



BASKETBALL GAME SIMULATION AND INSIGHTS

GROUP 13



DATASET



Our dataset consists of the top 679 NBA players who played in the NBA season 2022-23. Our dataset includes various statistical factors that help assess a player's performance on the basketball court. These statistics are crucial for evaluating a player's skills, style, and impact on the game.



We scraped the data from the website [basketballreference.com](https://www.basketballreference.com)
We have used ggplot for plotting.
Dplyr was used for data management and cleaning.

PLAYER STATS

FG

BLK

POS

FT %

STL

TOV

eFG%

AST

FG %

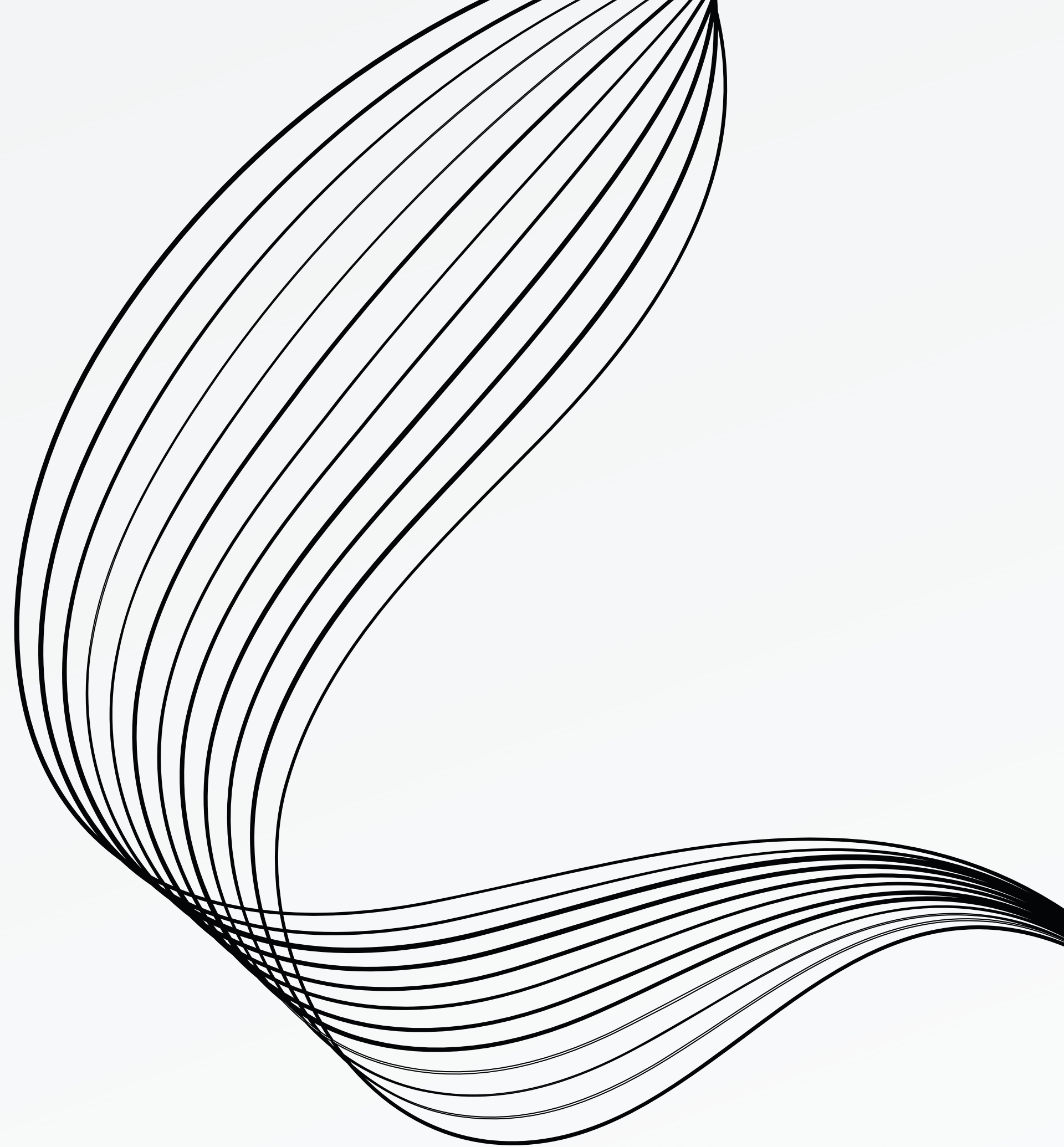
TRB

PTS

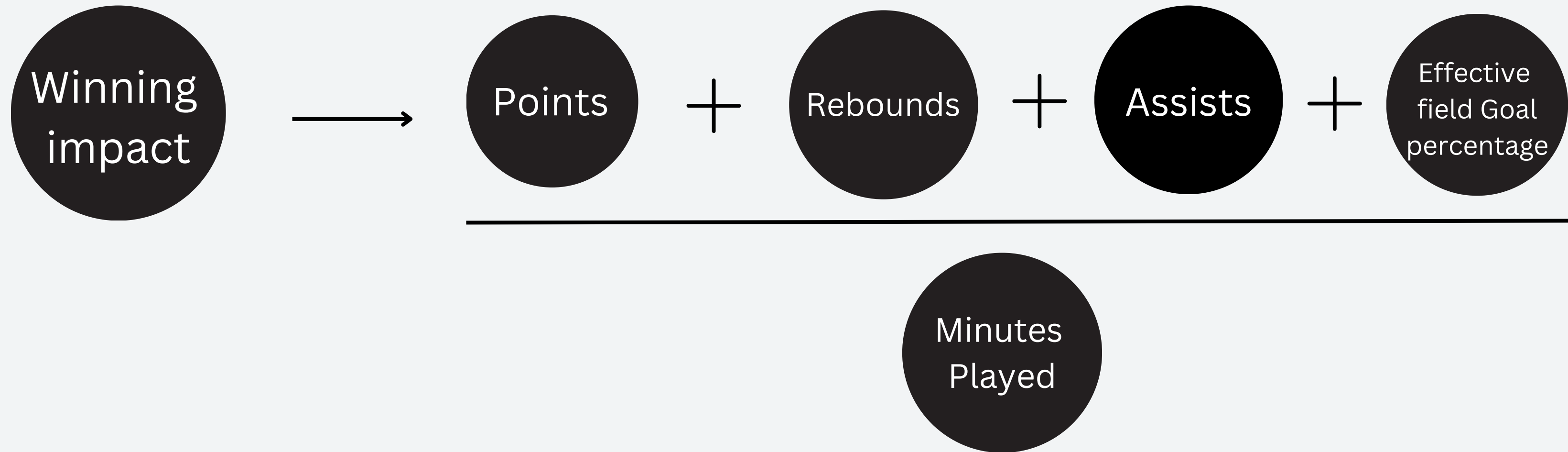
3PA

QUESTIONS:/

- *How can we measure impact of a Player on winning based on these factors?*
- *Excellence in one factor does not gurantee a successful season so which are the most balanced teams?*
- *How can you determine if a player performed well?*



Impact of a Player on Winning



Verifying!

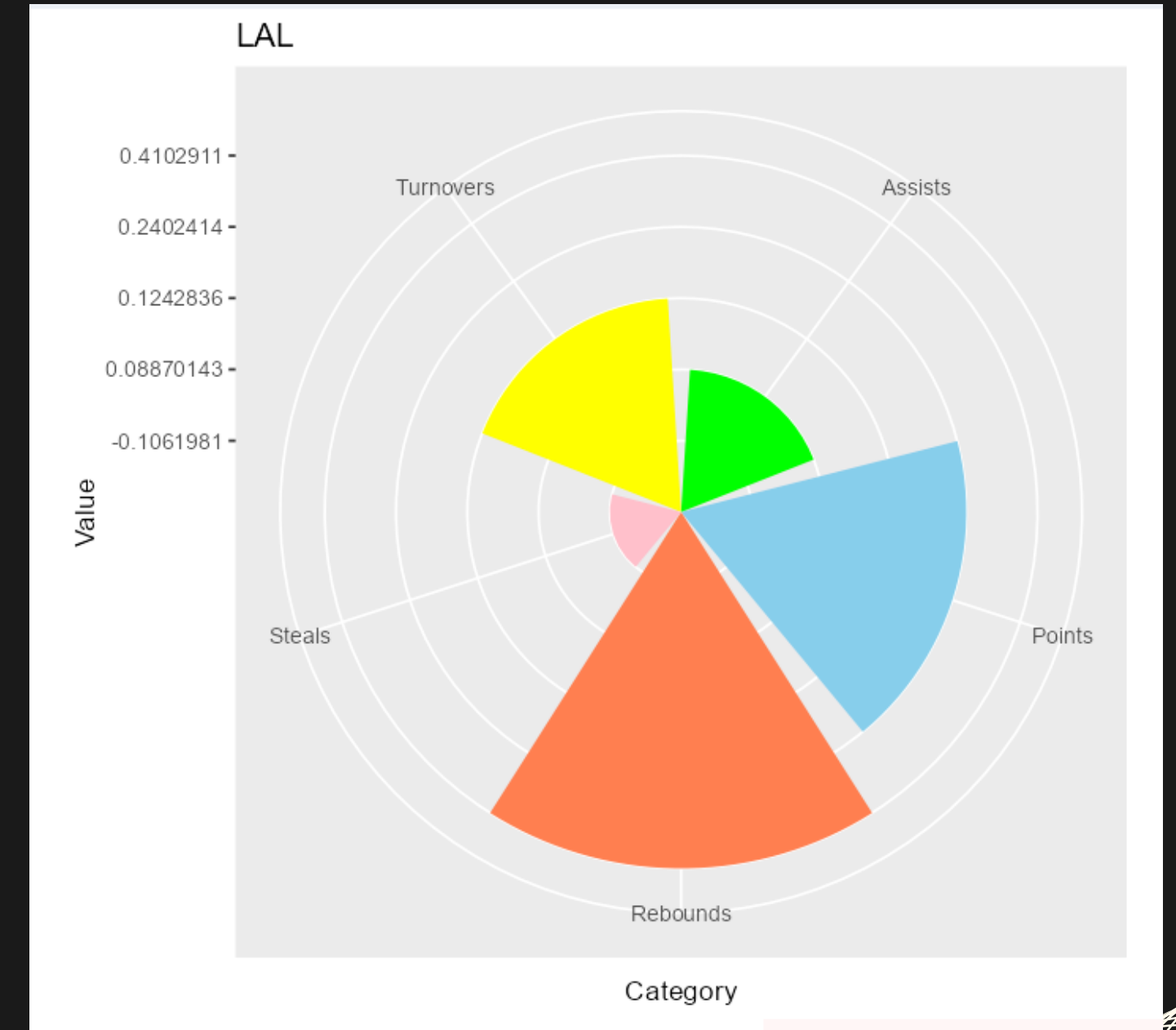
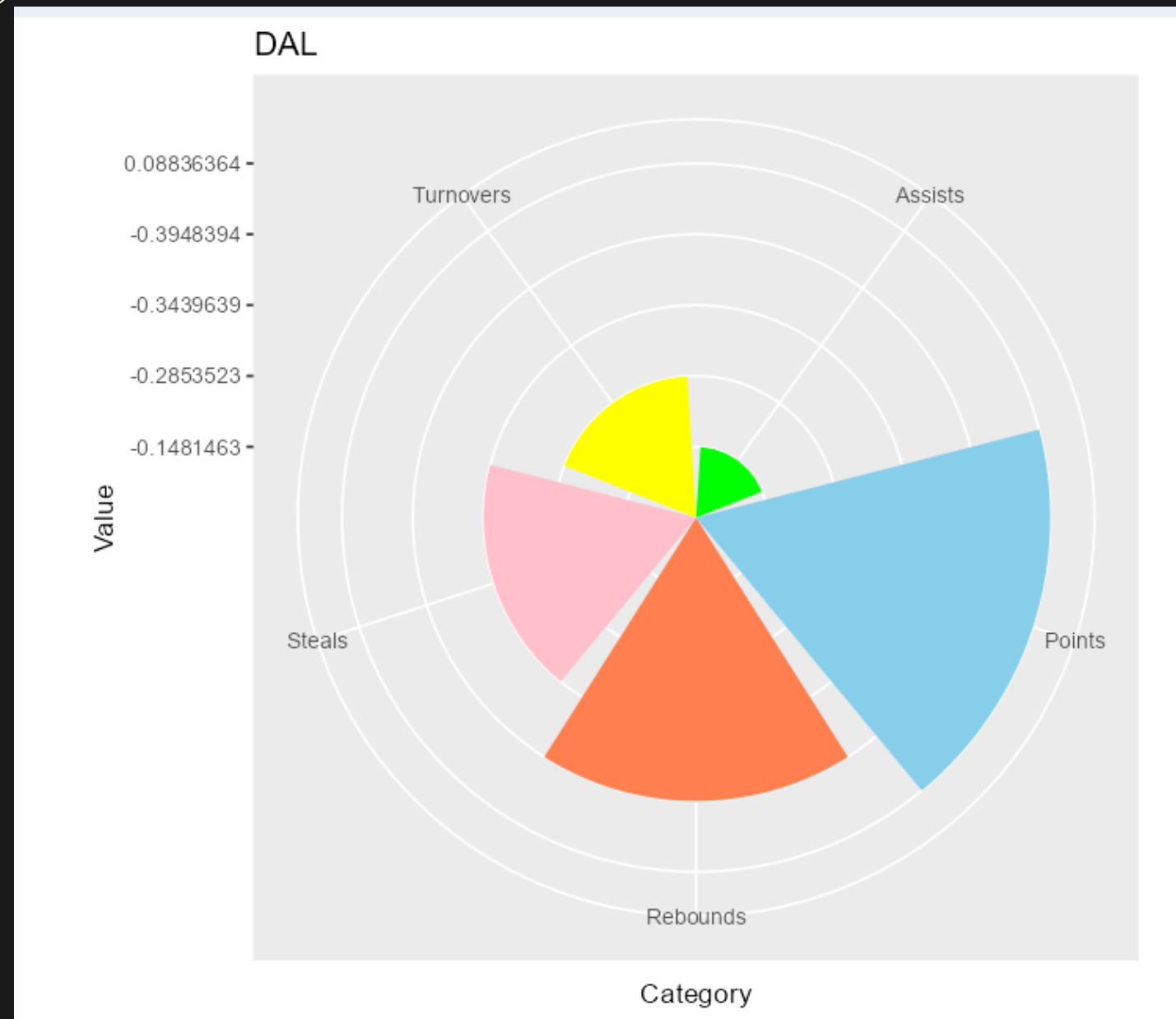
Applying the previous formula for the 679 players in our dataset, the players who had the most impact on winning were:

1. **Giannis Antetokounmpo,**
2. **Joel Embiid**
3. **Nikola Jokic**

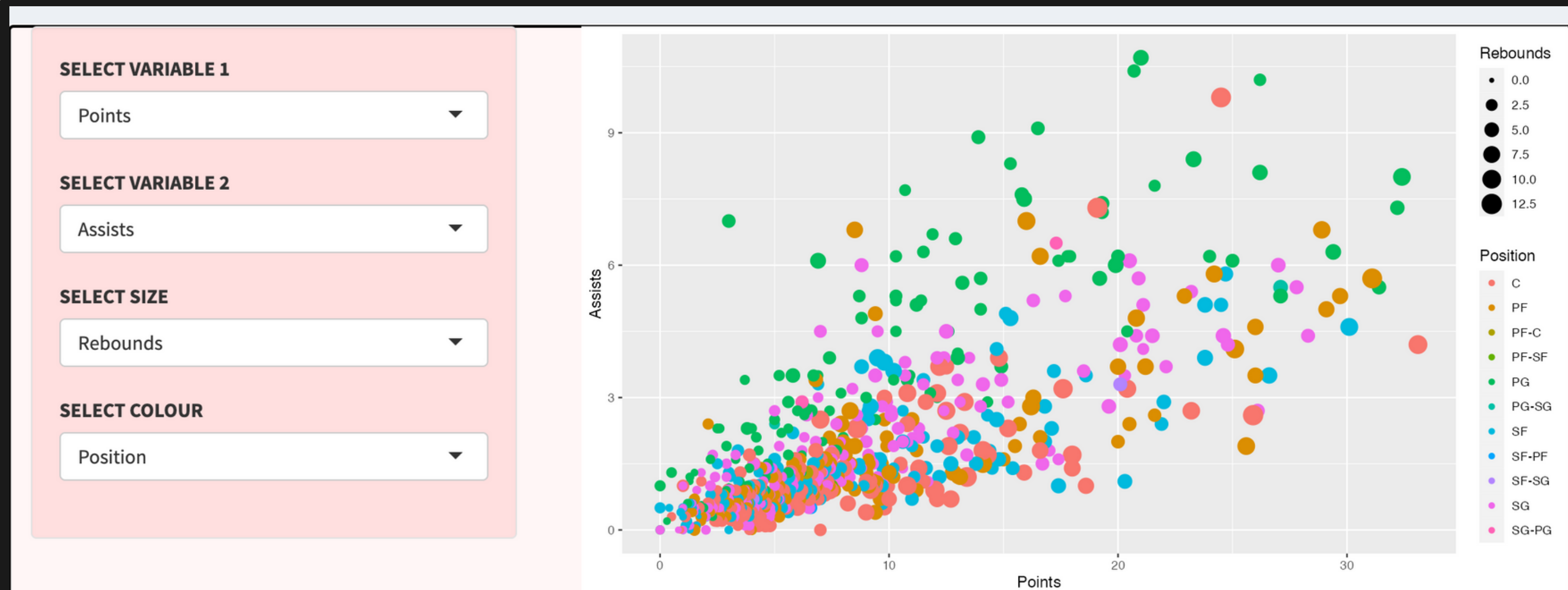
According to **MVP voting rankings** the players are ranked as:

1. **Joel Embiid**
2. **Nikola Jokic**
3. **Giannis Antetokounmpo**

TEAM ANALYSIS



PLAYER ANALYSIS



GAME SIMULATION

- We generated a random number between 7 to -7 and added this number to the average points of the selected, similarly rebounds, assists , steals and turnovers were calculated. And finally we formulated a funcion that assigned various weights to different factors to calculate which team will win.

Team Analysis

Player Analysis

Simulation

Basketball Game Simulator

Team A

Player 1

Joel Embiid

Player 2

Shai Gilgeous-Alexander

Player 3

LeBron James

Player 4

Kevin Durant

Player 5

Devin Booker

Quarter	TeamA	TeamB
1	1.00	0.00
2	0.00	1.00
3	1.00	0.00
4	1.00	0.00

Simulate

Team A WINS!!

Team B

Player 1

Giannis Antetokounmpo

Player 2

Luka Dončić

Player 3

Stephen Curry

Player 4

Jayson Tatum

Player 5

Kyrie Irving



SHINY APP

App link

Thank you!