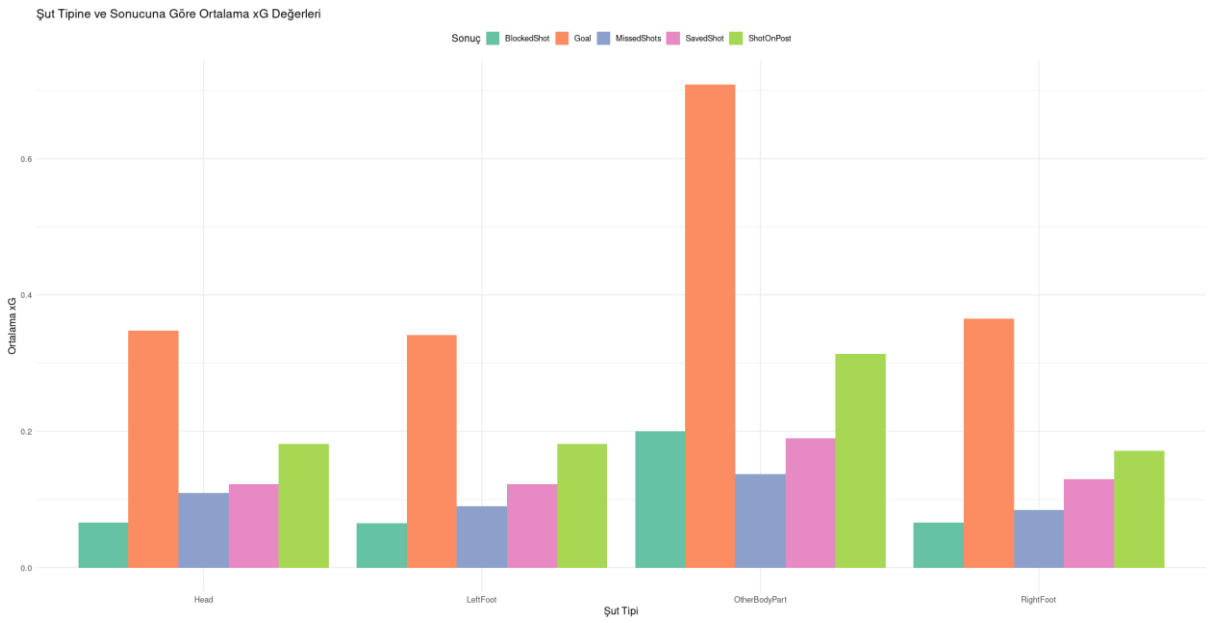
1) Do shots taken with the left foot produce a higher average xG compared to those taken with the right foot?

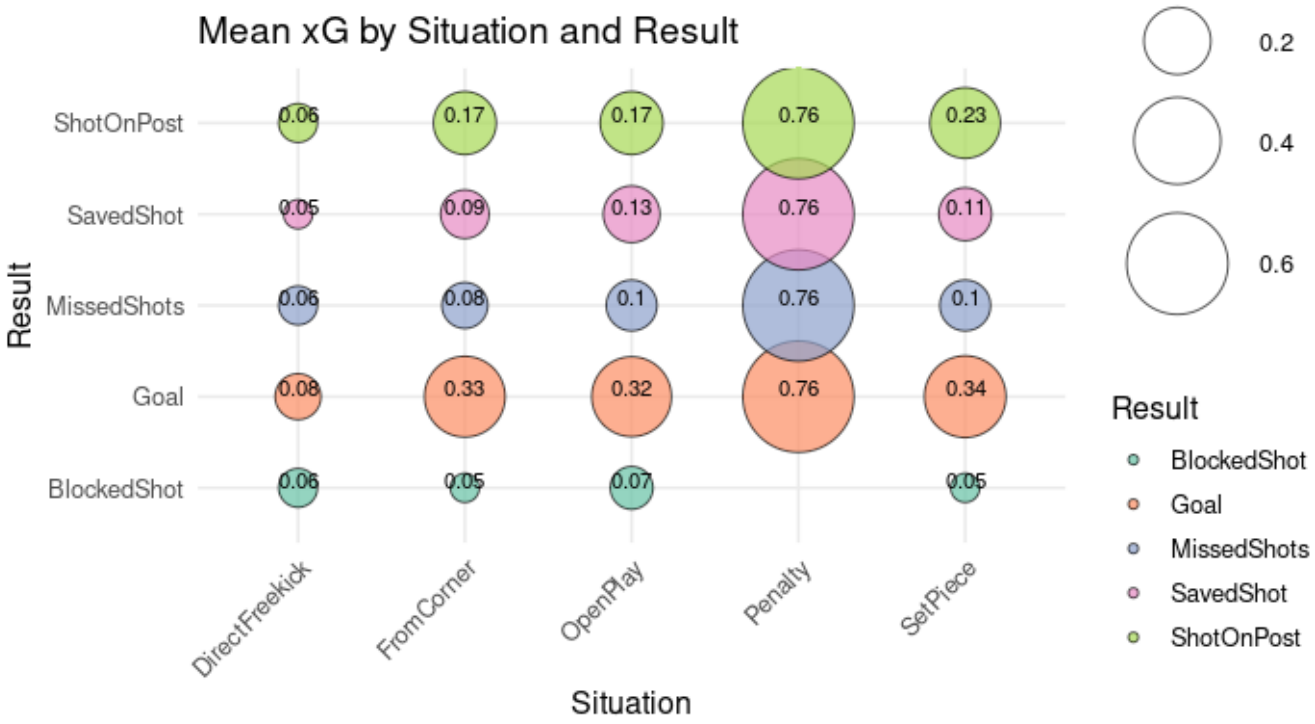


Higher xG for Headers:
Headers have a higher average xG compared to left-footed shots. This might be because headers often happen during set pieces (like corners or free kicks) or close-range crosses, where defenders are less organized, and goalkeepers have less time to react.

Left-Footed Shots:
Left-footed shots generally produce lower xG. Since most players are right-foot dominant, left-footed shots are often taken in more challenging situations or from unfavorable angles.

Other Body Parts:
Interestingly, shots taken with other body parts (excluding headers) show a significantly higher average xG—around 0.7. This suggests these shots might occur in exceptional situations, such as very close-range chances or unusual defensive errors.

1) How does the average xG vary across different shot situations?



The bubble chart displays the mean xG (expected goals) for various shot situations (x-axis) and results (y-axis). The size of the bubbles reflects the mean xG value, while the colors represent different shot results.

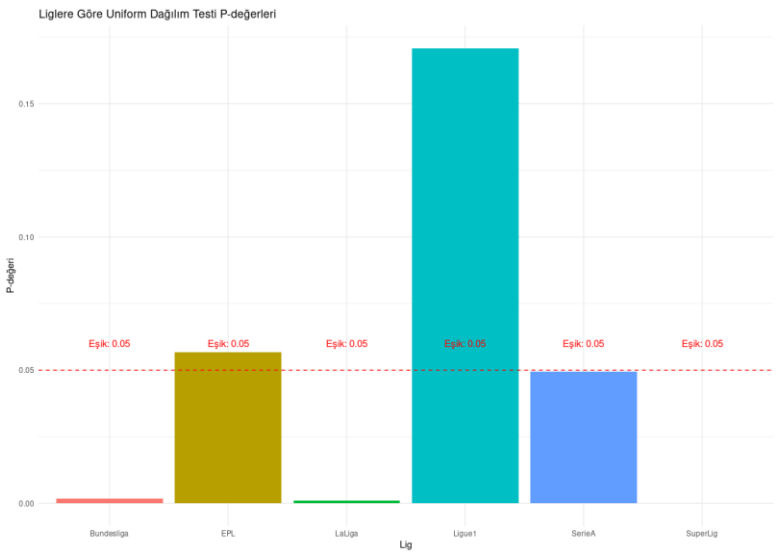
1. **Penalty Situations:**
    - Penalty shots have the highest mean xG (0.76) across all results, including goals, missed shots, and saved shots. This confirms that penalties are the most likely situations to produce high-quality scoring opportunities.
2. **Set Piece (Shot on Post):**
    - Shots that hit the post during set-piece situations exhibit a significantly higher mean xG (0.23) compared to other results within set-piece situations. This suggests that such attempts are often high-quality chances that narrowly miss being converted into goals.
3. **Open Play and Set Piece (Goals):**
    - Goals scored from open play and set-piece situations have relatively high mean xG values (around 0.32–0.34), indicating their effectiveness in generating scoring chances.
4. **Direct Free Kick and From Corner:**

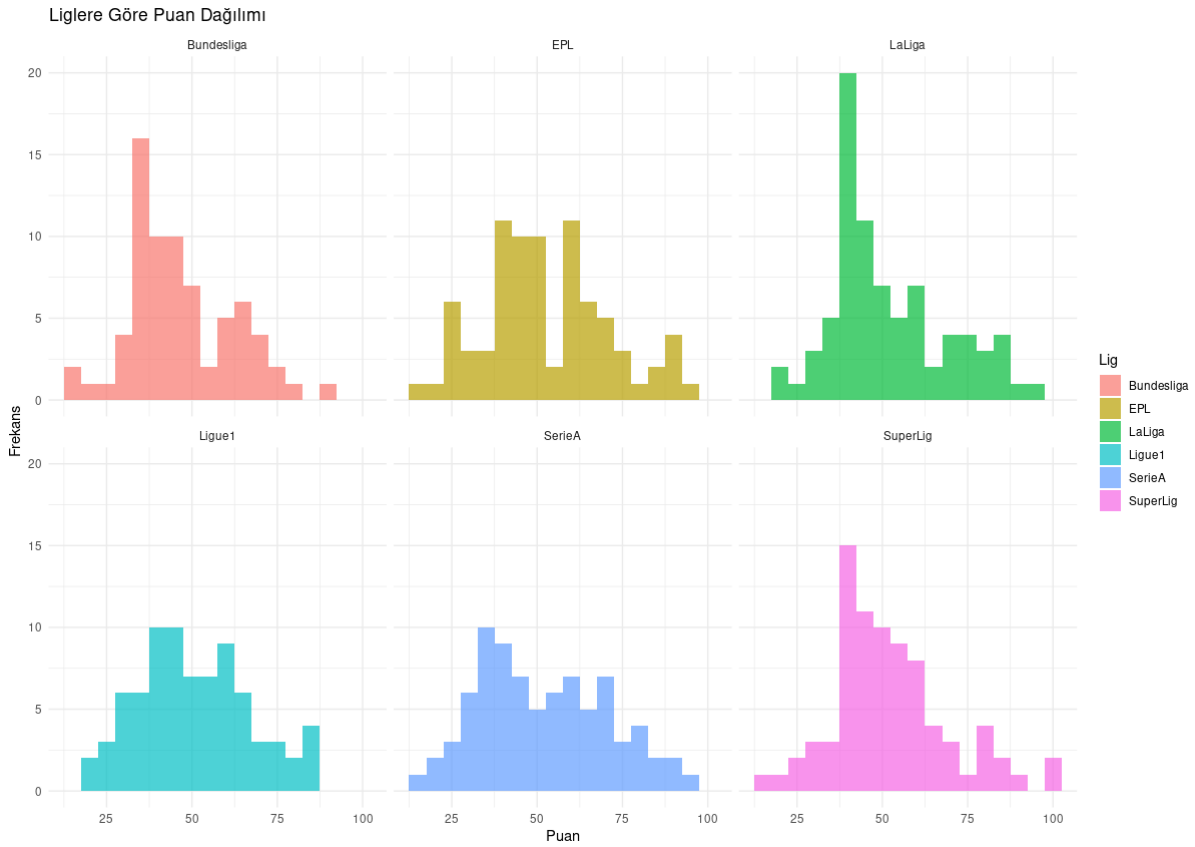
- These situations typically show lower mean xG values across all results. For instance, blocked and missed shots in these categories generally have mean xG values below 0.1, reflecting their lower likelihood of resulting in goals.

5. **Saved Shots:**
    - Saved shots consistently exhibit moderate mean xG values (0.1–0.17) across most situations, highlighting the quality of attempts that challenge the goalkeeper but fail to result in a goal.
6. **Blocked Shots:**
    - Blocked shots have the lowest mean xG values (<0.1) across all situations, as these are interrupted attempts that rarely pose a serious scoring threat.

Overall, the chart highlights the prominence of penalty situations in producing high-quality chances, the notable xG of shots hitting the post during set pieces, and the generally lower xG values for indirect scenarios such as direct free kicks and corner plays.

2) Is the EPL (English Premier League) a more competitive league compared to others?





1. **Bundesliga: p-value = 0.00167**
    - The p-value is significantly below the 0.05 threshold, indicating that the points distribution in the Bundesliga is not uniform. This suggests a less competitive environment, as certain teams tend to score much higher than others.
2. **EPL (English Premier League): p-value = 0.0568**
    - The p-value for the EPL is slightly above the 0.05 threshold. While this suggests that the points distribution may be close to uniform, it does not provide strong evidence against uniformity. This indicates that the EPL is relatively competitive, with a reasonably balanced distribution of points among teams.
3. **LaLiga: p-value = 0.00103**
    - Similar to the Bundesliga, the LaLiga p-value is significantly below 0.05. This indicates a non-uniform distribution of points, implying a potential dominance of a few top teams over others, which decreases overall competitiveness.
4. **Ligue 1: p-value = 0.171**
    - The p-value for Ligue 1 is well above 0.05, suggesting that the points distribution is uniform. This indicates a higher level of competitiveness, as teams are more evenly matched in terms of points.

5. **Serie A: p-value = 0.0493**
    - The Serie A p-value is just under the 0.05 threshold, suggesting that the points distribution is marginally non-uniform. This implies that while there is some competitiveness, there are still teams that dominate the points standings.
6. **SuperLig: p-value = 0.0000595**
    - With a p-value far below 0.05, the SuperLig has a non-uniform points distribution. This indicates a significant imbalance in competitiveness, with some teams likely scoring much higher than others.

Conclusion

From these results, we can conclude that the EPL shows signs of competitiveness, being close to a uniform distribution. However, it is not as uniformly competitive as Ligue 1. In contrast, leagues like Bundesliga and LaLiga demonstrate a significant disparity in team performance, indicating a lack of competitiveness. The SuperLig, in particular, shows extreme non-uniformity, suggesting a dominance of specific teams.

This analysis highlights that while the EPL is competitive, it still experiences some dominance by certain teams, similar to other major leagues.