

# FC Barcelona Dominating the Pitch

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## Introduction

FC Barcelona are historically one of the most dominant clubs in the history of club football. Led by manager Ernesto Valverde, Barcelona had a solid 2018-19 season. They comfortably finished at the top of the table in La Liga, totaling 87 points. They reached the final of the Copa Del Rey, Spain’s domestic football tournament. In international competition, they reached the semifinals of the UEFA Champions League.

In this project, we will be analyzing play-by-play data from 10 FC Barcelona matches from the 2018-19 season. By examining positional, tactical, and scoring opportunity data, we aim to explore what made this Barcelona team so dominant.

## Data

Our data come from the StatsBomb Data API. We collected data from 10 FC Barcelona matches in the 2018/19 season. Our data includes 5 wins and 5 non-wins. The dataset includes tracking information for each event that occurs during a football match. The start and end location of passes, shots, carries, and duels are provided with coordinates. Each row is timestamped and the data are sequentially ordered to allow for analysis of something like a buildup to a goal-scoring opportunity.

## Passing

Using the data from the 10 FC Barcelona matches, we created a heat map of where passes are received for both FC Barcelona and for their opponent. Visualizing where teams are frequently attempting passes can provide context as to if a team is possessing the ball in the attacking end (more likely to score) or in the defending end (less likely to score). We would expect that a high-performing team like FC Barcelona to complete a majority of passes in their attacking end, while also limiting their opponent’s passes in their defensive end.

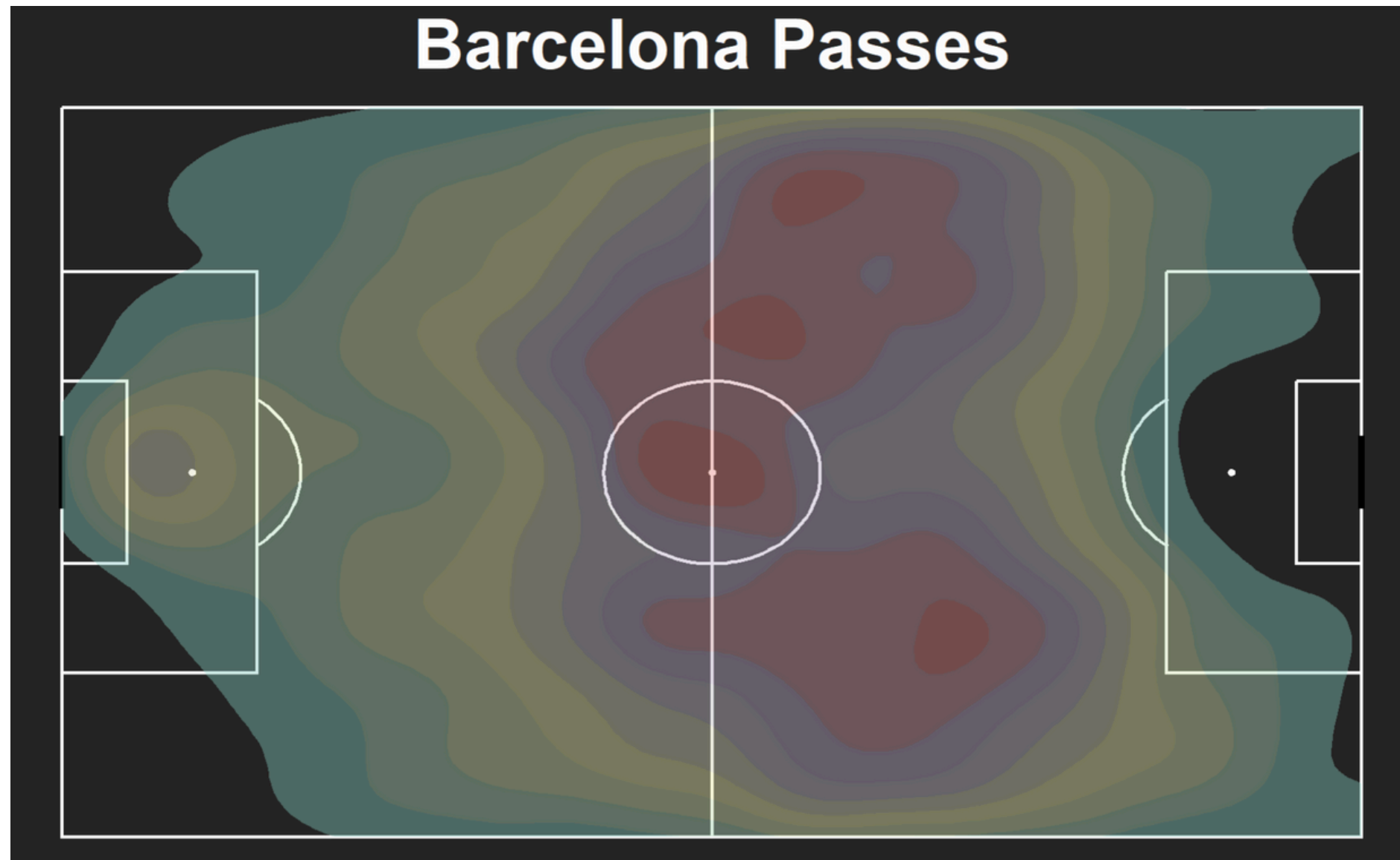


Fig. 1: FC Barcelona Passing Chart

The graph of FC Barcelona’s passes shows a high frequency of passes on the attacking end of the pitch. We can see that it was very difficult for opponents to keep Barcelona outside of the attacking end. Teams defending Barcelona’s attack have a hard time forcing them to the edge of the pitch and causing desperation crosses. Instead, Barcelona are able to possess the ball towards the middle of the pitch on offense, which makes it easier to create a goal-scoring opportunity.

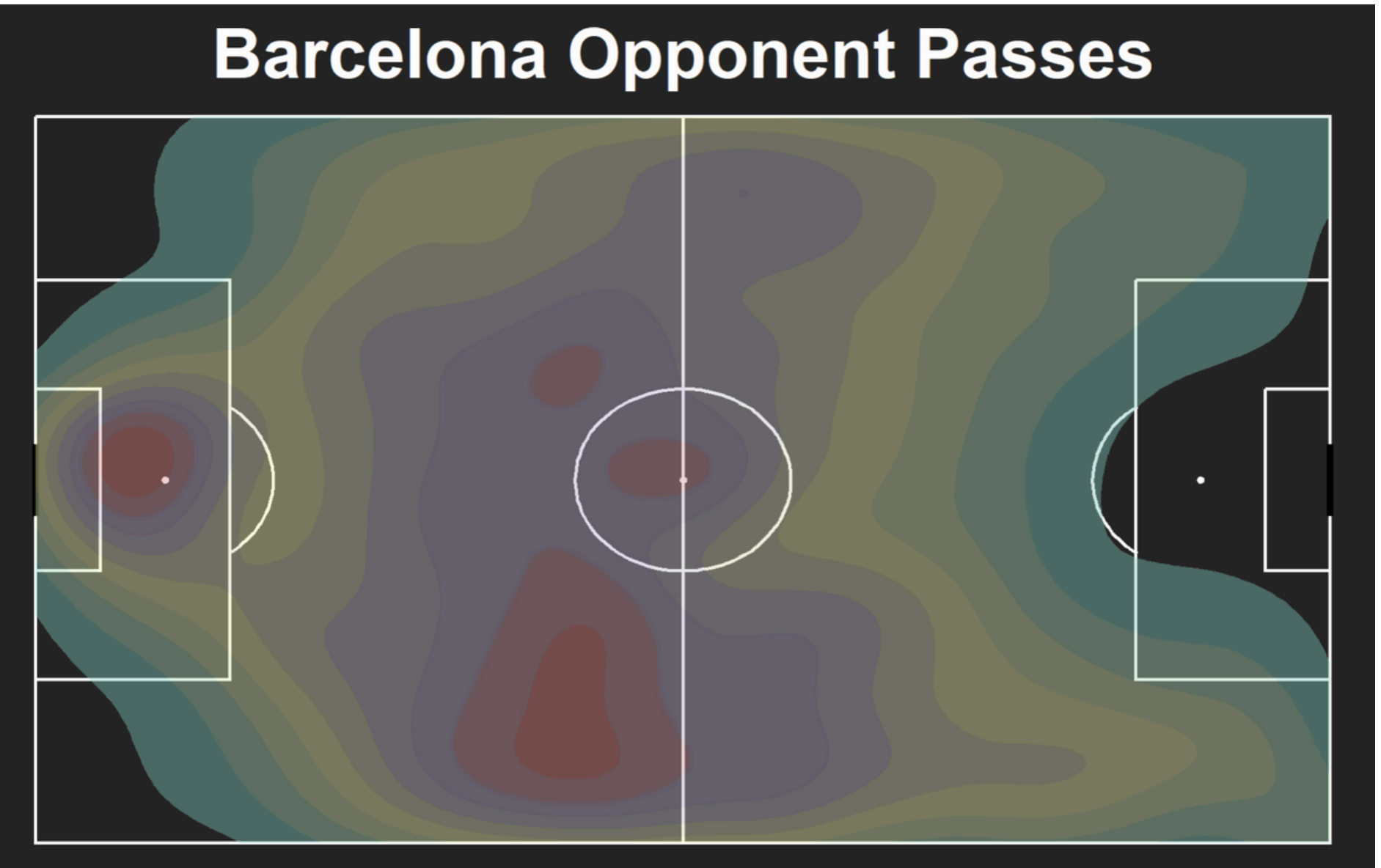


Fig. 2: FC Barcelona Opponent Passing Chart

An analysis of the opposing teams’ passing charts also adds context as to why Barcelona were so successful at the time. A majority of the opponent’s passes were completed in their defending end, so it shows that teams struggled to advance the ball into their attacking end against Barcelona. Additionally, many of the opposing team’s passes were in their own goal area, which suggests that Barcelona’s attacking players were successful in pressuring the opponent’s defenders.

## Shots

We took all of the shots attempted by FC Barcelona in the 10 matches we analyzed and made 2 graphs showing where the Barcelona player shot from, if they scored a goal, and the expected goal (xG) value of the shot attempt. The first graph shows their shots in games they won, and the second shows shots in games they did not win. The xG value is a metric that comes from a historical model that measures the probability that a shot will result in a goal.

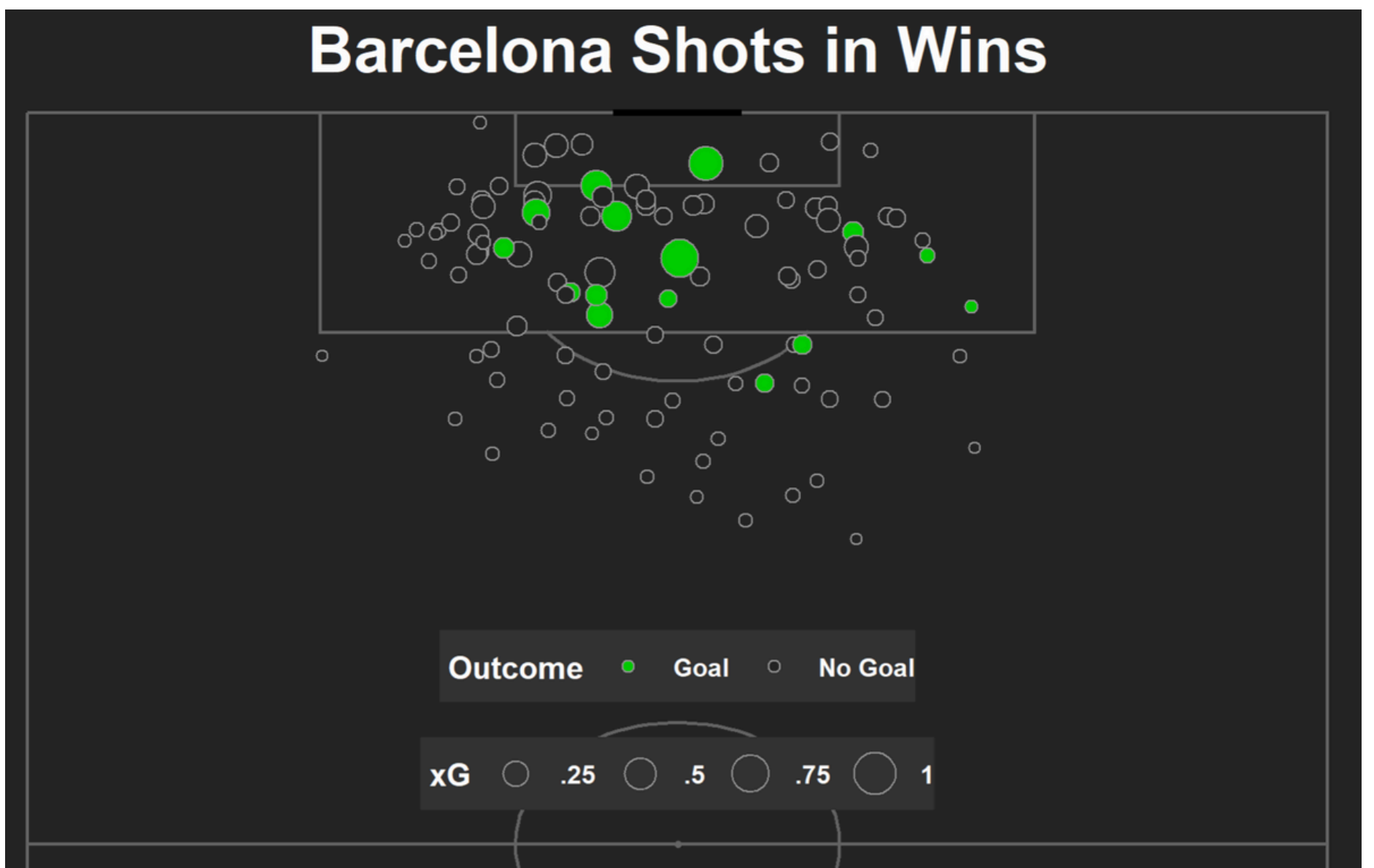


Fig. 3: FC Barcelona Shots in Wins

Based on this chart, we can see that Barcelona attempts a very high number of shots to begin with, but they also convert their goal-scoring opportunities at a high rate. We can see that a majority of their goals come from shots taken inside the box, with a few goals coming from outside the box. Noticeably, shots closer to the goal have a higher xG.

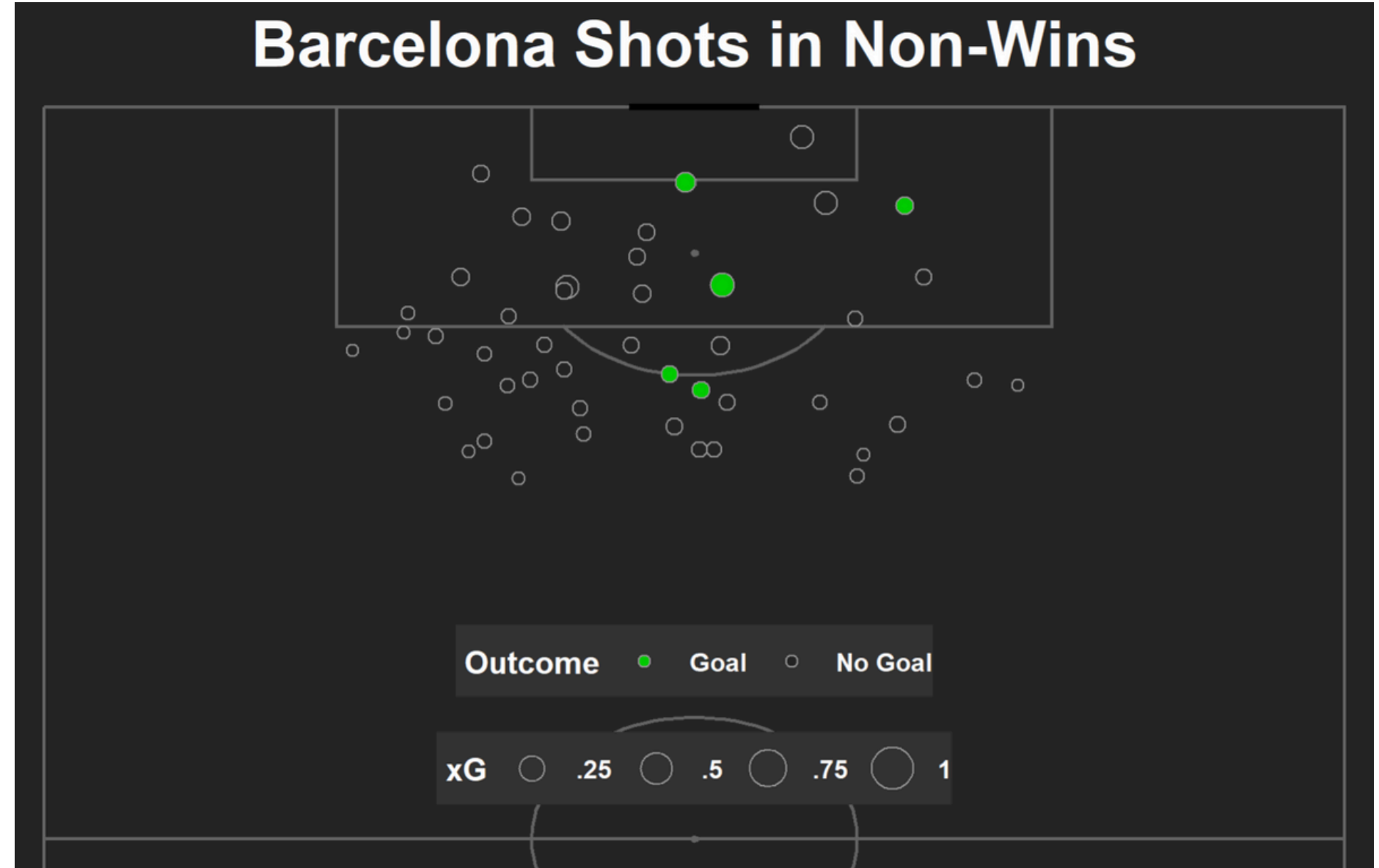


Fig. 4: FC Barcelona Shots in Non-Wins

As expected, Barcelona score significantly less goals in non-wins, but we can also see that they struggle to create scoring opportunities. The size of each point indicates the xG, and we can see that the points are significantly smaller across the board in non-wins. Another key observation is that there are very few shots attempted on the right side of the goal, where Lionel Messi would be playing opposite to. So, even in non-wins, Messi contributes to a large proportion of Barcelona’s scoring opportunities.

## Messi’s Impact on Scoring

Our next area of analysis takes a deeper look into where passes occurred and ended which lead to shots. We wanted to take a deeper look at where Lionel Messi passed the ball compared to the rest of the team as he won the coveted Balon d’Or for 2019. From his map, we are able to see that he favored the left side of the field for where he made these decisive passes. You are able to see that many of these ended in dangerous areas within the box, likely going to the deadly striker in Luis Suarez.

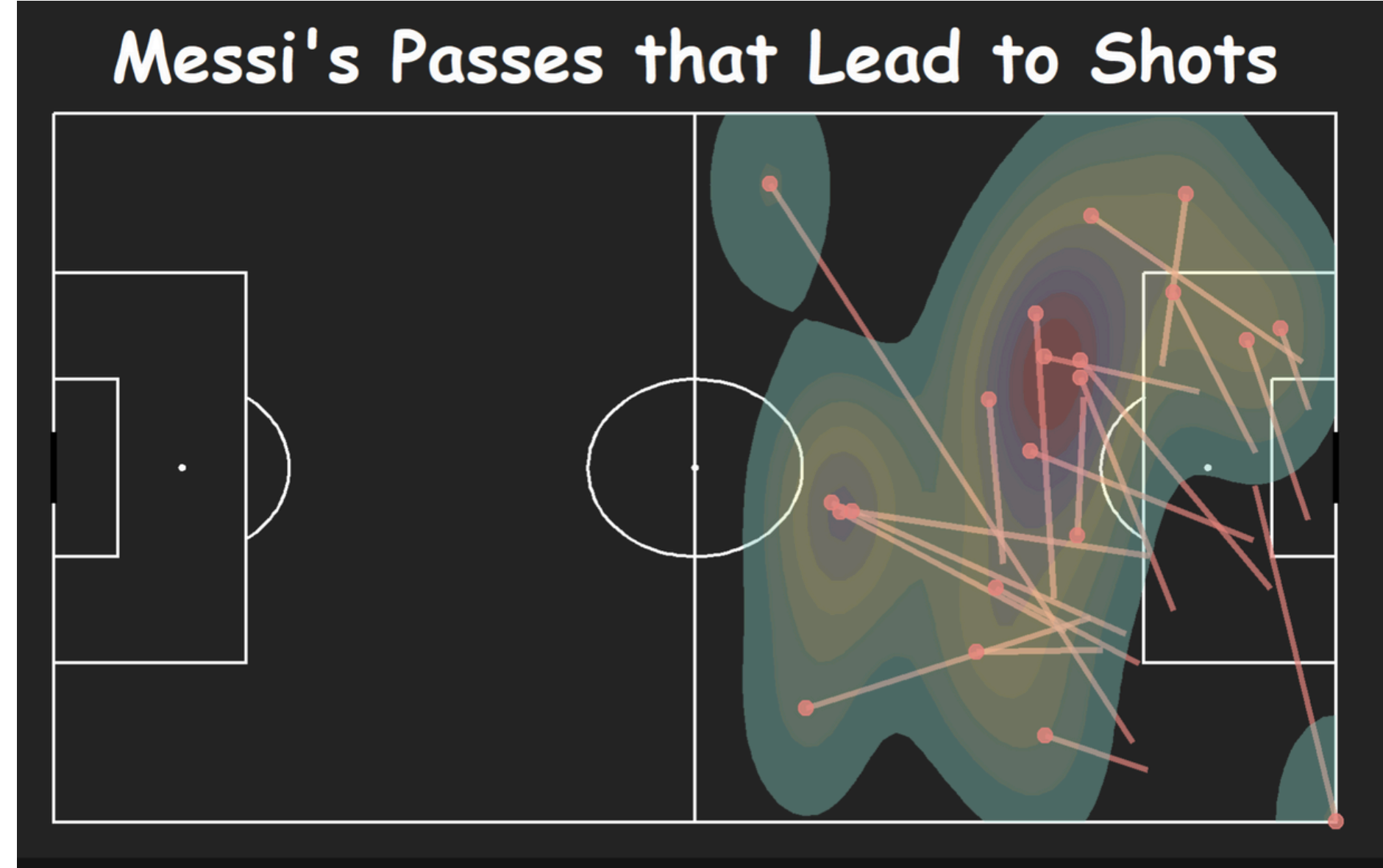


Fig 5: Messi’s Passes that Lead to Shots

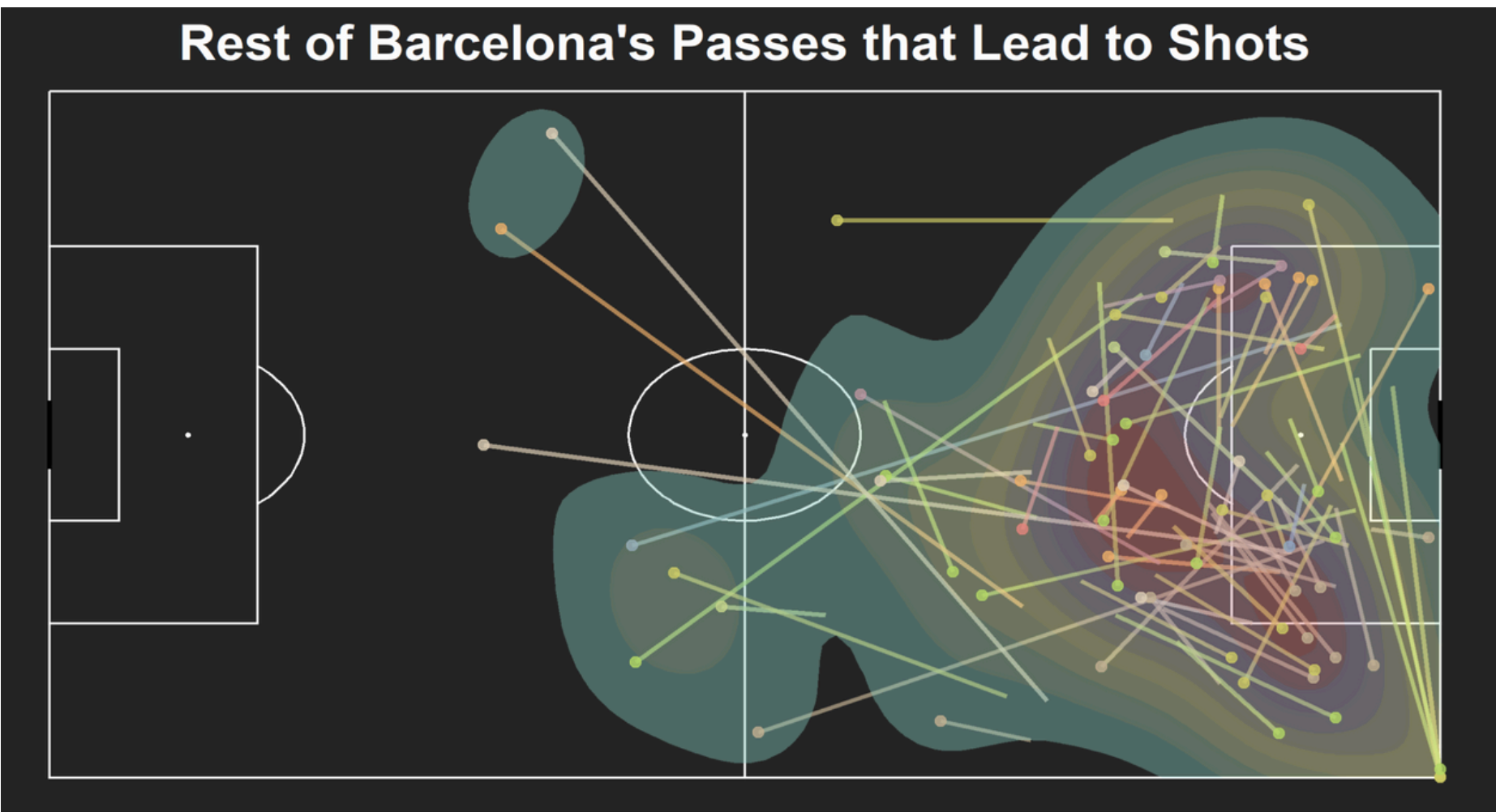


Fig 6: Rest of Barcelona’s Passes that Lead to Shots

One interesting thing we were able to notice from this was that Messi is creating such a high volume of passes from the left side of the field in the most dangerous area, just outside of the 18 yard box. By comparing side we can see that passes tend to be produced from less dangerous areas when produced from the right side of the field than the left.

## Conclusions

Based on our analysis of the data from 10 FC Barcelona matches, we can see that Barcelona’s passing shows a much more successful offensive attack compared to their opponents. Also, we see that in non-wins Barcelona struggled to create quality scoring opportunities. We also noticed that passes from Messi coming from the left side consistently ended up in dangerous areas which lead to good shots from teammates.

## Next Steps

We would like to continue analysis on Barcelona’s success by looking at individual players and their events on the pitch, specifically Lionel Messi and Luis Suarez. We can use statistics like expected goals and assists to quantify each individual players’ impact on goal scoring opportunities. We can also analyze the movement and shot patterns of opposing teams, and see how they compare to Barcelona’s offensive and defensive tactics.

