Analysis of 2023-24 NBA Player Data

With the 2023-24 NBA Conference Finals in full swing, I decided to dive into the player and team data for this season. These playoffs have been nothing short of electrifying and promise even more drama as we edge closer to crowning the season's champion. My favorite team, the Dallas Mavericks, are making a strong push, fueled by the stellar performances of their dynamic duo, Luka Dončić and Kyrie Irving.

As the regular season awards have been announced, I became curious about potential discrepancies and whether any deserving players were snubbed. While my primary focus is on the Mavericks, I keep a keen eye on the broader NBA landscape, aware of the standout teams and players. Working on this project was a joy, especially with the data visualizations that illuminated why certain teams and players dominate the league.

Key Take Aways:

- Luka Dončić and Nikola Jokić clearly dominate the offensive side of the game.

- Luka Dončić may be underrated as a defensive player but that side of the game is clearly dominated by centers with Victor Wembanyama being the clear top flight player here.
- PG's and SG's are the clear favorites in 3 PT% but a few teams have Centers that shoot the 3 well.
- Most teams have at least two players that dominate the scoring on the team.
- PG's dominate assists per team and position but there are outliers such as Nikola Jokić for Centers and Pascal Siakam for PF's.
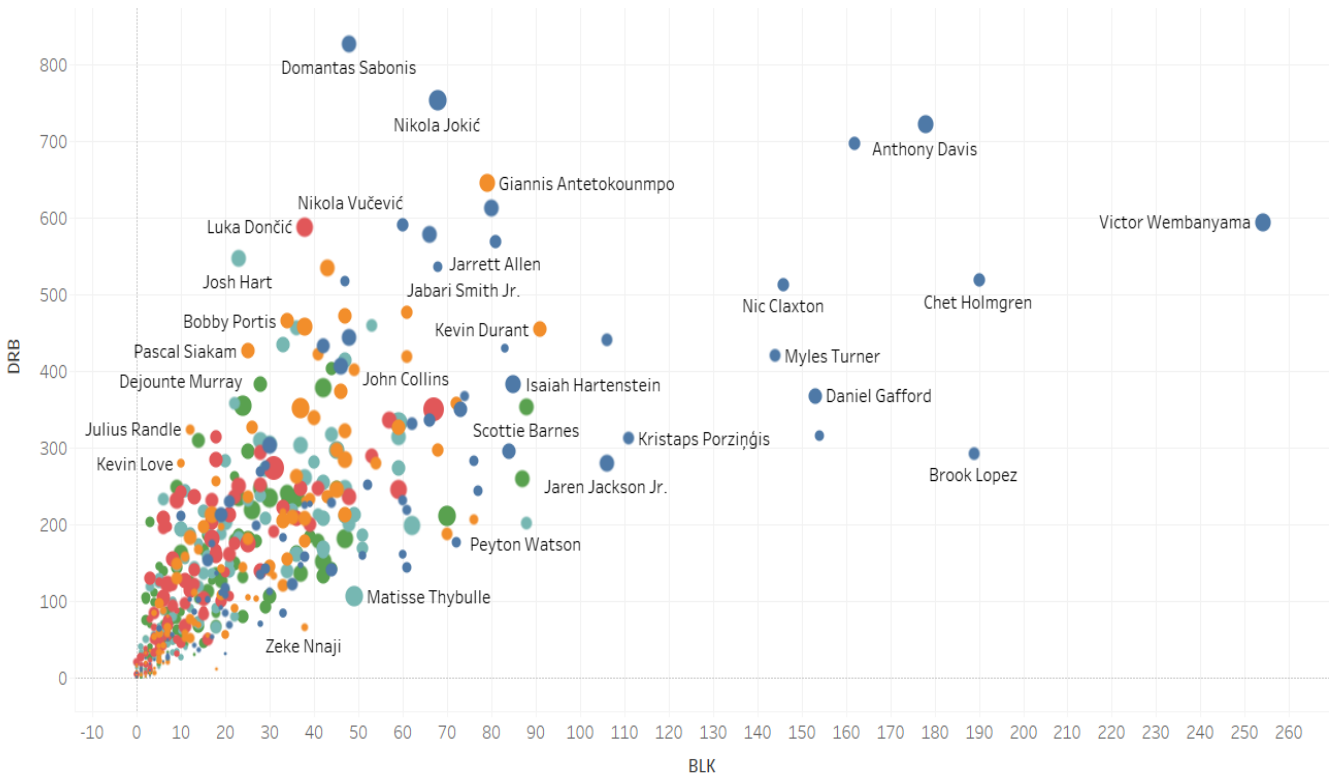
The Data

I sourced the data from Basketball Reference and used Tableau to visualize the data. The data includes all player statistics for the 2023-24 season. The data was first downloaded into Excel and then imported into Tableau for analysis. The dataset includes 572 rows and 30 columns, offering detailed statistics for 523 players. Notably, traded players are listed in multiple rows: one for their total combined stats and one for each of the teams that they played for. To enhance usability in Tableau, I created a column in Excel that I called Total Included so that I could apply a filter to exclude individual team data for players that had been traded.

The Analysis
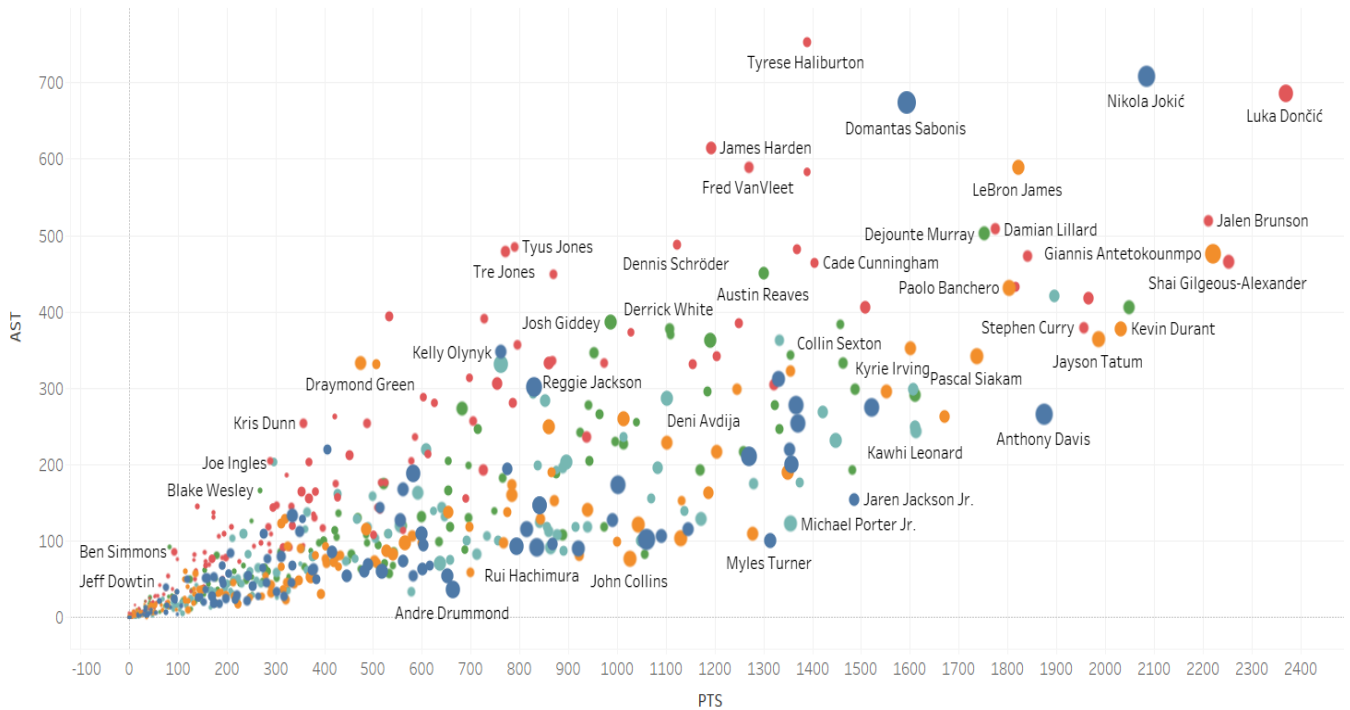
First, I created a bubble plot to visualize the league's top offensive players, using points, assists, and total rebounds per player. The plot clearly highlights Luka Dončić and Nikola Jokić as outliers, with their exceptional performances in these key areas setting them apart from their peers. This visualization strongly supports the argument for Luka Dončić as a leading MVP candidate, showcasing his substantial impact across multiple statistical categories. Additionally, it underscores that players who excel offensively have a greater likelihood of leading their teams to the playoffs. These standout performers also dominated the selections for the First, Second, and Third All-NBA Teams.

Next, I aimed to create a similar analysis for the defensive side of the game. I constructed a bubble plot using defensive rebounds, steals, and blocks to visualize the data. The plot reveals that Victor Wembanyama stands out as a defensive powerhouse, clearly in a league of his own. Surprisingly, Luka Dončić also emerges as a leader in defensive statistics, despite frequent criticism for his supposed lack of defensive prowess. The data is predominantly dominated by centers, which aligns with expectations, as they typically accumulate the most blocks and defensive rebounds.

3PT% by Position

Tm	C	PF	PG	SF	SG
ATL	0.31	0.33	0.38	0.35	0.37
BOS	0.40	0.37	0.40	0.38	0.40
BRK	0.26	0.37	0.34	0.37	0.37
CHI	0.29	0.39	0.36	0.35	0.37
CHO	0.00	0.35	0.33	0.36	0.38
CLE	0.14	0.38	0.37	0.36	0.37
DAL	0.34	0.34	0.39	0.35	0.38
DEN	0.36	0.29	0.40	0.36	0.40
DET	0.30	0.38	0.35	0.32	0.35
GSW	0.37	0.35	0.40	0.38	0.36
HOU	0.28	0.35	0.39	0.34	0.34
IND	0.37	0.40	0.37	0.39	0.32
LAC	0.34	0.40	0.35	0.39	0.40
LAL	0.25	0.39	0.40	0.33	0.36
MEM	0.31	0.34	0.35	0.30	0.39
MIA	0.34	0.38	0.35	0.37	0.38
MIL	0.36	0.36	0.36	0.36	0.41
MIN	0.40	0.39	0.44	0.34	0.36
NOP	0.35	0.31	0.39	0.39	0.37
NYK	0.33	0.30	0.40	0.34	0.38
OKC	0.36	0.39	0.34	0.40	0.41
ORL	0.35	0.35	0.35	0.33	0.38
PHI	0.38	0.38	0.37	0.31	0.36
PHO	0.28	0.41	0.35	0.34	0.41
POR	0.35	0.38	0.34	0.30	0.37
SAC	0.35	0.38	0.37	0.36	0.36
SAS	0.32	0.31	0.34	0.37	0.36
TOR	0.31	0.32	0.36	0.32	0.36
UTA	0.35	0.37	0.33	0.36	0.35
WAS	0.31	0.33	0.41	0.36	0.33

I wanted to identify which positions excel at shooting three-pointers, so I created a heatmap broken down by team and position. This task proved challenging because using the average 3PT% by position for each team resulted in skewed data, as it didn't account for the varying number of attempts and makes per player. To rectify this, I developed custom formulas based on total makes and attempts, ensuring cleaner and more accurate data.

The refined heatmap revealed several insights. Point guards (PGs) and shooting guards (SGs) generally have the highest three-point shooting percentages. Interestingly, Boston, Minnesota, and Philadelphia also boast high 3PT% from their centers. Notably, Minnesota displayed impressive three-point shooting percentages across all positions, which may explain their presence in the Western Conference Finals.

Stacked Bar Chart
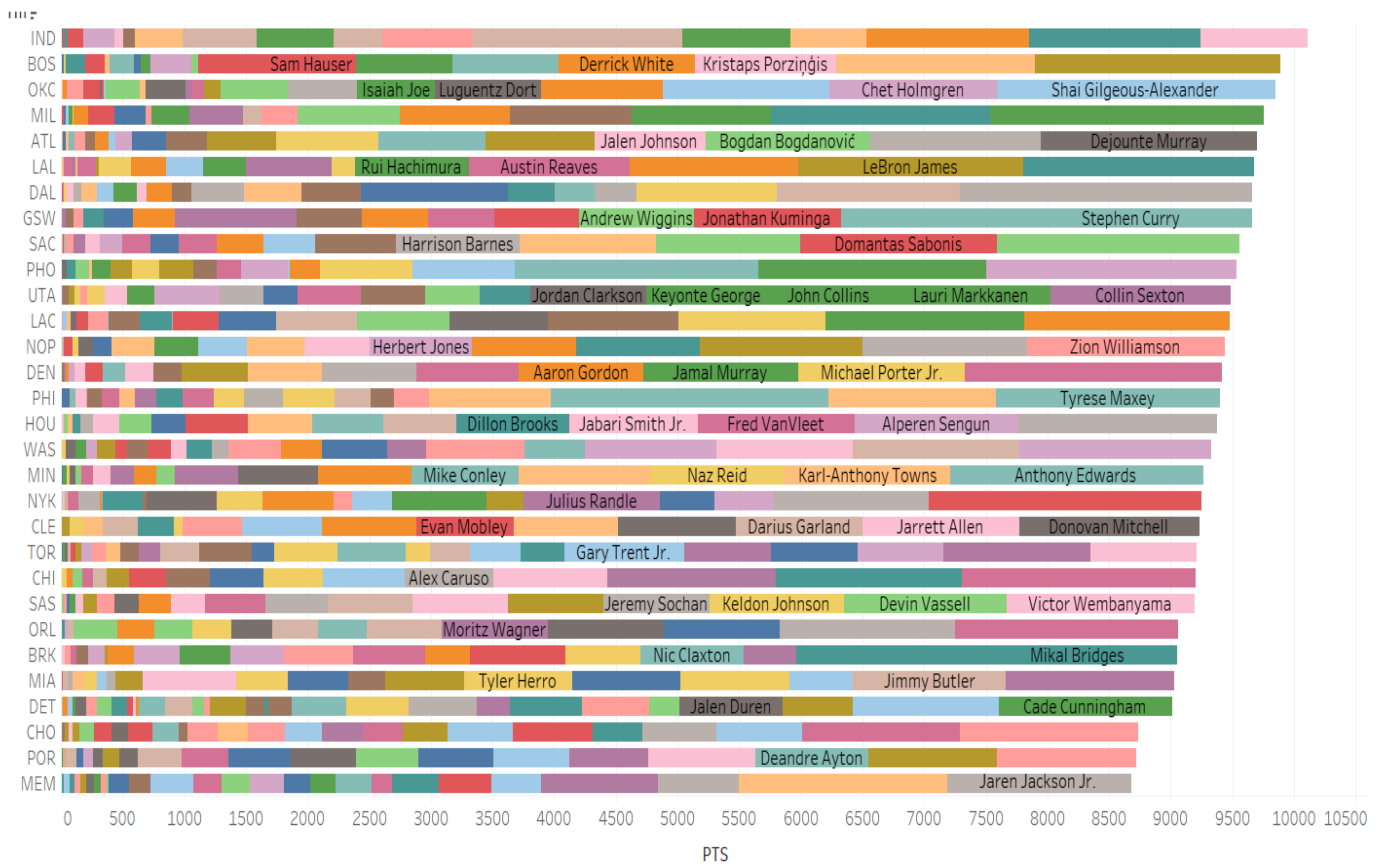
Curious about how scoring is distributed among teams, I created a stacked bar chart using points, team names, and player names. This visualization revealed that most teams feature at least two to three standout scorers. However, the most intriguing insight was that teams with two top scorers, along with several other players contributing at a high level, are more likely to make the playoffs. An exception to this pattern was the Utah Jazz, who had five prolific scorers but lacked significant contributions from the rest of the roster. This discrepancy highlights the importance of depth and balanced scoring in achieving playoff success. The chart underscored that while having star players is crucial, the collective effort of the entire team often determines overall performance and success in the league.

Tree Map
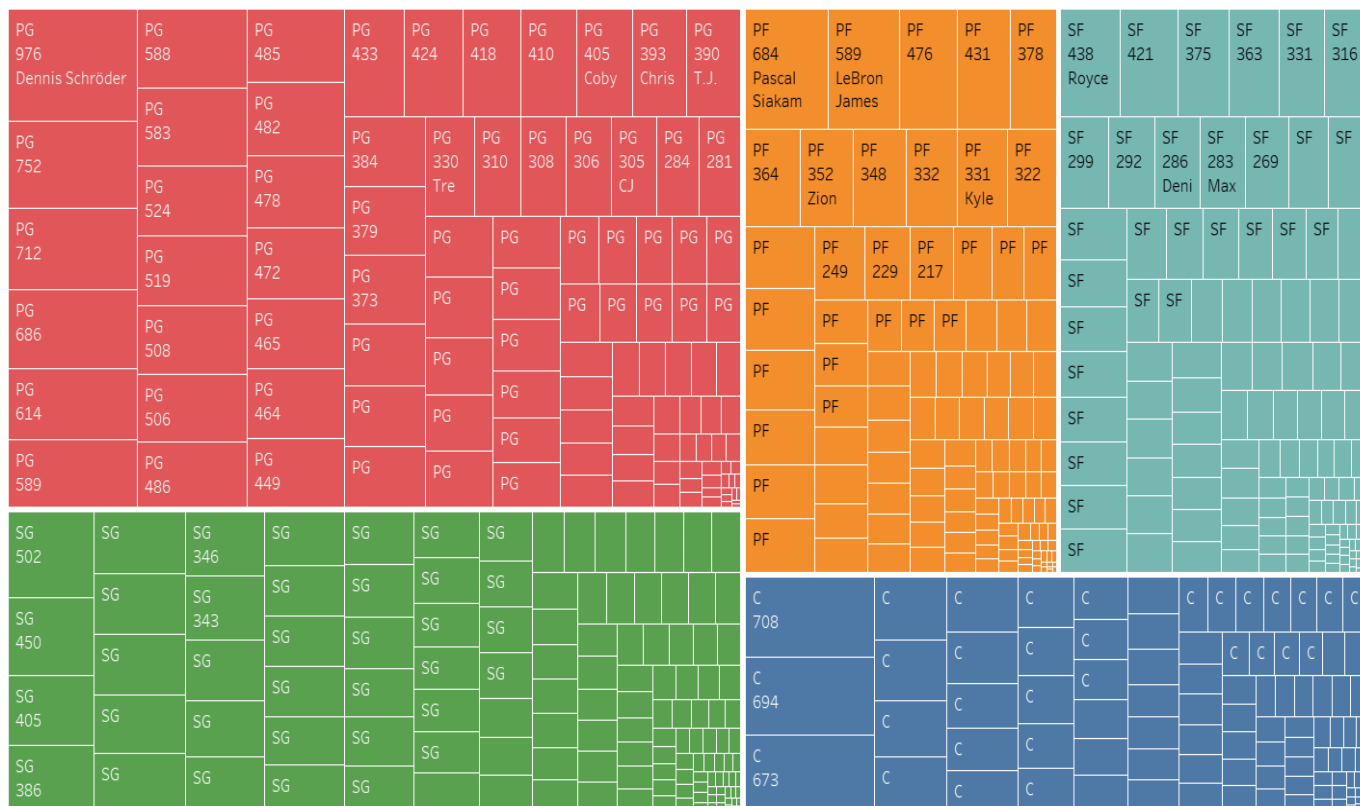
Lastly, I explored how assists are distributed across different positions. Predictably, point guards (PGs) dominated this statistic, but I was astonished to see Dennis Schröder leading the pack among PGs. Additionally, Pascal Siakam and LeBron James stood out as power forwards (PFs) with assist numbers comparable to those of point guards. Nikola Jokić, playing at the center position, had the fourth-highest total of assists, which is remarkable for a player in his role.

This trend makes sense, as these players are integral to their teams' offensive strategies, often serving as primary facilitators. Their ability to distribute the ball effectively not only enhances their teams' scoring opportunities but also demonstrates their versatility and high basketball IQ. These insights underscore the evolving nature of positional play in the NBA,

where traditional roles are increasingly blurred, and the best playmakers can emerge from any position on the court.

Conclusion

Luka Dončić and Nikola Jokić dominate the offensive side of the game, showcasing their prowess in scoring and playmaking. Despite being underrated defensively, Dončić still makes an impact, although centers, particularly Victor Wembanyama, clearly lead in defensive performance. Point guards (PGs) and shooting guards (SGs) excel in three-point shooting percentage, though some teams have centers who shoot the three well. Most teams feature at least two dominant scorers. While PGs generally lead in assists, outliers like Nikola Jokić at center and Pascal Siakam at power forward also contribute significantly in this area. Despite my best efforts I wasn't able to find any glaring discrepancies between the award winners for this season and the data. Although, a case can be made for Luka Dončić winning the League MVP Award over Nikola Jokić.

Thank you for taking the time to read through my analysis of the data for the 2023-24 NBA regular season. If there is anything that you would like to comment on or have input that I may have missed please feel free to reach out.

I had a lot of fun creating this and if you would like you can see it on my Tableau Stories please feel free to check it out. You can also see this and other articles on my GitHub Pages portfolio.

I'm also currently looking for a position where I can utilize my data analysis skills, if you know of something please feel free to reach out to me in email or LinkedIn.