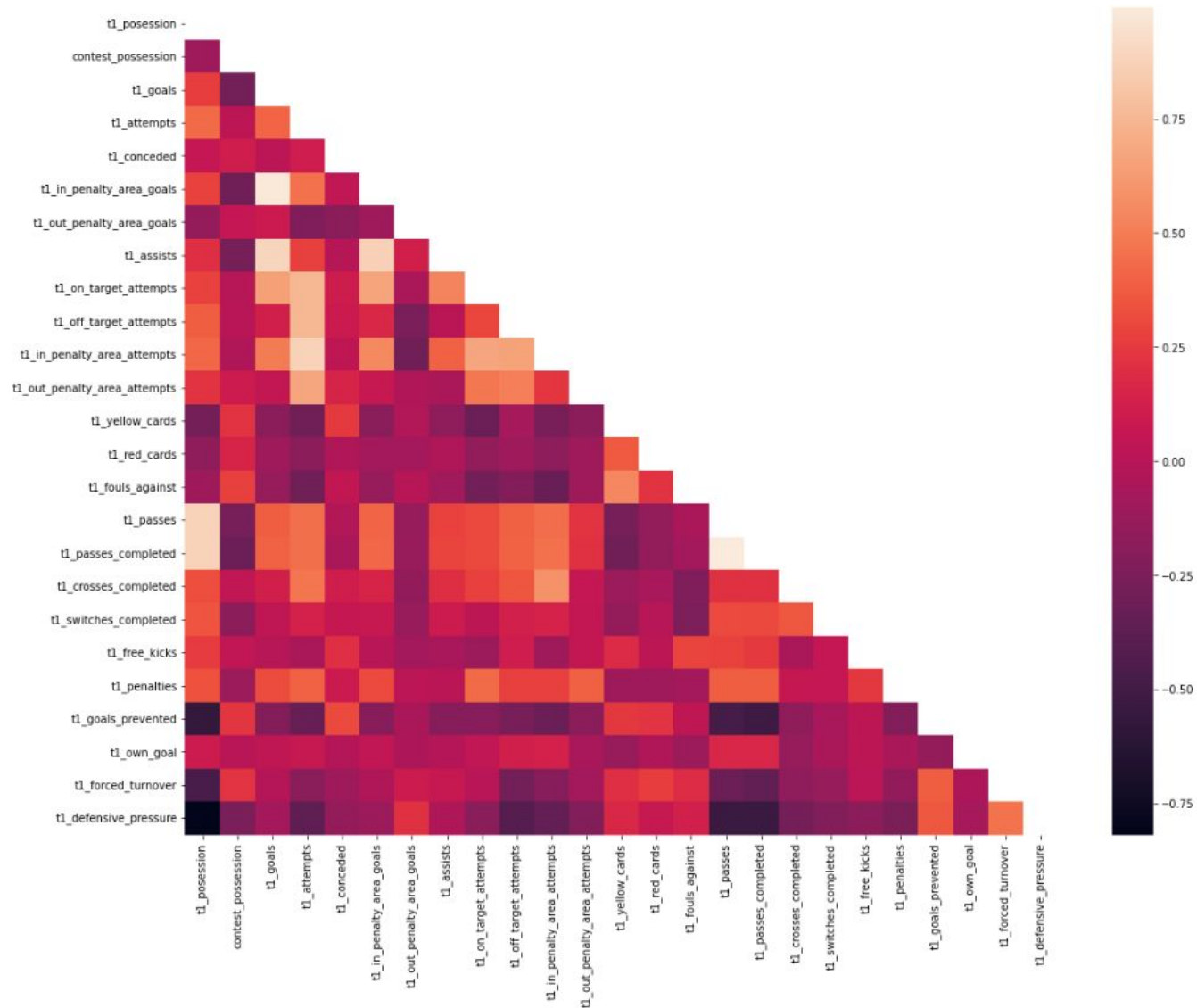
# What is the effect of possession on the match outcome?



## Observations:

- Sample Size: 65 matches
- Cannot guarantee possession as a key indicator for number of goals scored
- Teams with less than 25% possession scored 50% less goals

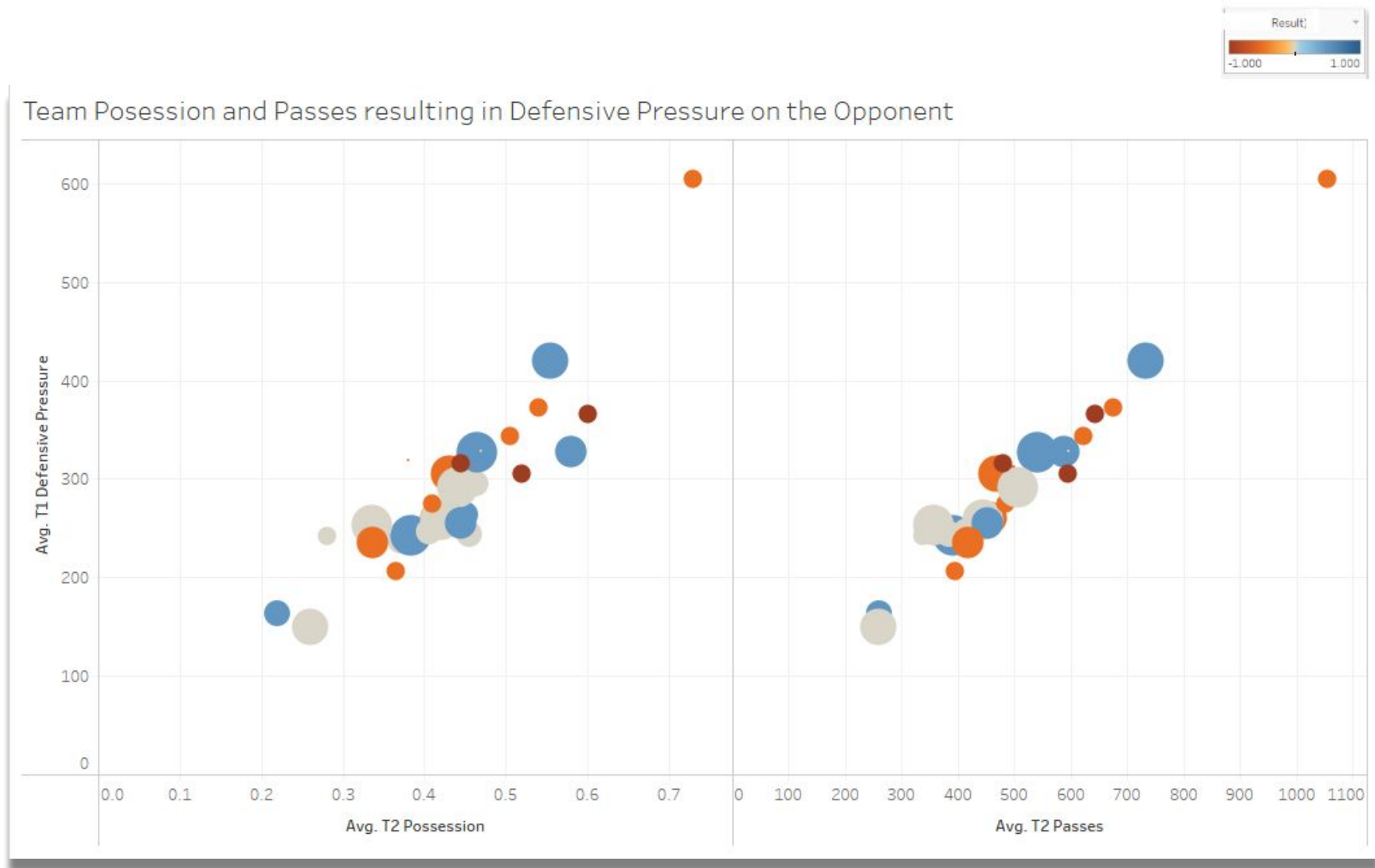
# Correlation between possession, passes, goals and faults



## Possession Correlations:

- Negative correlation with defensive pressure, forced turnover, goals prevented, faults
- No strong correlation with the goals scored
- Positive correlation with passes and attempts

# How does extreme ends of possession and pass affect match outcome?

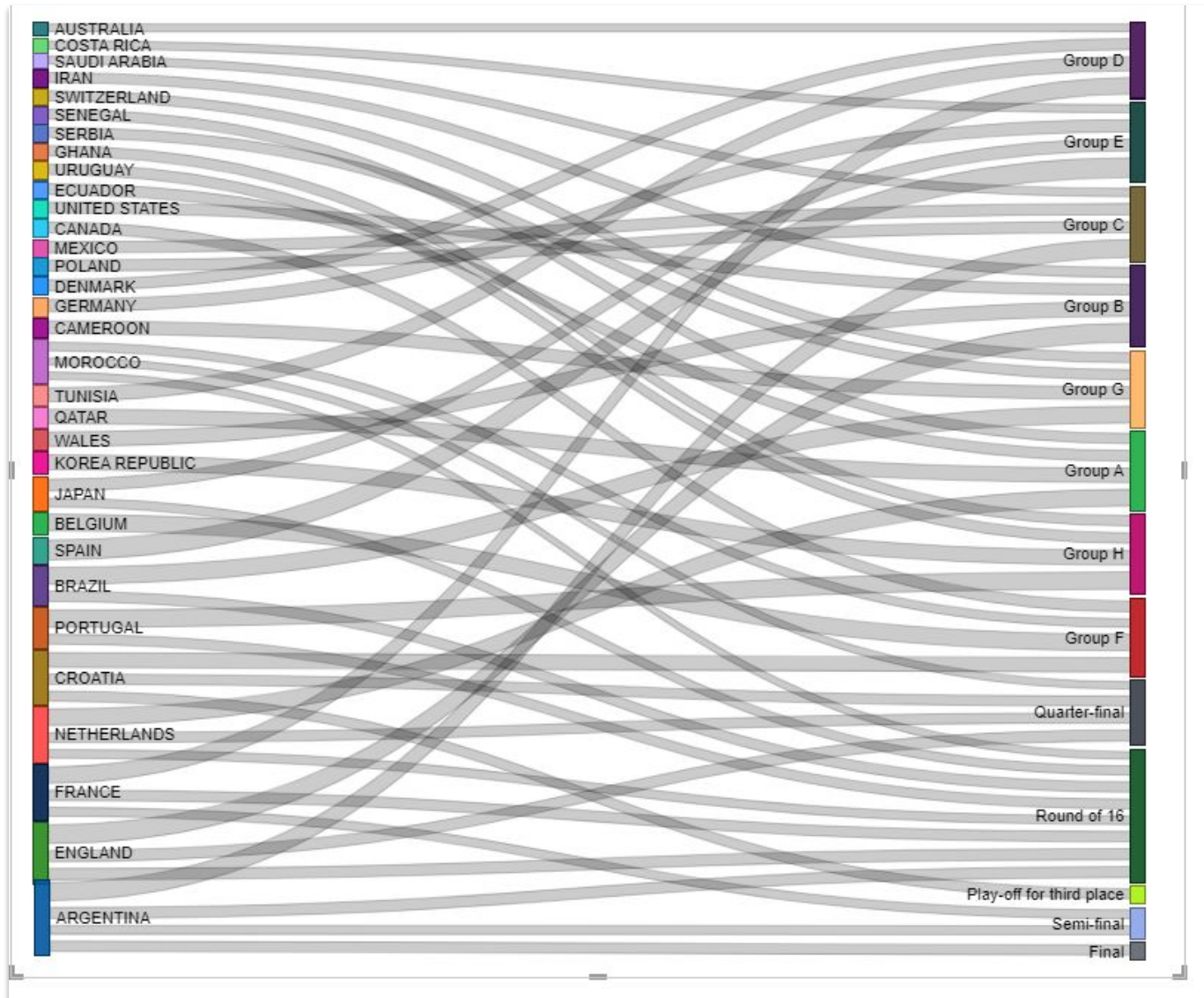


## Observations:

- Moderate possession and passes result in favourable outcome
- Higher possession results in higher defensive pressure on opponent but does not yield positive outcome



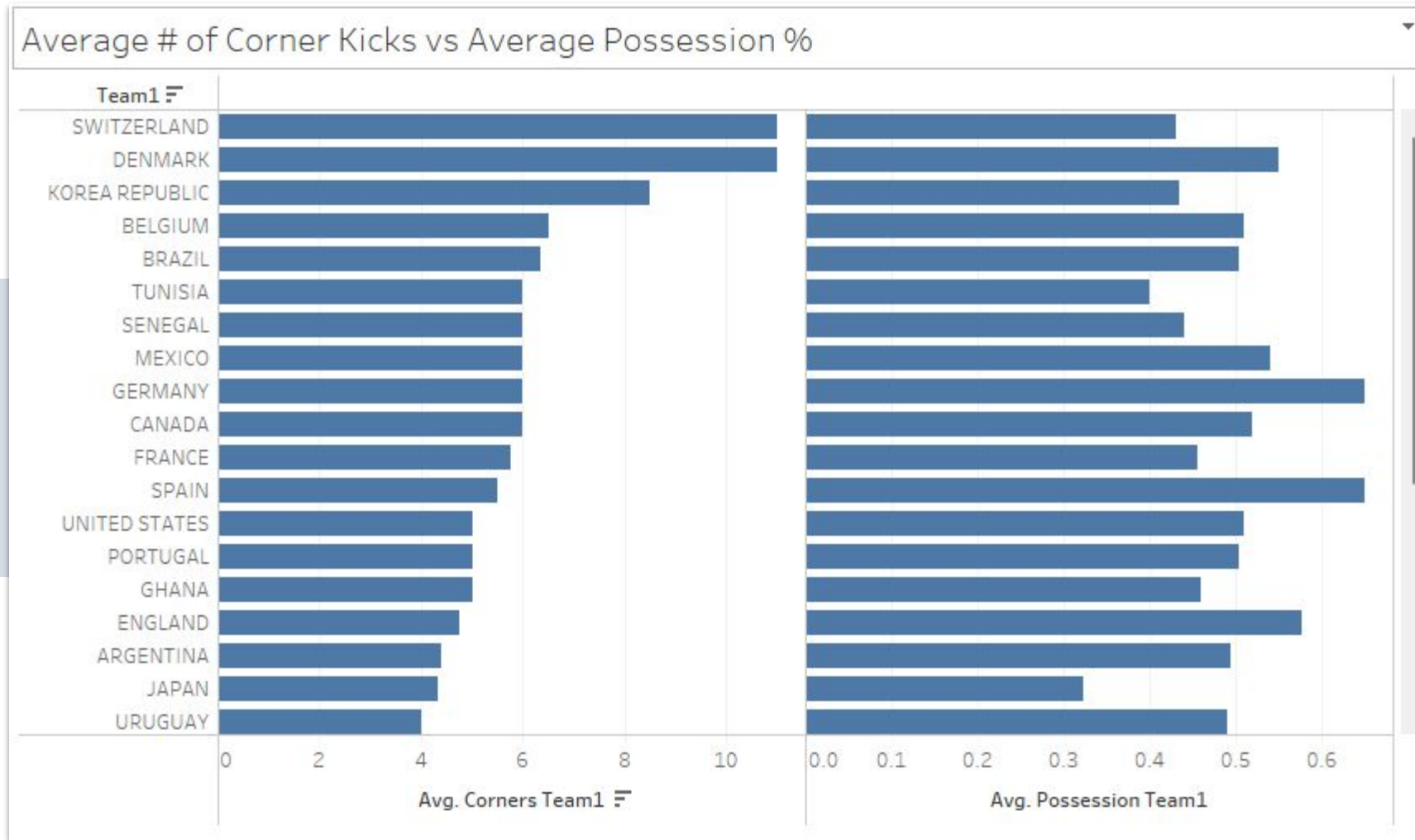
# Does possession percentage change over the course of the tournament?



## Observations:

- Team 1 possession percentages are slightly higher for Group C and Group D
- It seems to be average over QFinal, Semis and Finals

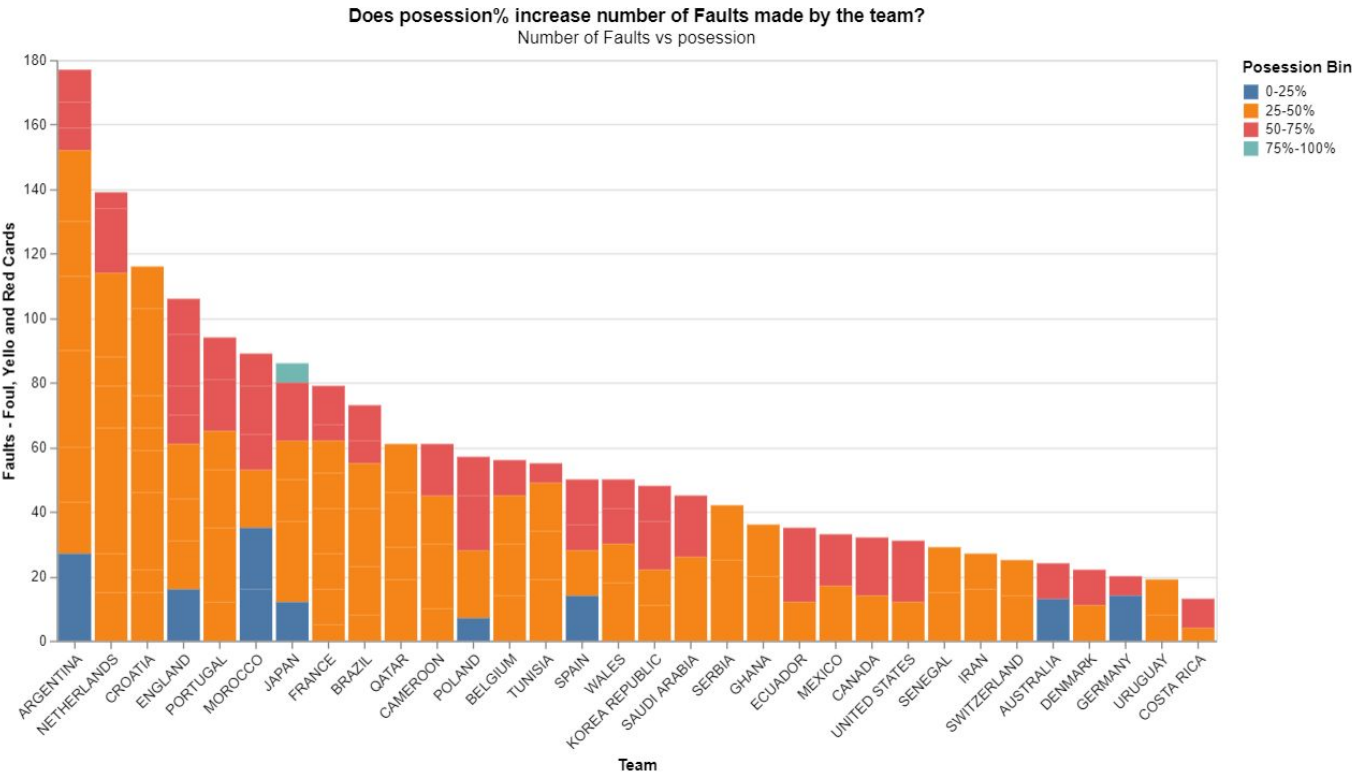
# Does possession result in more corner kicks?



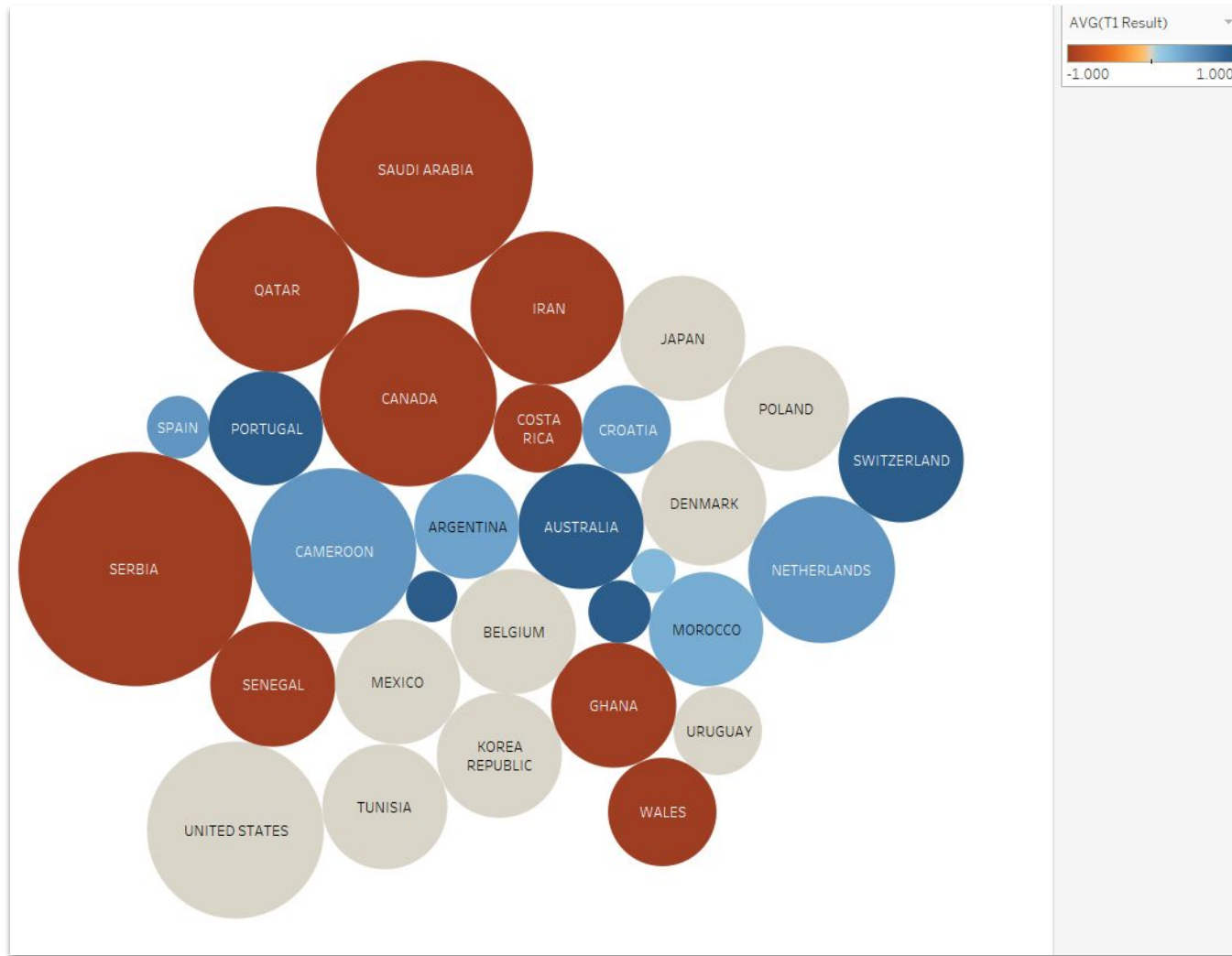
## Observations:

- It doesn't seem there's an obvious relationship between possession percentage and the number of corners kicked

# Does increased possession results in increased faults?



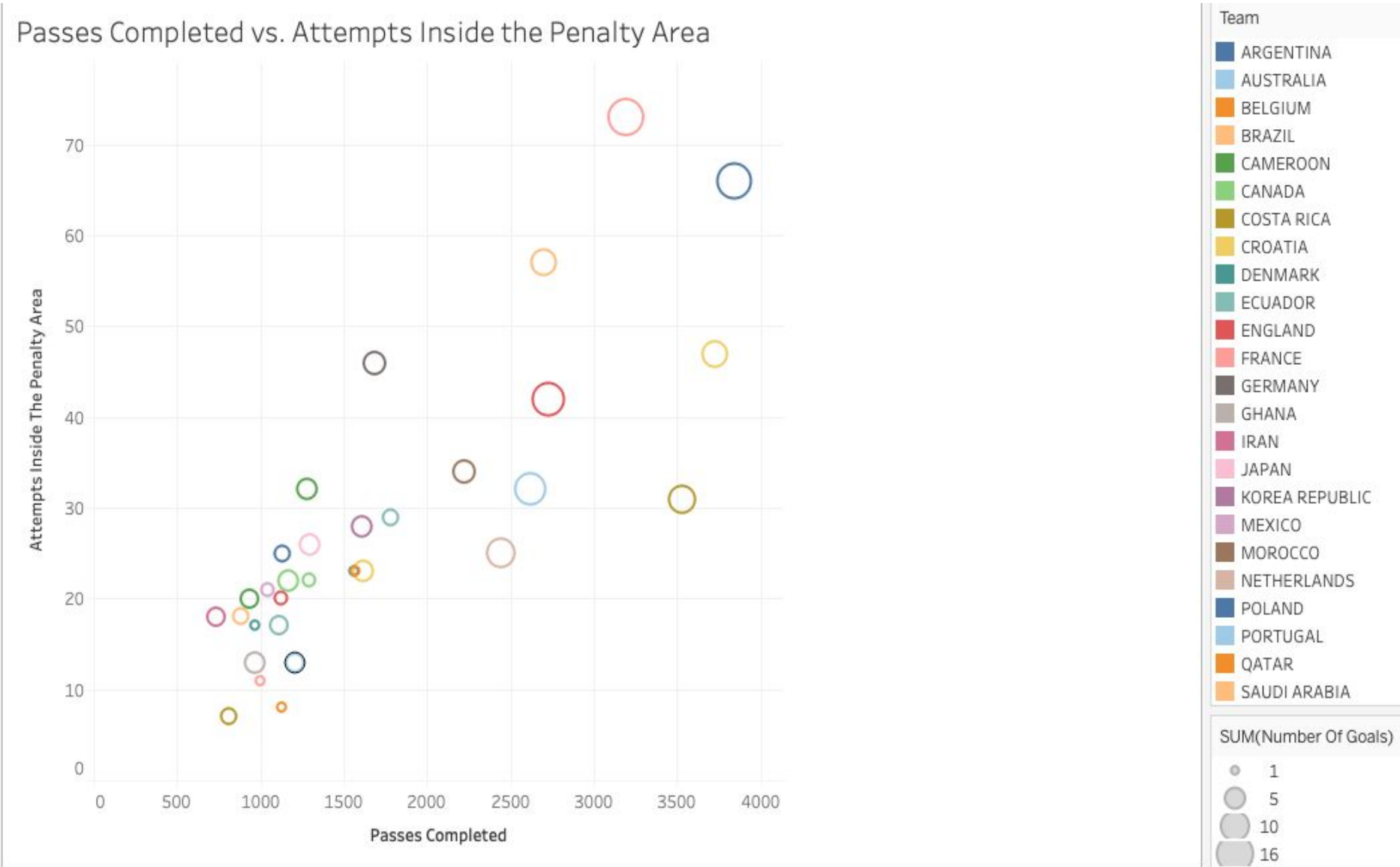
# Does yellow cards affect match outcome significantly?



## Observations:

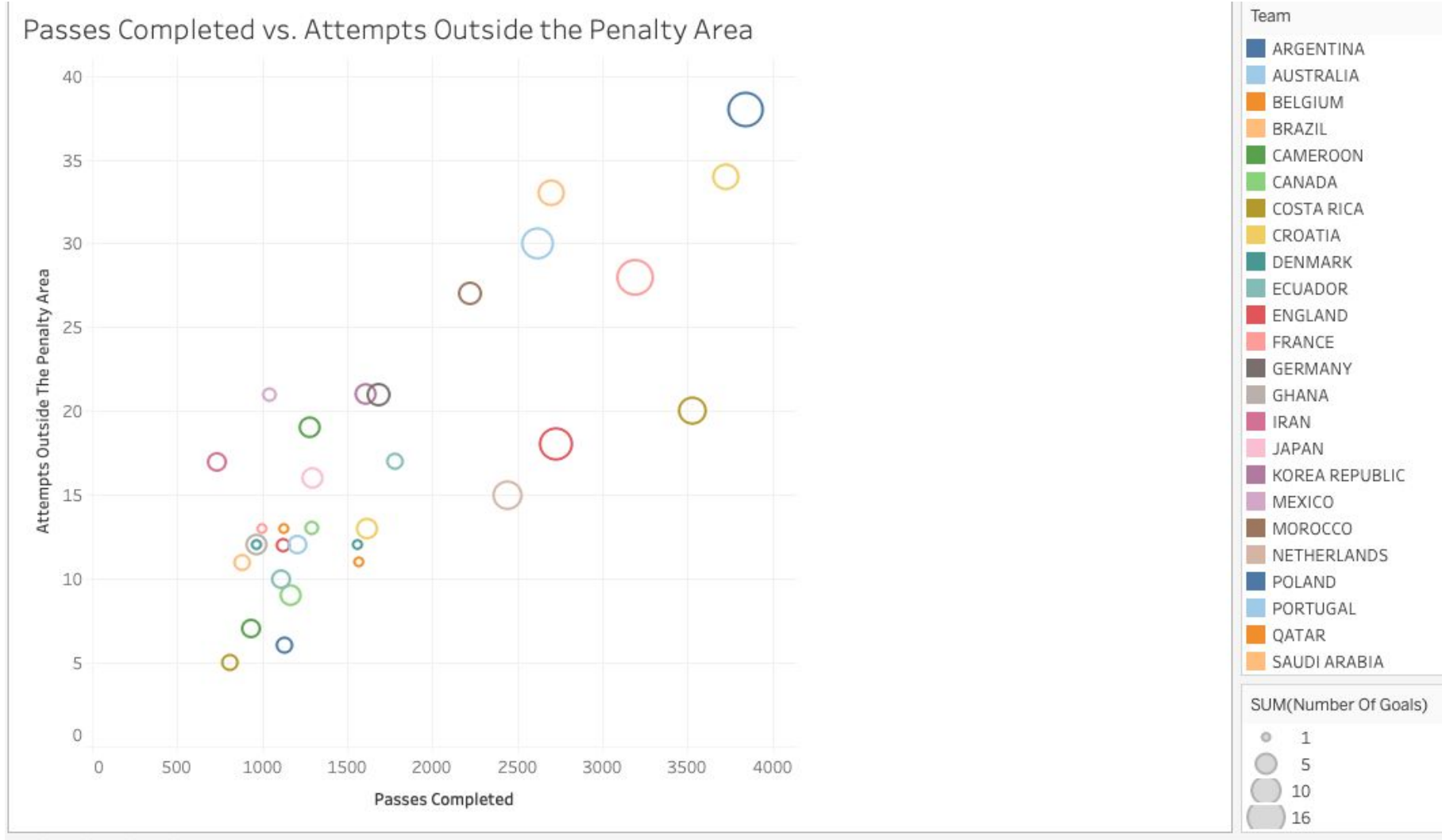
- The number of yellow cards have a negative affect on match outcome

# Does increased passes completed increase attempts **inside** penalty area?



- **Observations:**
  - Sample Size: 128 team's statistics in matches
  - Positive correlation with number of passes completed and attempts inside the penalty area and number of goals scored

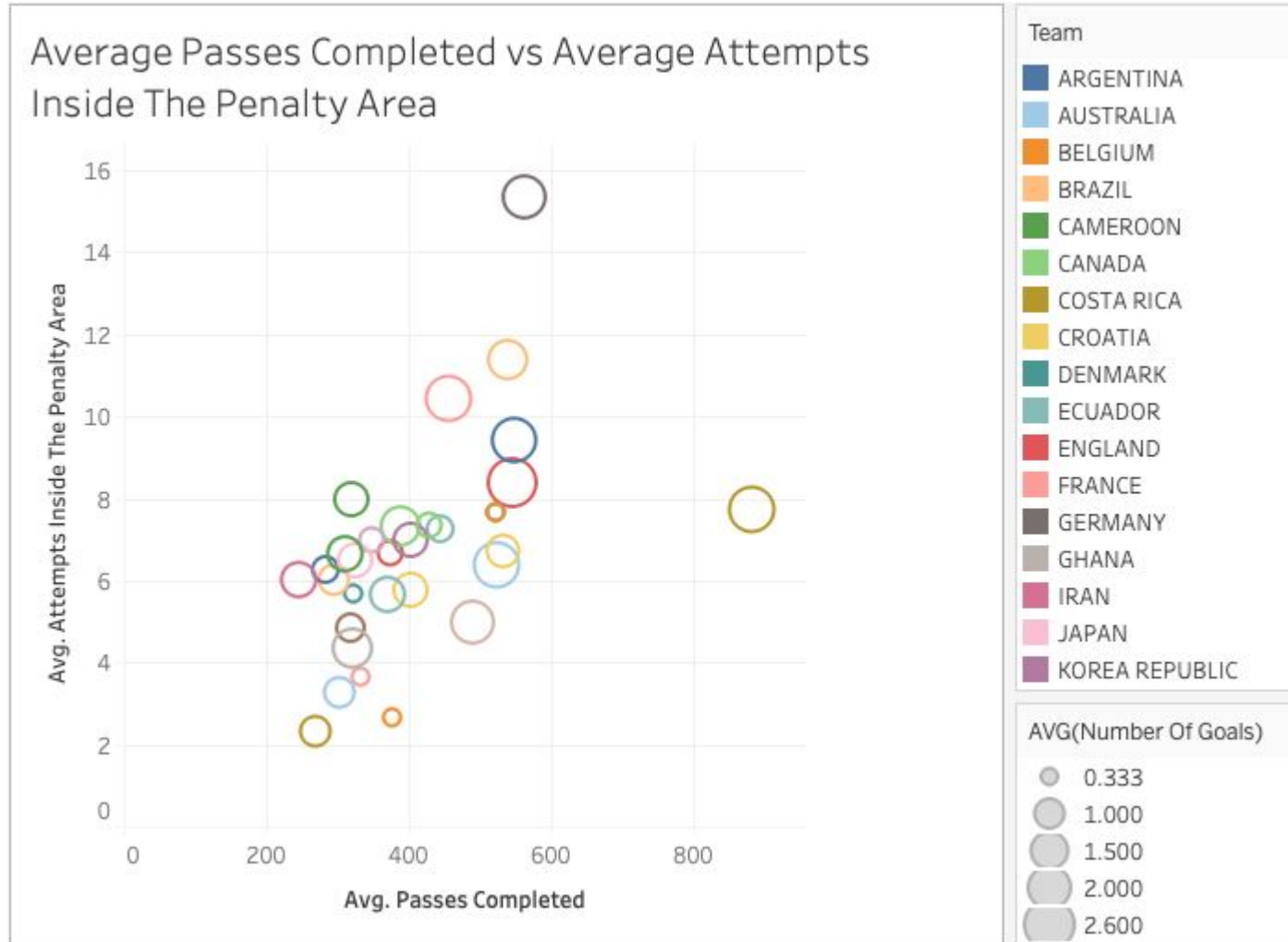
# Does increased passes completed increase attempts **outside** penalty area?



- **Observations:**
  - Sample Size: 128 team's statistics in matches
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# Taking the Average

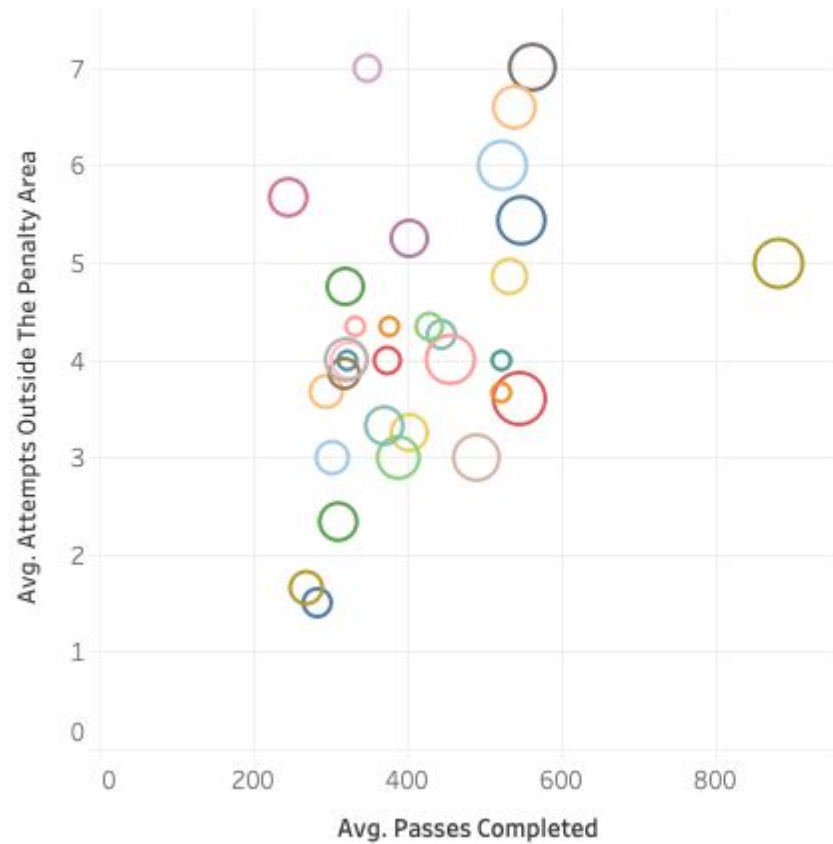


- **Observations:**
  - Sample Size: 128 team's statistics in matches
  - Positive correlation with average number of passes completed and attempts inside the penalty area and average number of goals scored



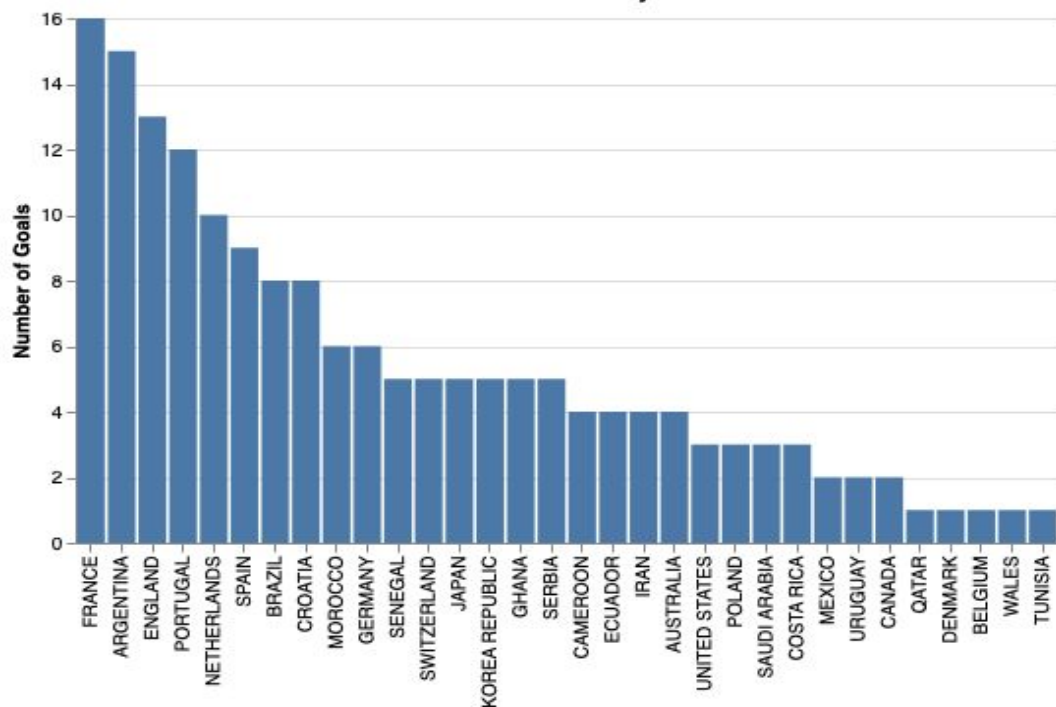
# Taking the Average

Average Passes Completed vs Average Attempts Outside The Penalty Area

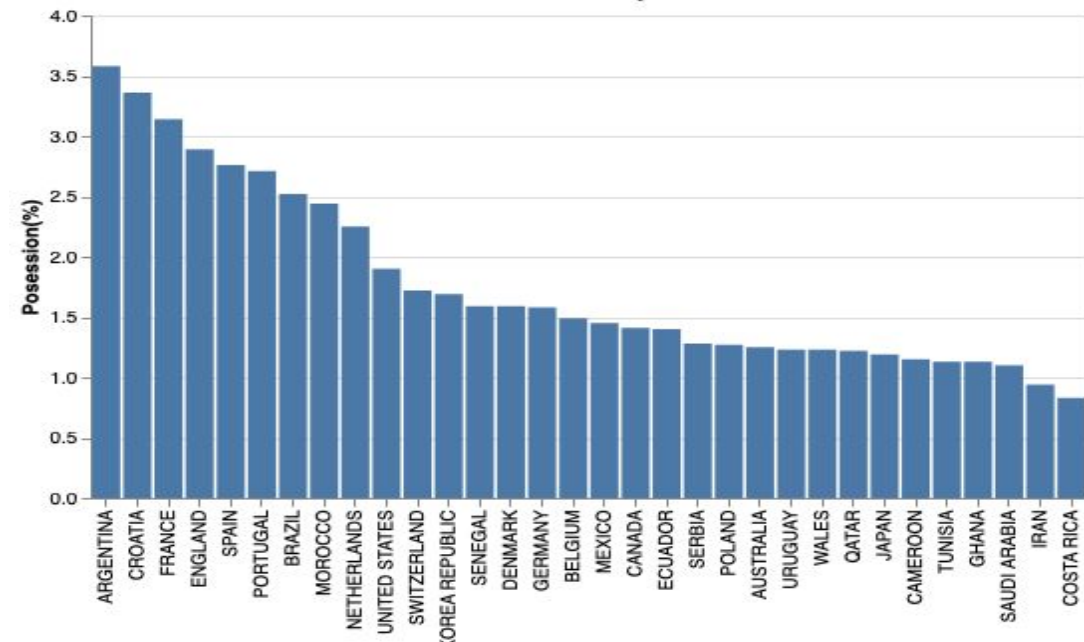


- **Observations:**
  - Sample Size: 128 team's statistics in matches
  - Positive correlation with average number of passes completed and attempts outside the penalty area and average number of goals scored

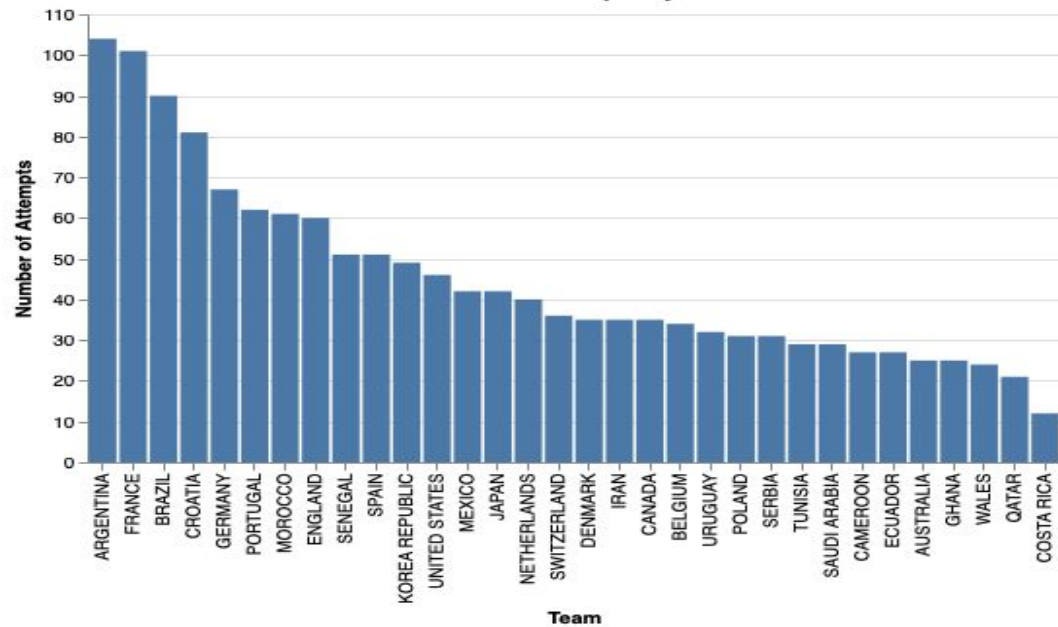
Number of Goals by Team



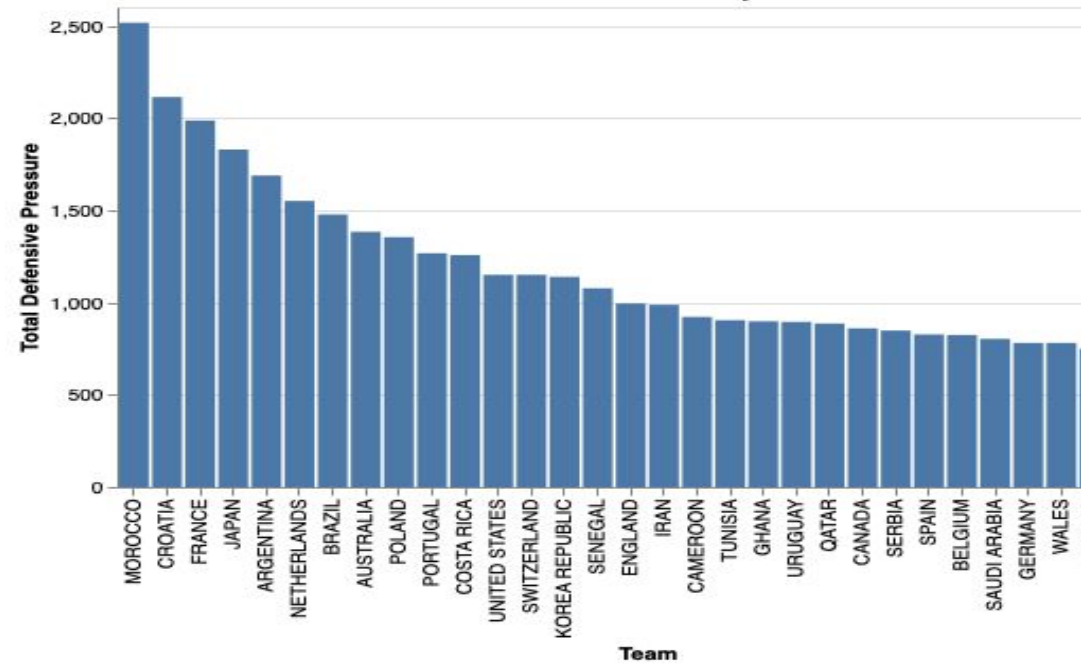
Possession % by Team



Number of Attempts by Team

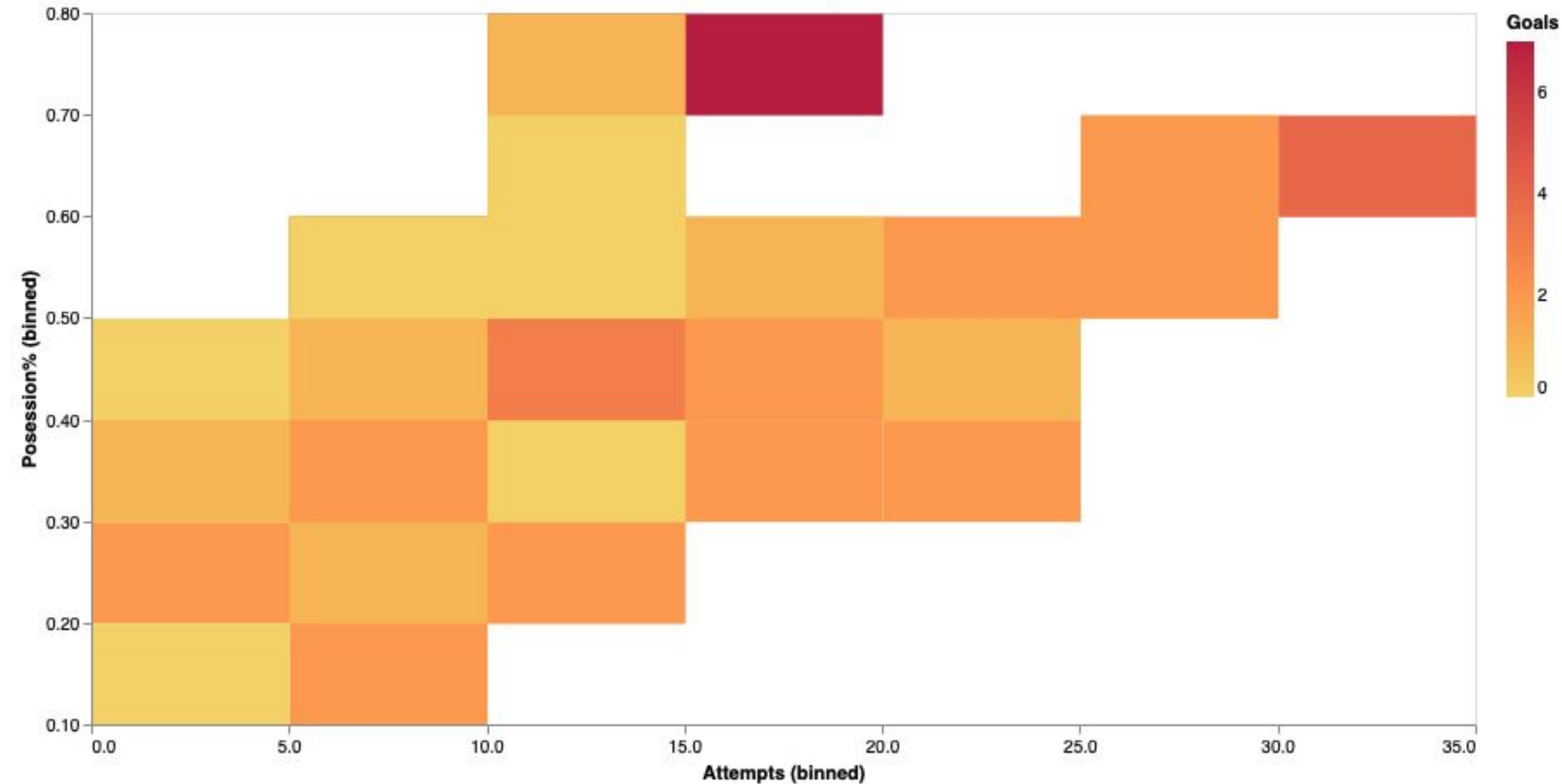


Defensive Pressure by Team



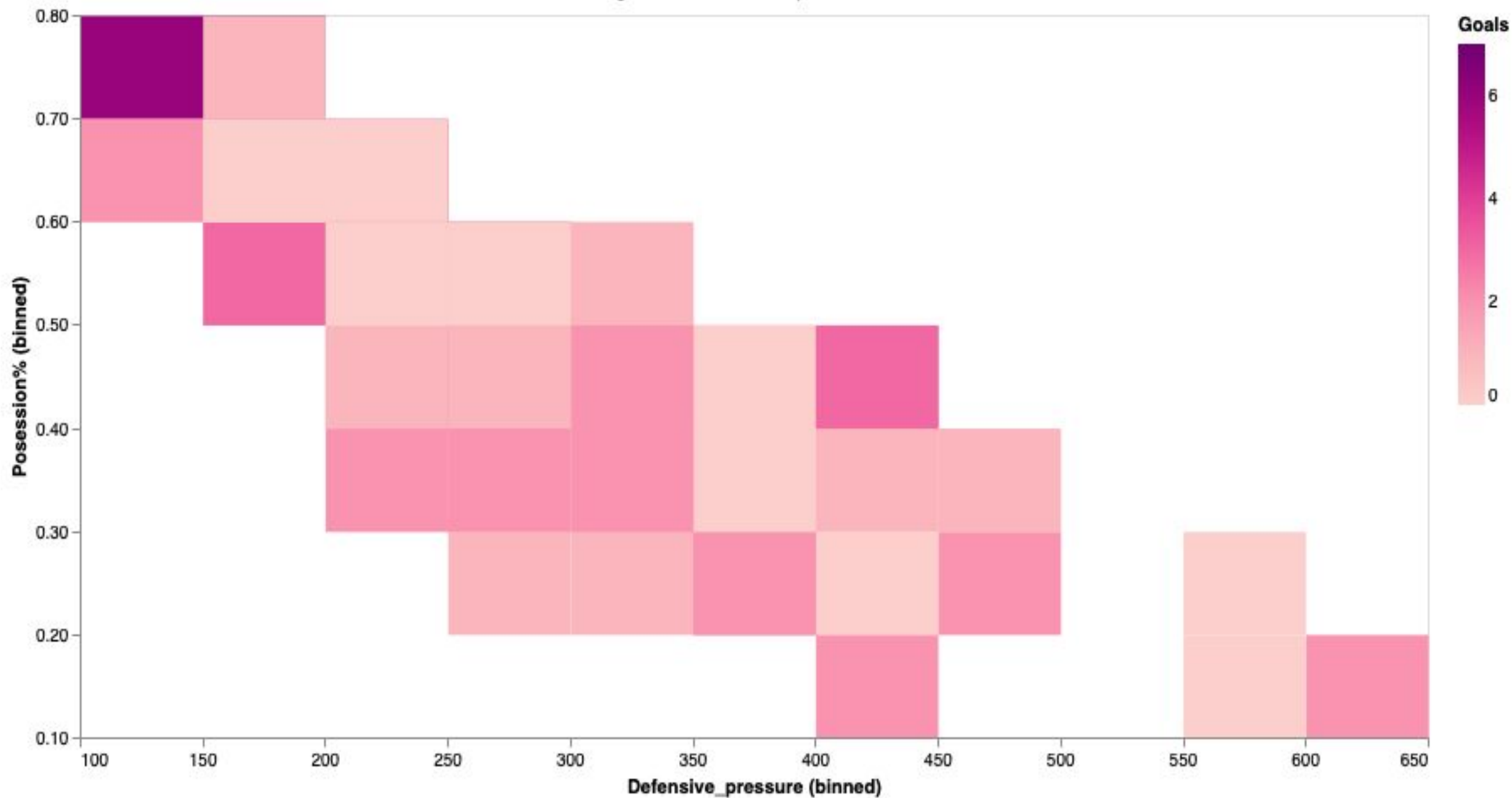
# Does Possession and Attempts Increase Number of Goals Scored in a Match?

Number of Goals vs Attempts + Possession



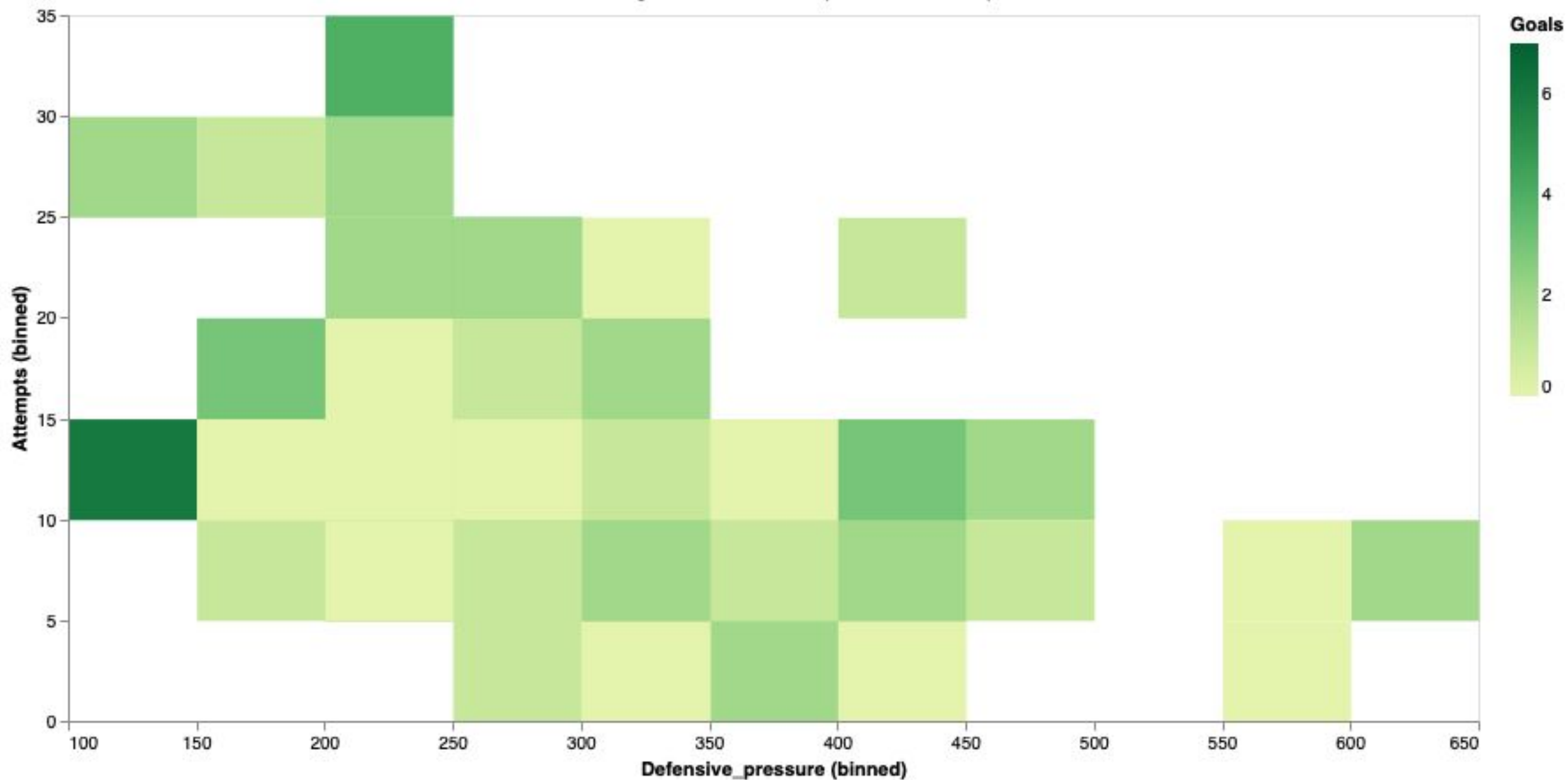
# Does Possession and Defensive\_pressure increase number of goals scored in a Match?

Number of goals vs Defensive\_pressure + Possession



# Does Attempts and Defensive\_pressure increase number of goals scored in a Match?

Number of goals vs Defensive\_pressure + Attempts



# Conclusion

- Made Tableau dashboards that fall under team analytics and player analytics
- Developed insights that can improve team's performance in matches and evaluate the players' effectiveness
- Include previous Fifa World Cup data in the future