

# Visualization of OKC Thunder's 2019/20 NBA Season

**USING PYTHON & TABLEAU** 

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# Introduction

Over the past decade, the use of analytics has exploded in the sports industry and are being incorporated to gain a little edge over their competitors. From major leagues American and European leagues like NFL, MLB, EPL to minor leagues in small developing nations, the sport franchises all over the world are pouring tons of resources and money into analytics in pursuit of gaining the competitive edge against their fiercest rivals. NBA being the third richest league in the world is also not an exception to this. Use of data analytics has revolutionized how the franchise's think and operate in all aspects of the game from devising game plans and strategies to performance prediction and player acquisition. Data Science and Analytics have completely changed the landscape of NBA, so much so that the league now runs a yearly Hackathon, in order to attract young talents and new ideas.

In my project, I aim to visualize the 2019-20 NBA Season of one of the premier teams in the league - Oklahoma City Thunders to gain an overview of the performance of the team and its individual players. This visualization is in 2 parts

- Visualization of the regular season performance using Python
- Visualization of the playoff's performance in Tableau

# **Data Source**

For this project, I have collected data from various websites like NBAStats.com, ESPN, Basketball reference and OKC thunders website. I consolidated the data into an excel sheet and then imported the file into Jupyter notebook for further analysis.

# Data Preprocessing and Formatting

All the data preprocessing and formatting was done using Python in pandas and then used for further visualization.

# Part 1 – Visualization of Regular Season – 2019/20 NBA

# 1) An overview of the current 2019-20 season

Opponents	GP	GW	GL	Win%
New Orleans Pelicans	4	4	0	100.00%
Los Angeles Lakers	4	1	3	25.00%
San Antonio Spurs	4	2	2	50.00%
Los Angeles Clippers	4	1	3	25.00%
Portland Trail Blazers	4	2	2	50.00%
Memphis Grizzlies	3	1	2	33.33%
Utah Jazz	3	2	1	66.67%
Houston Rockets	3	2	1	66.67%
Denver Nuggets	3	1	2	33.33%
Minnesota Timberwolves	3	3	0	100.00%
Phoenix Suns	3	2	1	66.67%
Sacramento Kings	3	2	1	66.67%
Golden State Warriors	3	3	0	100.00%
Orlando Magic	2	2	0	100.00%
Milwaukee Bucks	2	0	2	0.00%

Opponents	GP	GW	GL	Win%
Boston Celtics	2	1	1	50.00%
Philadelphia 76ers	2	1	1	50.00%
Washington Wizards	2	1	1	50.00%
Cleveland Cavaliers	2	2	0	100.00%
Miami Heat	2	1	1	50.00%
Chicago Bulls	2	2	0	100.00%
Toronto Raptors	2	1	1	50.00%
Indiana Pacers	2	0	2	0.00%
Dallas Mavericks	2	1	1	50.00%
Detroit Pistons	2	2	0	100.00%
New York Knicks	1	1	0	100.00%
Atlanta Hawks	1	1	0	100.00%
Charlotte Hornets	1	1	0	100.00%
Brooklyn Nets	1	1	0	100.00%

Fig 1: This table shows the number of Games Played, Games Won, Games Lost and Win% against each opponent this season

# **KEY OBSERVATIONS:**

- We had a perfect record against Pelicans, Timberwolves, Warriors, Magic, Cavaliers, Bulls, Pistons, Knicks, Hawks, Hornets and Nets this season.
- Against Clippers, Lakers we won 1 in 4 matches this season and against Nuggets and Grizzlies 1 in 3. Out of these teams only Grizzlies have a win% (46.6%) of less than 50 in the league. (less than 0.5)

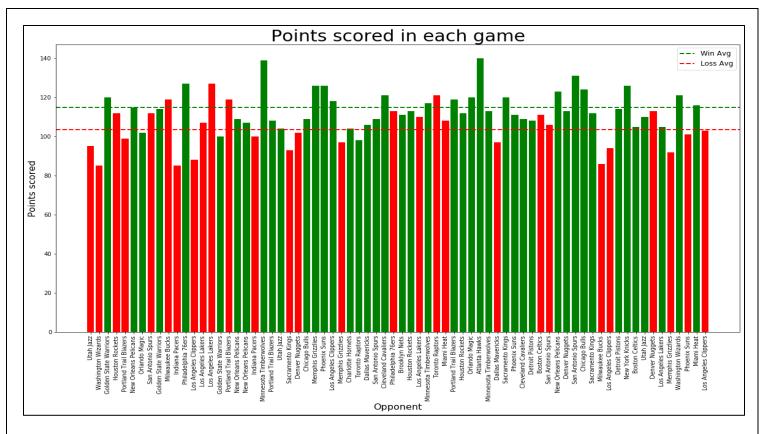


Fig 2: This bar chart shows the total points scored in each game against each opponent, with an average line for wins and losses for the season

Average points scored in Winning matches: 114.89 Average points scored in Losing matches: 103.39

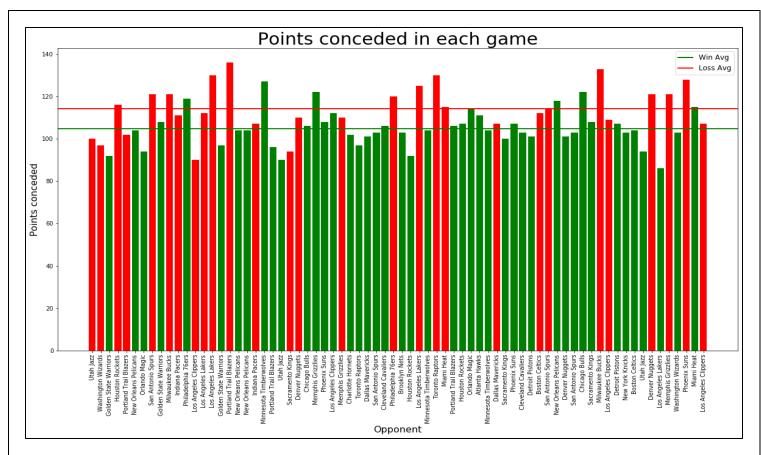


Fig 3: This bar chart shows the total points conceded in each game against each opponent, with an average line for wins and losses for the season

Average points conceded in Winning matches: 104.73 Average points conceded in Losing matches: 114.25

# 2) Who started for us?

Lineups	GP	GW	GL	Win%
S. Adams · T. Ferguson · D. Gallinari · S. Gilgeous-Alexander · C. Paul	27	15	12	55.56%
S. Adams · L. Dort · D. Gallinari · S. Gilgeous-Alexander · C. Paul	19	15	4	78.95%
S. Adams · D. Bazley · T. Ferguson · S. Gilgeous-Alexander · C. Paul	5	4	1	80.00%
T. Ferguson · D. Gallinari · S. Gilgeous-Alexander · N. Noel · C. Paul	4	1	3	25.00%
S. Adams · D. Gallinari · S. Gilgeous-Alexander · A. Nader · C. Paul	4	2	2	50.00%
L. Dort · D. Gallinari · S. Gilgeous-Alexander · N. Noel · C. Paul	3	2	1	66.67%
L. Dort · D. Gallinari · S. Gilgeous-Alexander · M. Muscala · C. Paul	1	1	0	100.00%
S. Adams · D. Bazley · S. Gilgeous-Alexander · A. Nader · C. Paul	1	1	0	100.00%
S. Adams · D. Bazley · L. Dort · S. Gilgeous-Alexander · C. Paul	1	1	0	100.00%
S. Adams · L. Dort · D. Gallinari · S. Gilgeous-Alexander · D. Schröder	1	0	1	0.00%
S. Adams · D. Bazley · H. Diallo · S. Gilgeous-Alexander · C. Paul	1	1	0	100.00%
S. Adams $\cdot$ T. Ferguson $\cdot$ D. Gallinari $\cdot$ S. Gilgeous-Alexander $\cdot$ D. Schröder	1	0	1	0.00%
S. Adams · H. Diallo · L. Dort · S. Gilgeous-Alexander · C. Paul	1	0	1	0.00%
S. Adams · L. Dort · T. Ferguson · D. Gallinari · C. Paul	1	1	0	100.00%
S. Adams · H. Diallo · D. Gallinari · S. Gilgeous-Alexander · C. Paul	1	0	1	0.00%
D. Bazley · L. Dort · M. Muscala · A. Nader · C. Paul	1	0	1	0.00%

Fig 4: This table shows the different Starting Lineups, Games Played, Games Won, Games Lost and Win% of each lineup this season

# **KEY OBSERVATIONS:**

- Lineup of Adams, Ferguson, Gallinari, Alexander and Paul started the most times for us and had a win % 55.56 in 27 games winning 15 of them.
- Next most frequently used lineup was Adams, Dort, Gallinari, Alexander and Paul with a total of 19 games in which we won 15 of them.
- Adams, Bazley, Ferguson, Alexander and Paul started in 5 games and we went on to win 4 of them.

# 3) How did everyone fare in the league?

	GP	PCT	PTS	OPP PPG	FGM	FGA	FG%	3PM	3PA	3P%	FTM	FTA	FT%	OR	DR	REB	AST	STL	BLK	то	PF
TEAM																					
Milwaukee Bucks	73	0.767	118.7	108.6	43.3	90.9	47.6	13.8	38.9	35.5	18.3	24.7	74.2	9.5	42.2	51.7	25.9	7.2	5.9	14.7	19.6
Toronto Raptors	72	0.736	112.8	106.5	40.2	87.9	45.8	13.8	37	37.4	18.5	23.2	79.6	9.5	35.9	45.4	25.2	8.8	5	14.1	21.7
Los Angeles Lakers	71	0.732	113.4	107.6	42.3	88.3	48	11	31.6	34.9	17.7	24.3	72.9	10.7	35.1	45.7	25.4	8.6	6.6	14.7	20.7
LA Clippers	72	0.681	116.3	109.9	41.6	89.2	46.6	12.4	33.5	37.1	20.8	26.3	79.1	10.7	37	47.7	23.7	7.1	4.7	14	22.1
Boston Celtics	72	0.667	113.7	107.3	41.3	89.6	46.1	12.6	34.5	36.4	18.6	23.2	80.1	10.7	35.4	46.1	23	8.3	5.6	13.2	21.6
Denver Nuggets	73	0.63	111.3	109.2	42	88.9	47.3	11	30.6	35.9	16.2	20.9	77.7	10.8	33.4	44.1	26.7	8	4.6	13.1	20.3
Indiana Pacers	73	0.616	109.4	107.5	42.1	88.5	47.6	10.2	28	36.3	15	19.1	78.7	8.7	34.1	42.8	25.9	7.4	5.2	12.7	19.8
Oklahoma City Thunder	72	0.611	110.4	108.4	40	85.5	46.8	10.7	30.2	35.5	19.8	24.8	79.6	8.2	34.7	42.9	21.7	7.6	4.9	13	19.3
Utah Jazz	72	0.611	111.3	108.8	40.1	85.1	47.1	13.4	35.2	38	17.8	22.8	77.9	9.1	35.8	44.9	22.4	6.1	4	14.6	20.4
Houston Rockets	72	0.611	117.8	114.8	40.8	90.4	45.1	15.6	45.3	34.5	20.6	26.1	79.1	9.8	34.5	44.3	21.6	8.7	5.2	14.2	21.8
Miami Heat	73	0.603	112	109.1	39.5	84.4	46.8	13.4	35.4	37.9	19.7	25.2	78.3	8.5	35.9	44.4	25.9	7.5	4.5	14	20.6
Philadelphia 76ers	73	0.589	110.7	108.4	41.1	87.9	46.8	11.6	31.6	36.8	16.9	22.4	75.5	10.5	35	45.4	25.8	8	5.3	13.5	20.9
Dallas Mavericks	75	0.573	117	112.1	41.7	90.3	46.1	15.1	41.3	36.7	18.6	23.8	77.9	10.5	36.4	46.9	24.7	6.1	4.8	12.1	19.5
Brooklyn Nets	72	0.486	111.8	112.4	40.4	90.3	44.8	13.1	38.1	34.3	17.9	24.1	74.5	10.6	37.3	47.9	24.5	6.4	4.5	14.6	21
Portland Trail Blazers	74	0.473	115	116.1	42.2	91.2	46.3	12.9	34.1	37.7	17.7	22.1	80.4	10.2	35.1	45.3	20.6	6.3	6.1	12.4	21.7
Memphis Grizzlies	73	0.466	112.6	113.7	42.5	90.9	46.8	10.9	31.5	34.7	16.6	21.8	76.3	10.3	36.2	46.5	26.9	7.9	5.5	14.6	21.2
Phoenix Suns	73	0.466	113.6	113.4	41.2	88.1	46.8	11.4	31.8	35.8	19.9	23.8	83.4	9.8	33.8	43.5	27.2	7.7	4	14.2	22
Orlando Magic	73	0.452	107.3	108.3	39.3	88.6	44.4	11.1	32.2	34.3	17.6	22.7	77.4	10.3	34.2	44.5	23.9	8.2	5.4	12.2	18.3
San Antonio Spurs	71	0.451	114.1	115.2	42.2	89.4	47.2	10.7	28.5	37.6	19	23.4	81	9	35.6	44.6	24.7	7.3	5.5	12.3	19.4
Sacramento Kings	72	0.431	110.1	112.1	40.9	88.4	46.2	12.7	34.9	36.4	15.7	20.3	77	9.7	32.9	42.6	23.8	7.7	4.1	13.8	22.2
New Orleans Pelicans	72	0.417	115.8	117.1	42.6	91.6	46.5	13.6	36.9	37	17.1	23.4	72.9	11.1	35.4	46.5	26.8	7.5	5	15.9	21.2
Charlotte Hornets	65	0.354	102.9	109.6	37.3	85.9	43.4	12.1	34.3	35.2	16.2	21.6	74.8	11	31.8	42.8	23.8	6.6	4.1	13.9	18.8
Washington Wizards	72	0.347	114.4	119.1	41.5	90.9	45.7	12	32.6	36.8	19.4	24.6	78.8	10.2	31.9	42	25	8	4.3	13.6	22.7
Chicago Bulls	65	0.338	106.8	109.9	39.6	88.6	44.7	12.2	35.1	34.8	15.5	20.5	75.5	10.5	31.4	41.9	23.2	10	4.1	14.6	21.8
New York Knicks	66	0.318	105.8	112.3	40	89.3	44.7	9.6	28.4	33.7	16.3	23.5	69.4	12	34.5	46.5	22.1	7.6	4.7	13.8	22.2
Detroit Pistons	66	0.303	107.2	110.8	39.3	85.7	45.9	12	32.7	36.7	16.6	22.4	74.3	9.8	32	41.7	24.1	7.4	4.5	14.5	19.7
Atlanta Hawks	67	0.299	111.8	119.7	40.6	90.6	44.9	12	36.1	33.3	18.5	23.4	79	9.9	33.4	43.3	24	7.8	5.1	15.7	23.1
Minnesota Timberwolves	64	0.297	113.3	117.5	40.4	91.6	44.1	13.3	39.7	33.6	19.1	25.4	75.3	10.5	34.3	44.8	23.8	8.7	5.7	14.7	21.4
Cleveland Cavaliers	65	0.292	106.9	114.8	40.3	87.9	45.8	11.2	31.8	35.1	15.1	19.9	75.8	10.8	33.4	44.2	23.1	6.9	3.2	15.7	18.3
Golden State Warriors	65	0.231	106.3	115	38.6	88.2	43.8	10.4	31.3	33.4	18.7	23.2	80.3	10	32.9	42.8	25.6	8.2	4.6	14.3	20.1

Fig 5: This colormap shows how each team has performed in the league in comparison with other teams

# **INTERPRETATION:**

- For each column the best team in the league is marked by yellow and the worst by black. The intermediate teams are marked with a range of colors yellowish green to bluish black in the decreasing order.
- This means that the better performing teams are marked with yellowish green spectrum whereas the bluish black spectrum represents the teams in the lower stages of the league.
  - I. Yellow to green Represents the top 15 in the League
  - II. Blue to Black Represents the bottom 15 in the League

### **EXCEPTIONS:**

- However, there are some exceptions to this interpretation as a few columns needs to interpreted in the reverse manner. These columns are as follows:
  - I. 'OPP PPG' Opponents points per game
  - II. 'TO' Turnovers
- Since the interpretation is reverse, we have:
  - I. **Yellow to green** Represents the bottom 15 in the League
  - II. Blue to Black Represents the top 15 in the League

# SOME EYE-CATCHING INSIGHTS:

- **Bucks** not only lead the points table with most wins, but they also are the best in the league in most Field goals scored (43.3), points scored (118.7) and Total rebounds collected (51.7) per match. They top the table in defensive rebounds 42.2 rebounds per match.
- Lakers lead the table in Field goal conversion (48%) and blocks made per match (6.6).
- **Raptors** have conceded an average of 106.5 points which the least in the league whereas **Atlanta Hawks** and **Washington Wizards** have conceded the most with an average of 119.7 and 119.1.
- LA Clippers lead the league in number of free throws made per match (20.8) as they also took the most number of Free Throw attempts (26.3) in the league. Rockets are the second best with 20.6 free throws in 26.1 attempts per match.
- The **Indiana Pacers**, despite winning more than 60% of their game they have made the least 3 point and free throw attempts in the league. They also made 15 free throws per game which is the least in the league.
- **OKC Thunders** this season took the least number of offensive rebounds (8.2) available per match whereas **New York Knicks** led the league with 12 rebounds.
- The Jazz & Heat converted 38% of their 3-point shots but Rockets made the most number of 3-pointers (15.6) and also on an average made 45 attempts per match most in the league.
- Mavericks and Jazz on an average made 6.1 steals per match which is the lowest in the league whereas Bulls lead with 10 steals per game.
- **Suns** made 27 assists per game and **Portland Trail Blazers** made 20 assists per game which is the most and least in the league respectively.
- **Hornets** with 103 points per game which is the least in the league also made least field goals and have the worst field goal conversion rate.
- Hornets, Wizards, Bulls and Pistons average around 42 rebounds per game and take around 32 defensive rebounds per game which is the least in the league.
- Warriors, Hawks, Timberwolves and Knicks this season have the worst 3-point conversion rate (33%) and Cavaliers with 3 blocks per game is the worst in the league.
- Mavericks, Magic and Spurs with 12 turnovers per game lost the possession less frequently compared to the rest of the teams. Pelicans, Hawks and Cavaliers with 16 turnovers per game lost the ball more often.
- Hawks on an average made fouls per game 23 whereas Magic & Cavaliers made 18 fouls which was the most and least respectively.

# 4. Our League Standing - What went well and what didn't?

	FG	FGA	FG%	3P	3PA	3P%	2P	2PA	2P%	FT	FTA	FT%	ORB	DRB	TRB	AST	STL	BLK	TOV	PF	PTS
Index																					
Team/G	40	85.5	0.468	10.7	30.2	0.355	29.3	55.3	0.529	19.8	24.8	0.796	8.2	34.7	42.9	21.7	7.6	4.9	13.7	19.3	110.4
Lg Rank	23	28	8	27	27	17	12	15	10	4	5	7	30	15	23	28	16	15	6	4	21
Year/Year	-6.2	-9	1.4	-5.9	-7.6	0.7	-6.4	-9.8	1.9	10.8	-0.7	8.3	-34.5	-2.4	-10.8	-7.2	-18.2	-5.4	-1.9	-13.9	-3.5
Opponent/G	40.8	89.6	0.455	11.3	33.3	0.34	29.5	56.4	0.523	15.5	19.6	0.795	10.5	34.3	44.8	23	7	4	14.2	22.8	108.4
Lg Rank - Opp	16	19	10	5	10	2	20	20	14	4	3	30	23	10	12	5	7	3	18	2	7
Year/Year - Opp	0.1	1.1	-0.5	0.5	5.2	-1.6	-0.1	-1.2	0.6	-15	-18.6	3.4	5.9	-4.1	-1.9	-7.5	-14.4	-20.4	-15	1.4	-2.4

Fig 6: This image shows where we rank in the league for some offensive and defensive attributes. It also shows our opponents performance against us. It also shows year/year increase or decrease in our performance

# **INTERPRETATION:**

- The statistics shown in these table are per game statistics and to be interpreted as such
- Lg Rank Lower the better except for TOV and PF
- Year/Year This shows % of decrease/increase in each attribute for this season compared to the last season

# **KEY OBSERVATIONS:**

- There is a 5.9% decrease in 3P shots made per match and 6.4% decrease in two pointers made. Altogether, we made 9% less field goal attempts and 6.2% less field goals per match this season as compared to last season.
- We took 35% less Offensive rebounds this season which has caused a 11% decrease in Total Rebounds taken.
- There is a 7% drop in Assists made per game and 18% drop in Steals made per game when compared to last season.
- We also committed 14% lesser Personal Fouls this season and 2% less Turnovers this season.

### THUNDERS VS OPPONENTS:

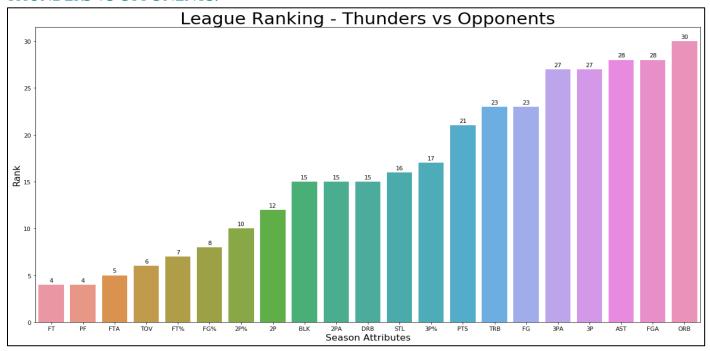


Fig 7: This bar graph shows our league ranking for each attribute (vs opponents) in ascending order

### **INTERPRETATION:**

• Rank - Lower the better except for TOV and PF.

# **KEY OBSERVATIONS:**

- We ranked in the top 10 in free throws made, attempted, and converted, 2-pointers conversion and field goal conversions in the league.
- We also ranked in the top half of the table in 2-pointers made, blocks and defensive rebounds collected.
- We ranked last in the league with offensive rebounds, 28<sup>th</sup> in field goal attempts taken and assists made.
- We ranked 27<sup>th</sup> in 3-pointers made in and attempts along with 23<sup>rd</sup> in field goals made and total rebounds taken.
- We ranked 6<sup>th</sup> in turnovers and 4<sup>th</sup> in personal fouls committed this season.

# **OPPONENTS VS THUNDERS:**

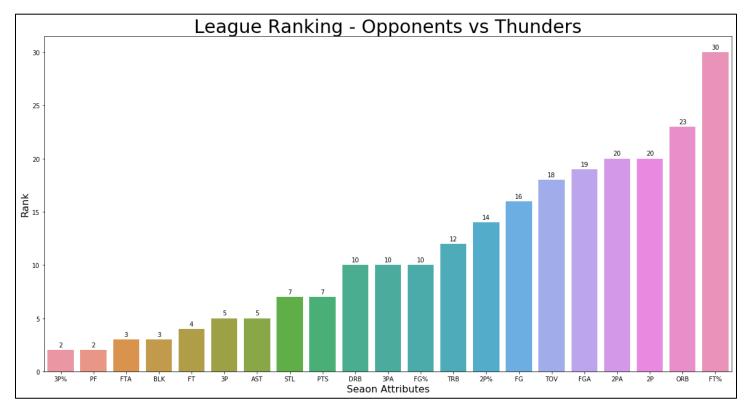


Fig 8: This bar graph shows our league ranking for each attribute (vs thunders) in ascending order

# **INTERPRETATION:**

• Rank - Lower the better except for TOV and PF

# **KEY OBSERVATIONS:**

- We rank 7<sup>th</sup> in average points conceded per game. This shows our defense has been good and other teams have found it harder to score points against us.
- As we can see, 3-Point accuracy of our opponents against us is low and we are ranked in 2<sup>nd</sup> in the league. In terms of 3-pointers conceded per game we rank 5<sup>th</sup> in the league. This tells that, teams find it extremely hard to score 3-pointers against us. It could also be because teams look to score more 2-pointers against us rather than going for 3-point shots.

- Our opponents averaged 4 blocks and 7 steals per match against us which makes us  $3^{rd}$  best and  $7^{th}$  best team in the league in terms of blocks and steals conceded per game. 23 assists against us is the  $5^{th}$  least in the league.
- Opponents commit 23 personal fouls per game against which can explain the high percentage of free throws made by us in the league.

# STRENGTHS VS WEAKNESSES:

What went well?	Where do we need to improve?
We didn't allow our Opponents to score freely as we are the 7 <sup>th</sup> best team in the league in terms of points conceded	We need to work on taking offensive rebounds to gain more possession as we took the least no of ORB available per match in the league
Strong defense restricted our Opponents 3-point scoring against us well as in terms of less 3 pointers conceded we stand 5 <sup>th</sup> in the league	We need to take more 3-point, FG attempts and focus on improving our conversion rate
Our ball handling and passing was pretty good this season evidenced by the number of blocks and steals conceded to our opponents. We are the 3 <sup>rd</sup> and 7 <sup>th</sup> best in the league respectively.	Need to focus on improving our assists and create more scoring opportunities for other players
Our offensive tactics in the paint was good as we rank high in terms of Free throws made and fouls earned.	We need to focus on reducing our turnovers to increase ball possession

# 5. How did the players perform?

### **OFFENSIVE ATTRIBUTES:**

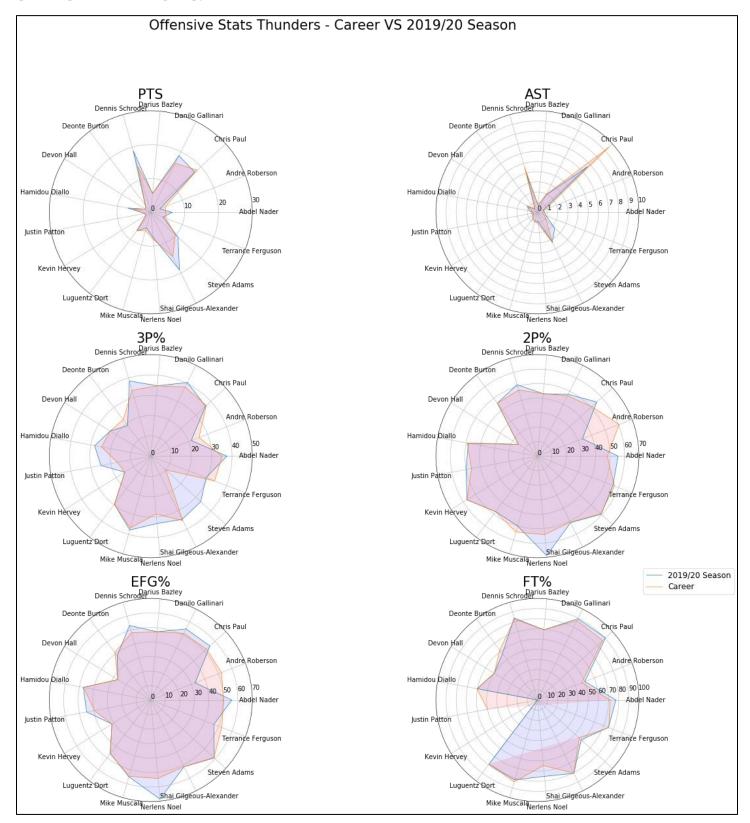


Fig 9: This is a spider plot which compares the performance of each individual player with one another in the season by plotting the offensive stats. It also compares their season average to their career average

### **KEY OBSERVATIONS:**

# PTS:

• Alexander, Gallinari and Schroder scored closer to 19 points per game (which was also notably higher than their career average) with Chris Paul also supporting them with 18 points per game.

# AST:

• Chris Paul was the leader with almost 7 assists per game supported by Alexander, Gallinari, Schroder and Adams.

# 3P%:

- Gallinari converted more than 40% of his 3-point shots with Schroder, Muscala, Nader and Chris Paul converting more than 35% of their shots.
- Adams and Noel took only 3 shots each in the season converting 1 of them. This is the reason why their shooting efficiency is the 30's.

# 2P%:

- Nerlens Noel converted almost 70% of the 2-point shots that he attempted, and Steven Adams converted 60% being the 2<sup>nd</sup> best.
- Nerlens Noel, Abdel Nader's conversion rate considerably higher than their career average along with Schroder, Chris Paul and Gallinari also shooting better than they have done so far in their career.
- Muscala and Roberson's conversion rate this year has been considerably lower than their career average.

# EFG%:

• Nerlens Noel's effective field goal percent is almost 70% followed by Steven Adams with 60% being the 2<sup>nd</sup> best. Nader, Chris Paul, Muscala, Alexander, Gallinari and Schroder are scoring more than 50% of field goals per possession.

# FT%:

• Chris Paul and Gallinari shot 90% of their free throws with Schroder, Muscala and Shai Alexander more than 80% of their attempts.

# **DEFENSIVE ATTRIBUTES:**

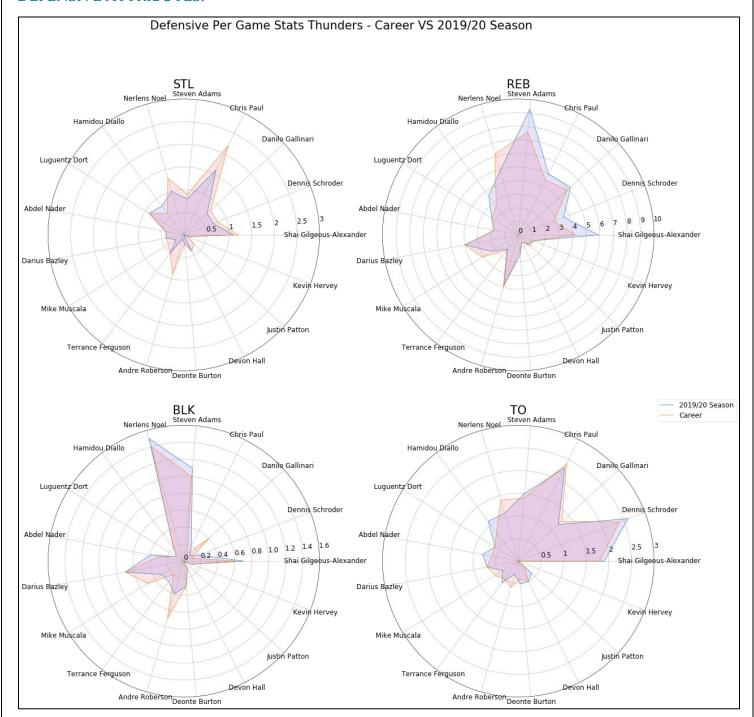


Fig 10: This is a spider plot which compares the performance of each individual player with one another in the season by plotting the defensive stats. It also compares their season average to their career average

# KEY OBSERVATIONS: STL:

• Chris Paul leads with 16 steals per 10 matches with Alexander and Nerlens Noel averaging approximately 1 steal per match.

### REB:

• Steven Adams leads with more than 9 rebounds per match followed by Shai Alexander with 6 rebounds. They are supported by Danilo Gallinari, Chris Paul and Noel with 5 rebounds each per match.

# BLK:

• Nerlens Noel averages 15 blocks per 10 matches whereas Steven Adams 11 per 10 matches, both are averaging more than their career. There is a dip in blocks per match with Andre Roberson and Mike Muscala when compared to their career statistics.

# TOV:

• Dennis Schroder and Chris Paul average 26 and 23 turnovers per 10 matches with Shai Alexander averaging 19 per 10 matches.

# **6.SUGGESTIONS:**

- We need to take more attempts at the basket (both 3-point & 2-point shots) to increase our scoring. With our conversion rate for both the shots being higher (3P% 35.5 & 2P% 52.9) and ranked better in the league, improving our attempts would allow us the chance to secure more points.
- We could focus on better 3-point shooters in our side and make them take more attempts to improve our 3-pointer conversion rate. At the same time, we could also focus on a rigorous 3-point training regimen to improve our shooting efficiency with the ball (We ranked 27<sup>th</sup> in the league 3-P).

Players who can make an impact:

- 1. Danillo Gallinari
- 2. Dennis Schroder
- 3. Mike Muscala
- 4. Abdel Nadar
- 5. Chris Paul
- Even though the points scored between individuals is shared among the team and we have adopted a collective team play to score points we need to focus on making more assists to create more scoring opportunities for other players (We ranked 28<sup>th</sup> in League assists).
- We need to work on getting more offensive rebounds in play which would help us gain possession of the ball while attacking (We ranked 30<sup>th</sup> in the league).
- The same is also applicable for turnovers, we need to work reducing the turnovers committed and work on better ball rotation to avoid turnovers and keep more possession of the ball.

# Part 2 – Visualization of Playoffs using Tableau

# OFFENSE - WHO WAS THE IMPACT PLAYER?

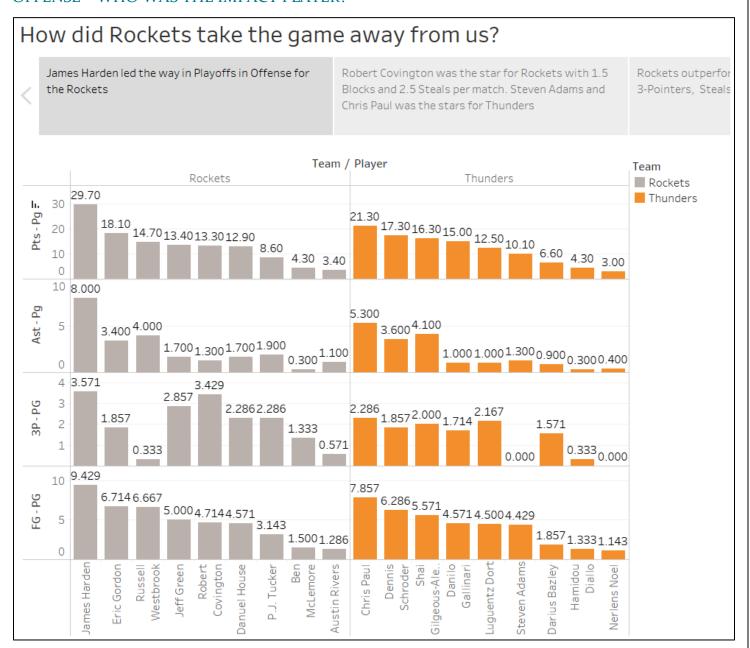


Fig 11: Bar chart which contains shooting attributes such as PPG, APG, 3-P and FG

• James Harden was the most impactful player in Playoffs for Rockets and averaged 30 Points along with 8 Assists, 10 Field goals and 3.6 3-P per game comprehensively outscoring everyone in the playoffs.

# DEFENSE - WHO WAS THE IMPACT PLAYER?

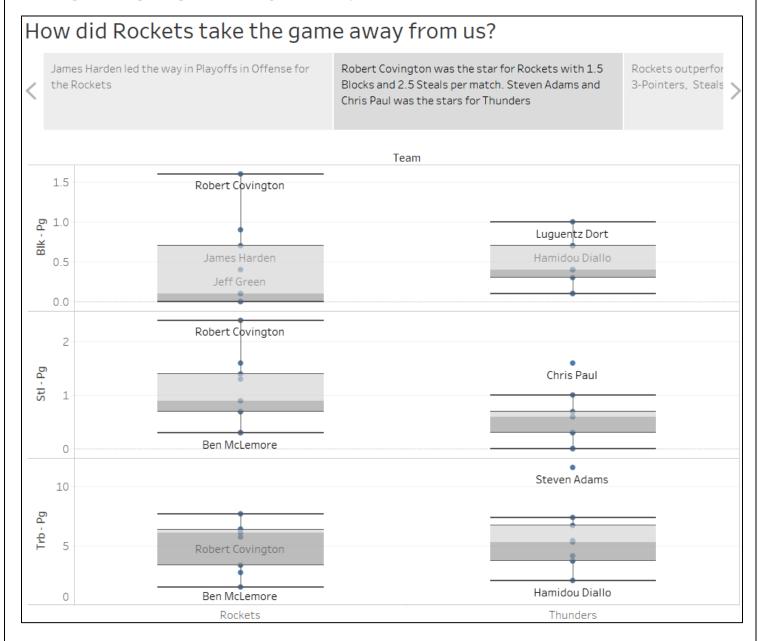


Fig 12: Box plot visualisation for defensive attributes such as STL, BLK, TRB per game in the playoffs

• Robert Covington outperformed everyone with almost 1.5 Blocks and 2.5 Steals per game in the playoffs and was a major contributor for the Rockets.

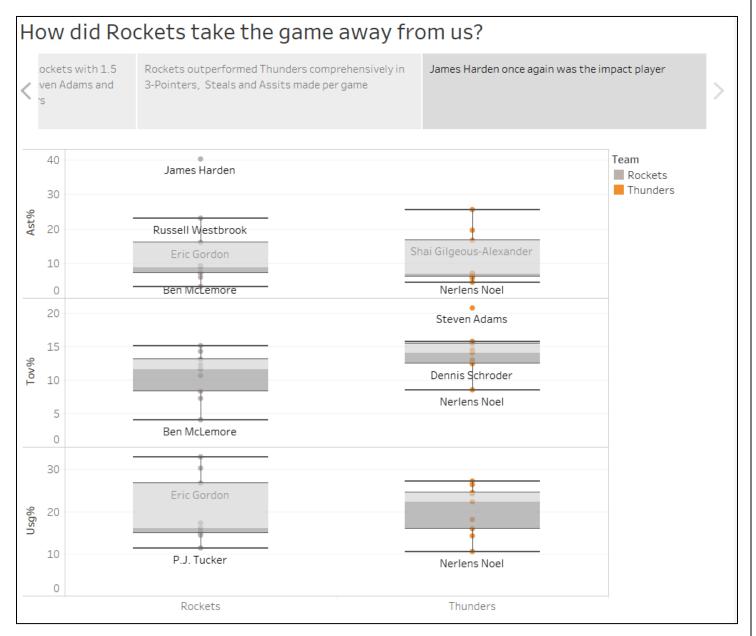
# WHAT MADE THE DIFFERENCE? How did Rockets take the game away from us? ense for Robert Covington was the star for Rockets with 1.5 Rockets outperformed Thunders comprehensively in Jame Blocks and 2.5 Steals per match. Steven Adams and 3-Pointers, Steals and Assits made per game Chris Paul was the stars for Thunders Player 21(4)00 Team Totals Roc.. Team Totals Thu.. Ast - Pg 17.900 10 20 $\bigcirc$ 18.286 15 10 12.000 5 20 18.571 15 10 13.286 5 10 0 9.300 5 5.300

Fig 13: This chart depicts the difference in two teams in the Playoff leg

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• Rockets outplayed Thunders comprehensively and made 3 more assists, 6 more 3-Pointers and 4 more steals in the Playoff leg.

# BALL USAGE, ASSISTS AND TURNOVERS – WHO WAS BETTER?



• James Harden in addition to top scoring also used the team plays(33%) more than anybody else in the court. He also assisted 40% of his teammates field goals while he was on field.