

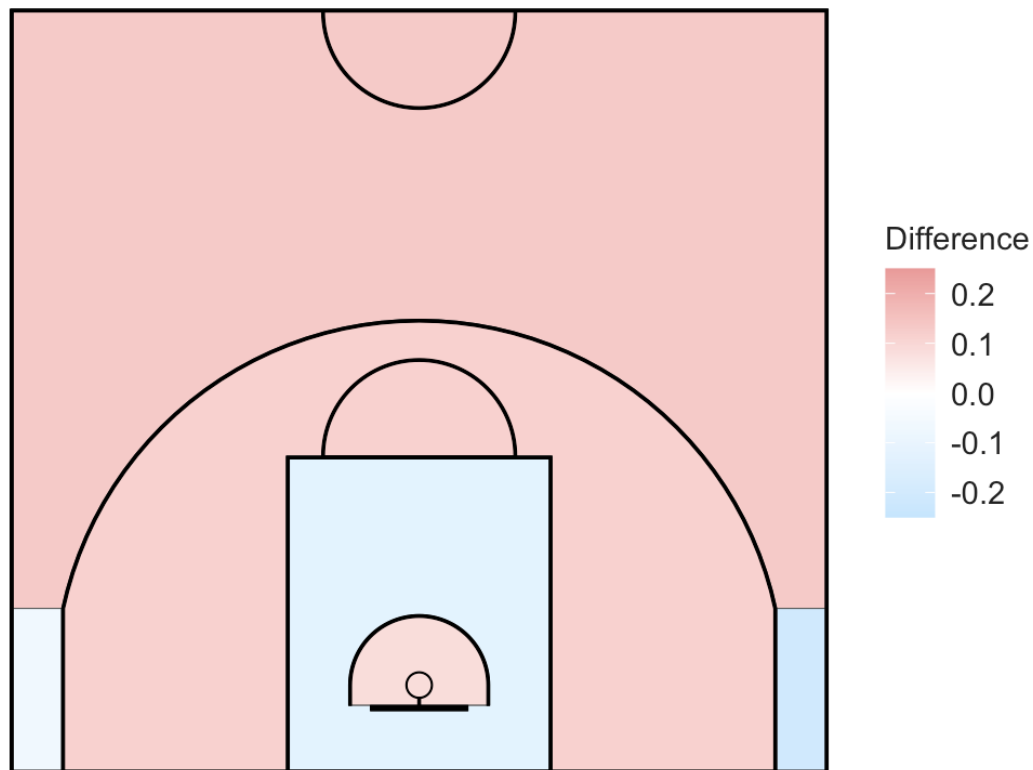
# Syracuse Basketball Analytics - Stopping the Warriors

Kevin O'Donnell, Noah Swan, Preston Powery, Nick Sofianakos, and  
Andrew Daly

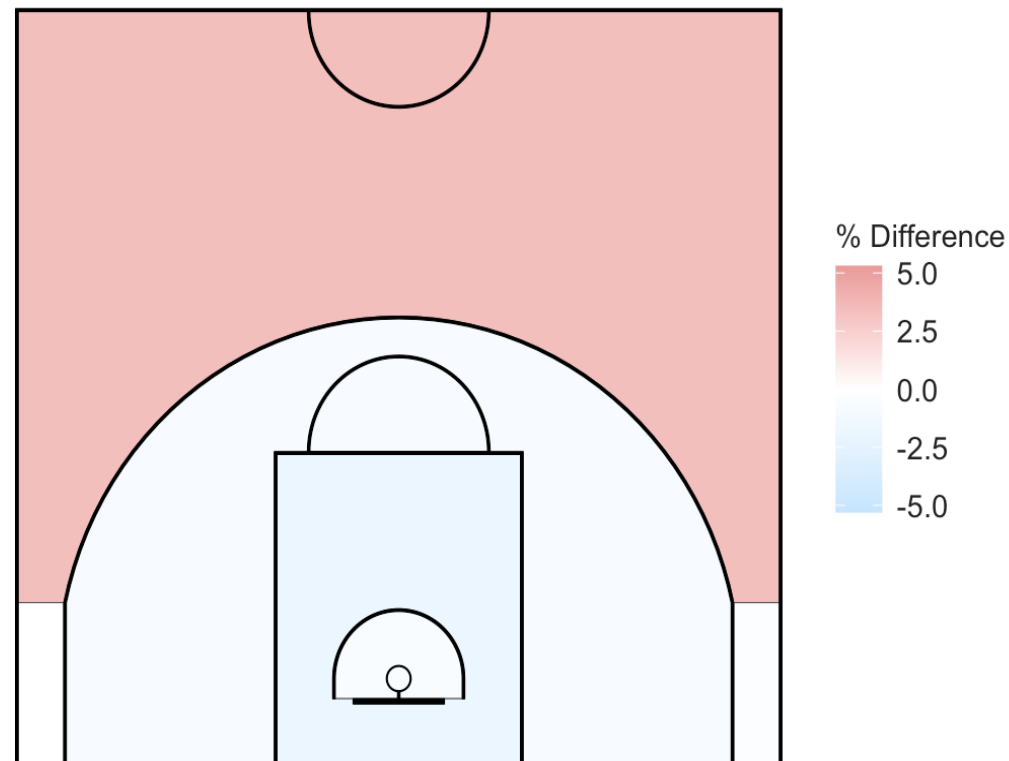
Villanova Sports Analytics Club

# Warriors' Offensive Tendencies

Difference in Points Per Attempt in Each Shot Zone  
GSW vs Opponents



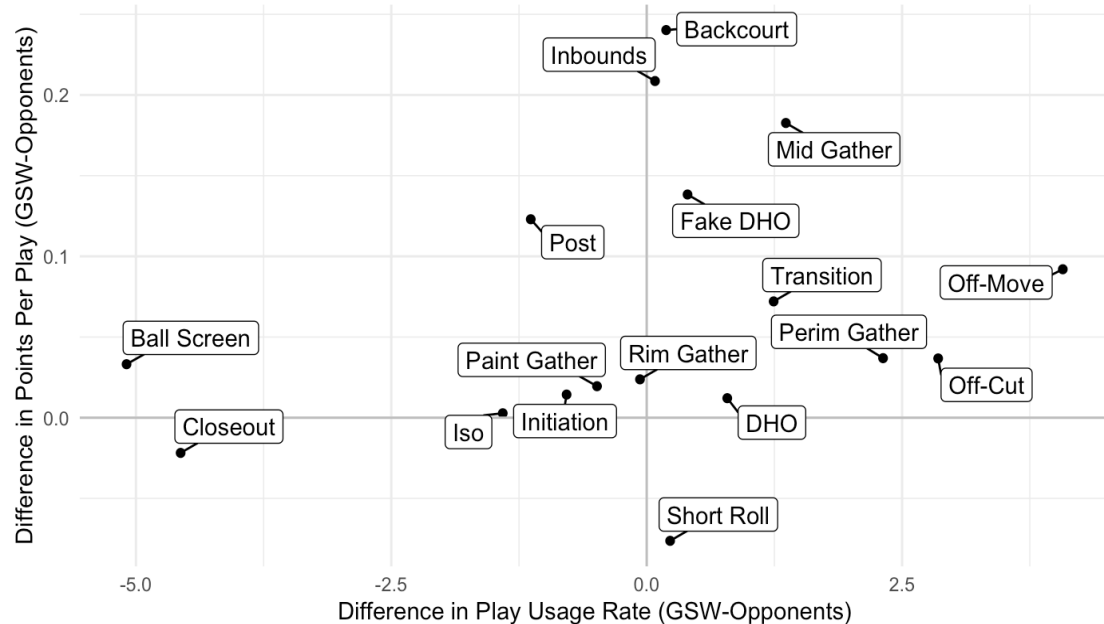
Difference in the Proportion of Shots Taken in Each Shot Zone  
GSW vs Opponents



# Warriors' Offensive Tendencies

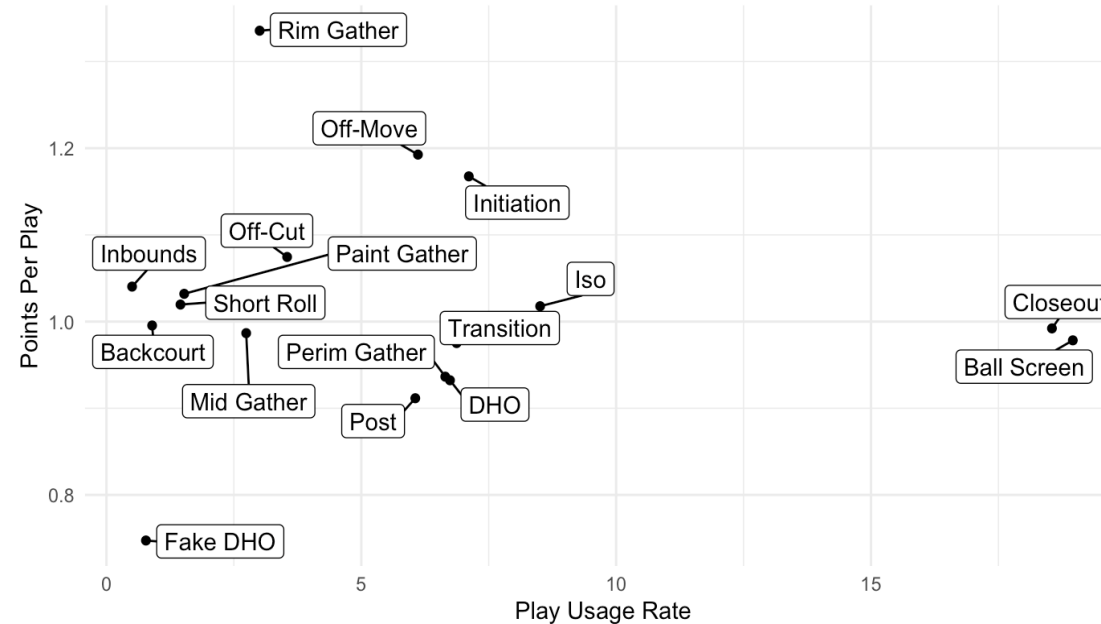
Difference in Play Selection and Success

GSW vs Opponents

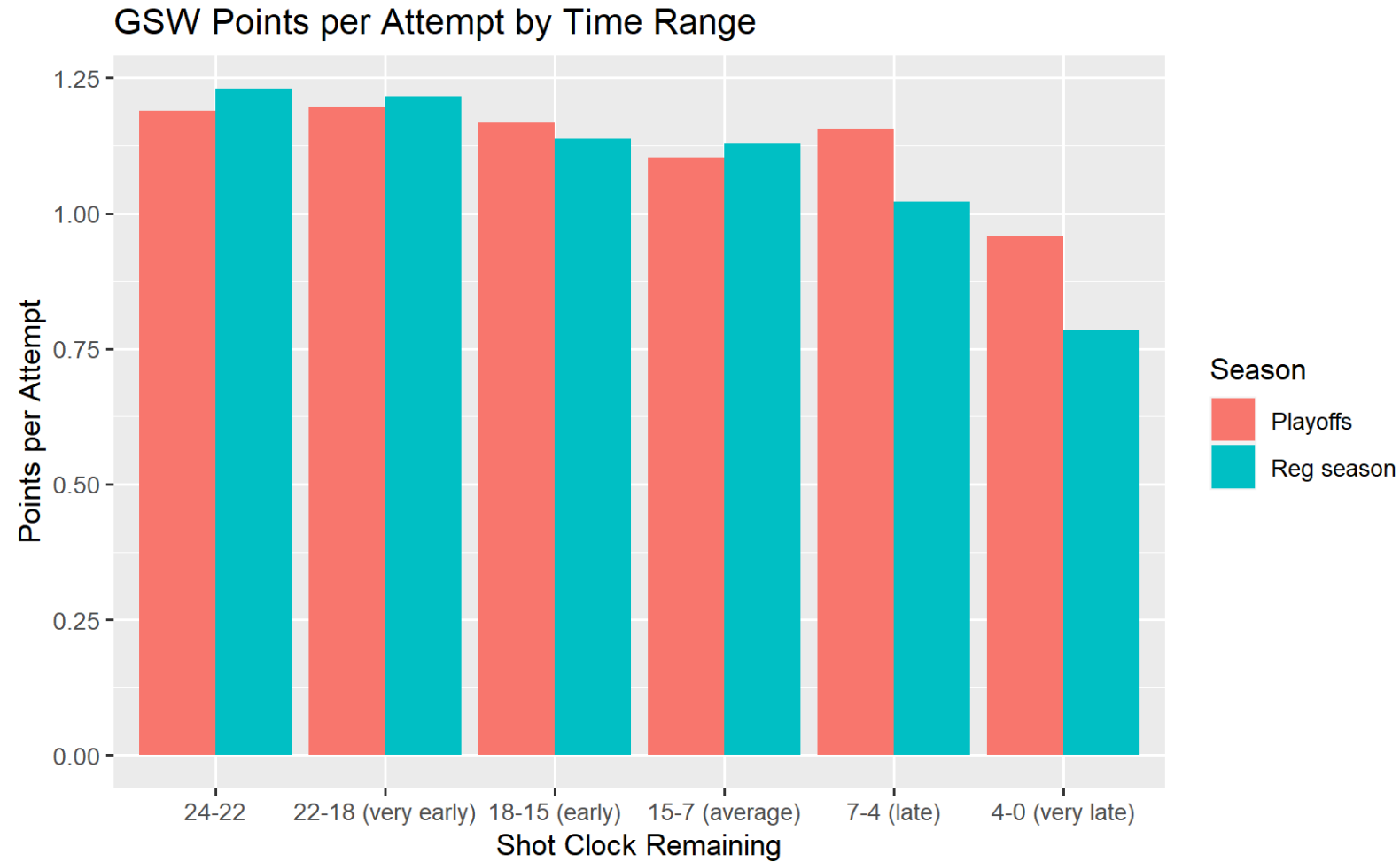


Play Selection and Success

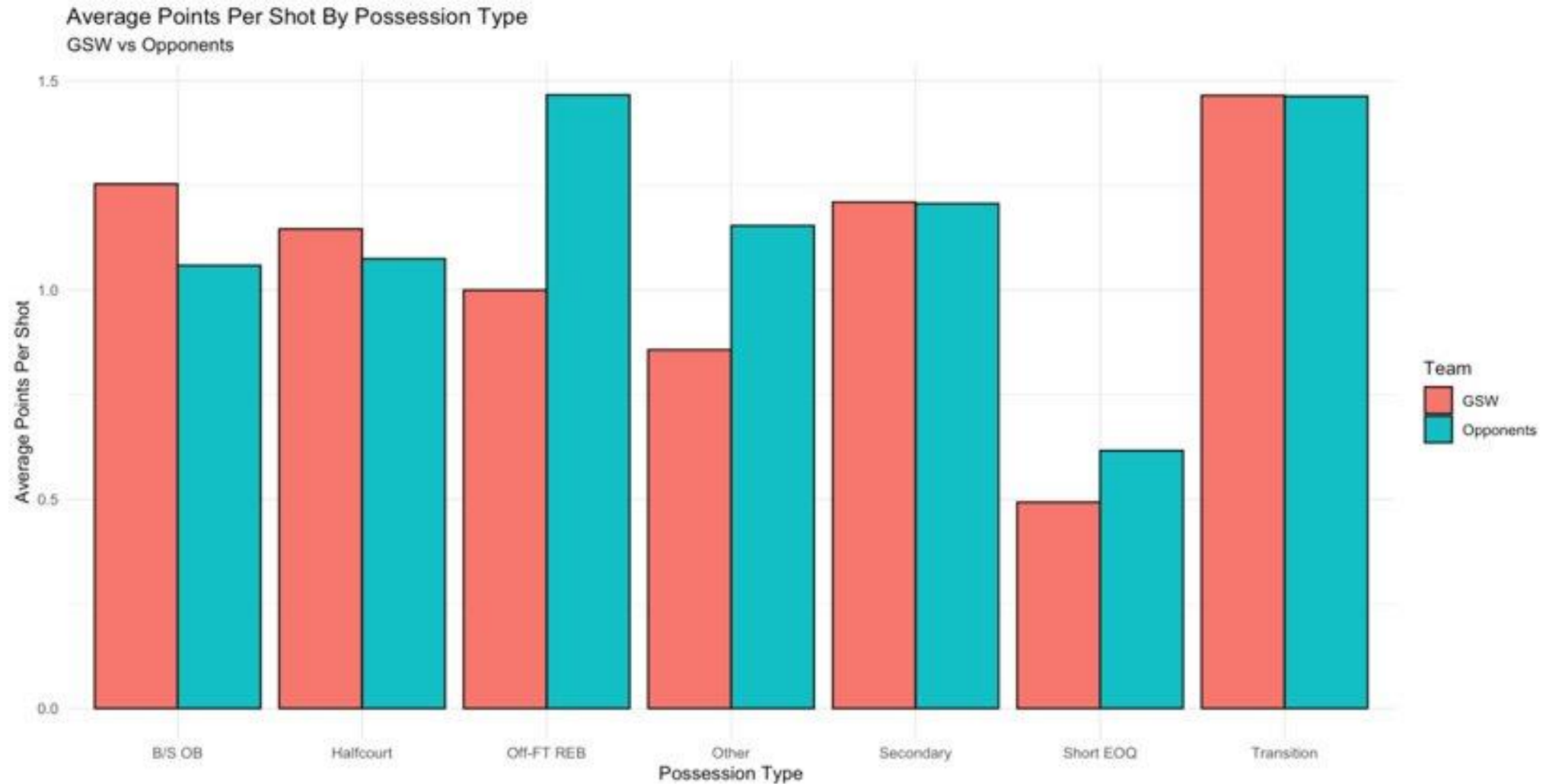
GSW



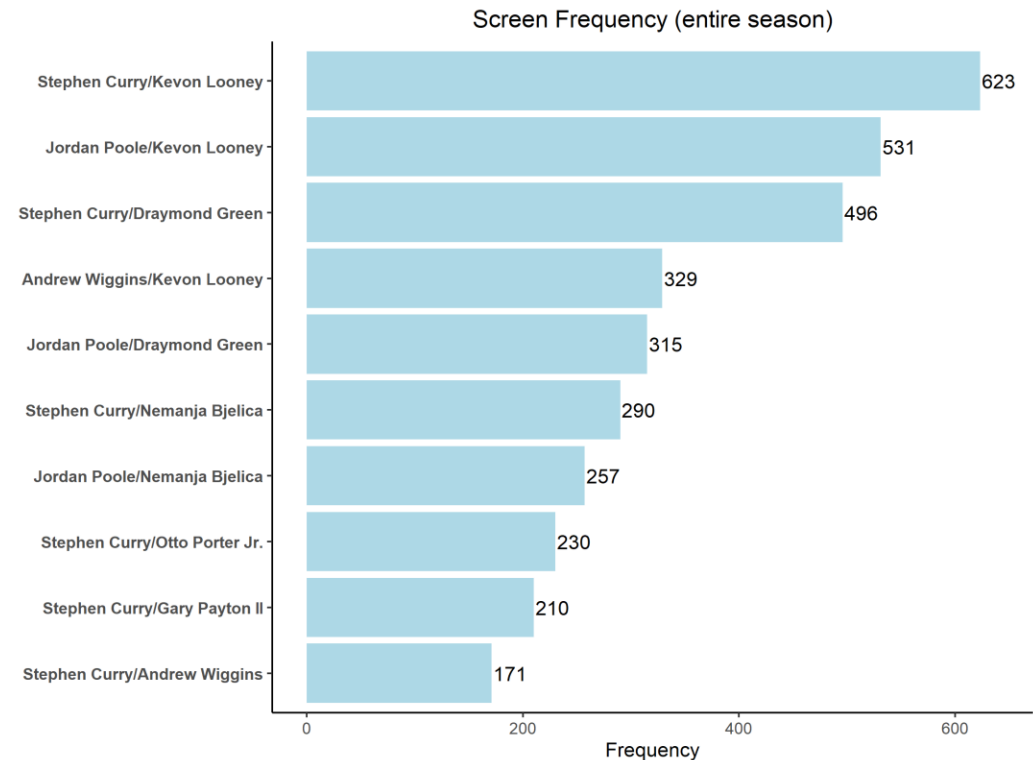
# Most Effective Offensive Strategies



# Most Effective Offensive Strategies



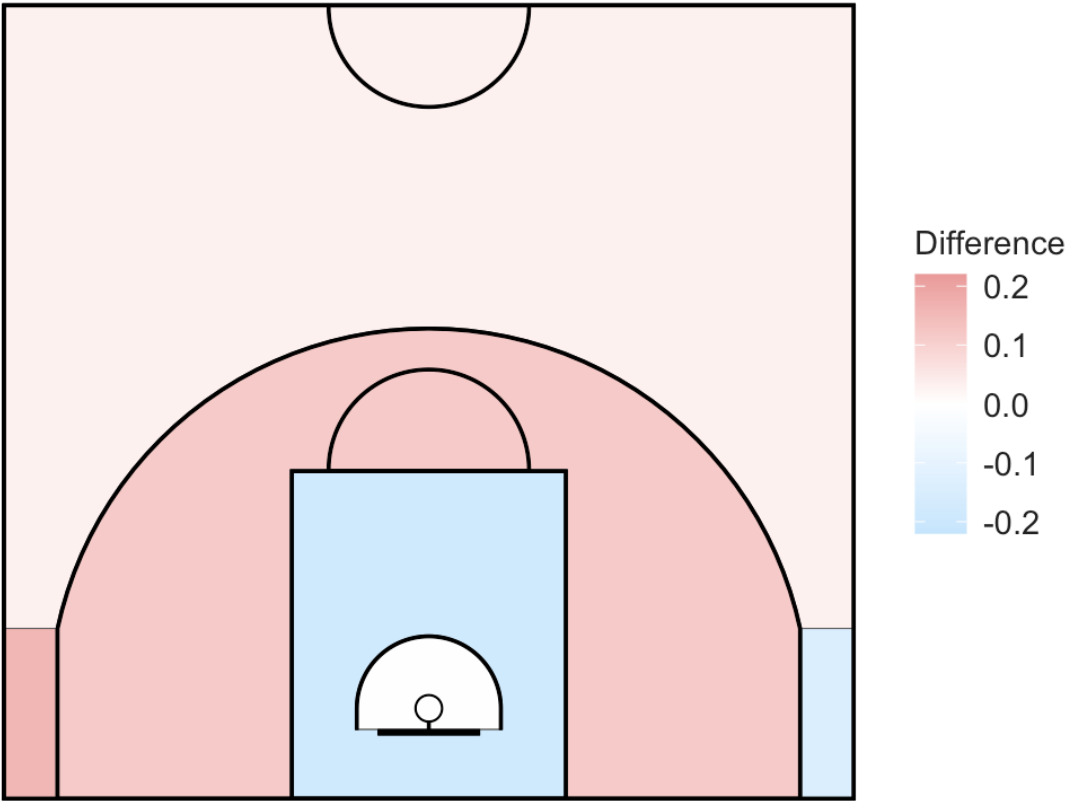
# Screen Efficiency



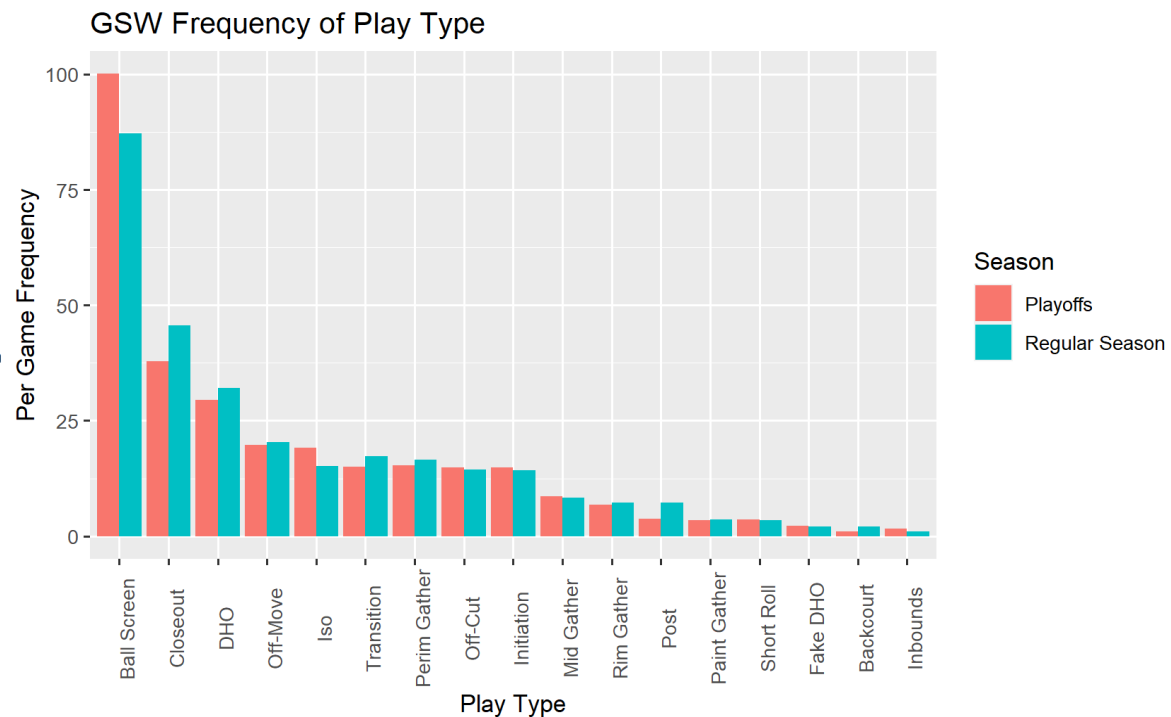
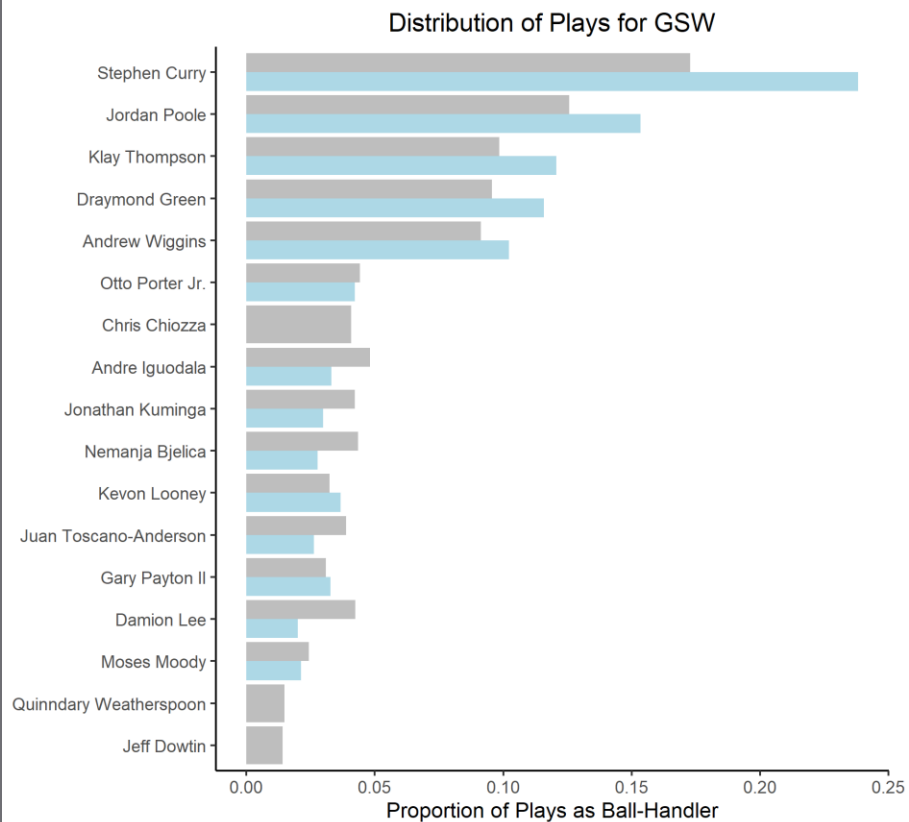
Ball-Handler<chr>	Screener<chr>	Frequency<int>	Frequency with Shot<int>	Points Per Attempt<dbl>
Stephen Curry	Andre Iguodala	101	26	1.2307692
Klay Thompson	Kevon Looney	84	27	1.1851852
Stephen Curry	Juan Toscano-Anderson	144	36	1.1666667
Stephen Curry	Jonathan Kuminga	144	35	1.0000000
Jordan Poole	Kevon Looney	531	145	0.9793103
Andrew Wiggins	Draymond Green	115	37	0.9729730
Stephen Curry	Nemanja Bjelica	290	61	0.9672131
Andrew Wiggins	Stephen Curry	88	23	0.9565217
Stephen Curry	Draymond Green	496	136	0.9485294
Stephen Curry	Andrew Wiggins	171	35	0.9142857

# Improvement in Playoffs

Differences in Points Per Attempt in Each Shot Zone  
Playoffs vs Regular Season



Season Type	Points Per Shot	Offensive Rating	Defensive Rating	TS%
Regular Season	1.17	112.1	106.6	58.2
Playoffs	1.18	114.5	109.6	59.0



# Improvement in Playoffs: Why?

Play choice differences?



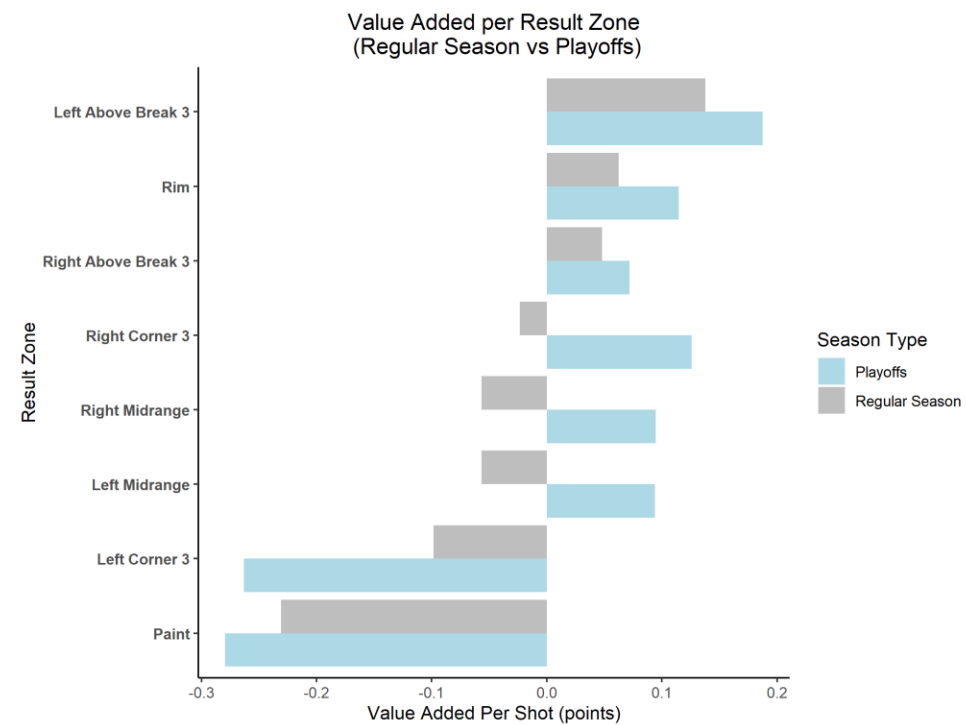
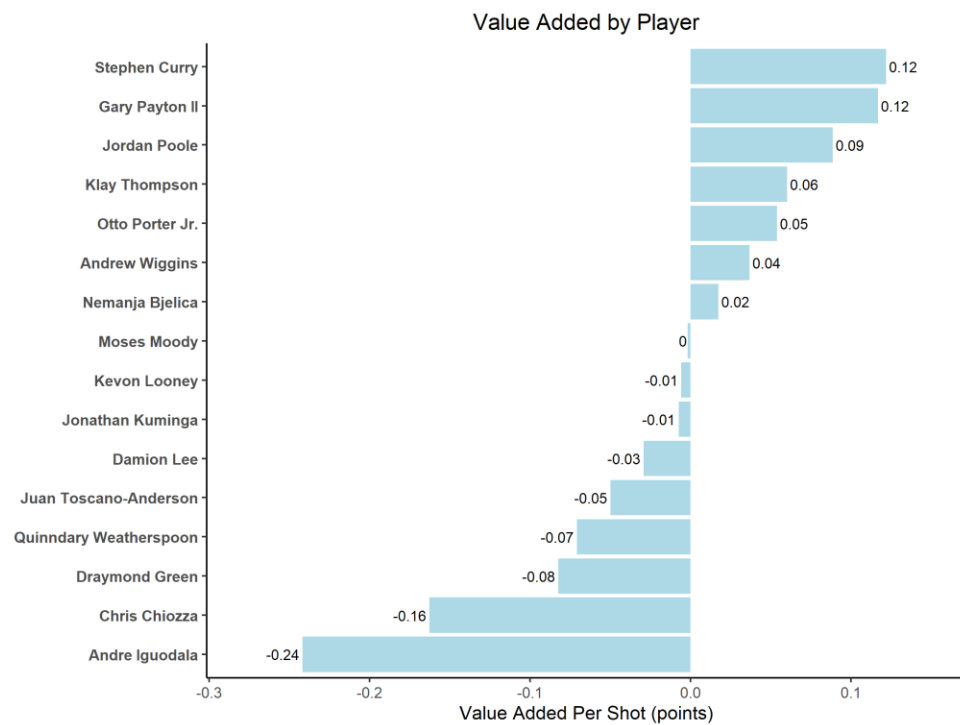
# Expected Value Framework

- Answer the question: what is the value of any given shot?
- Isolate the offensive contribution of a player considering as many external details as possible
- Model Details
  - XGBoost Model using points as the response
  - Features
    - Result context (quarter, season type, possession type, etc.)
    - Play context (play type, play zone, previous play, previous play zone)
    - Defensive context (position of defender and FG% against per the NBA)
    - Also bringing in position of offensive player, league average FG% from the result zone

# Model Results

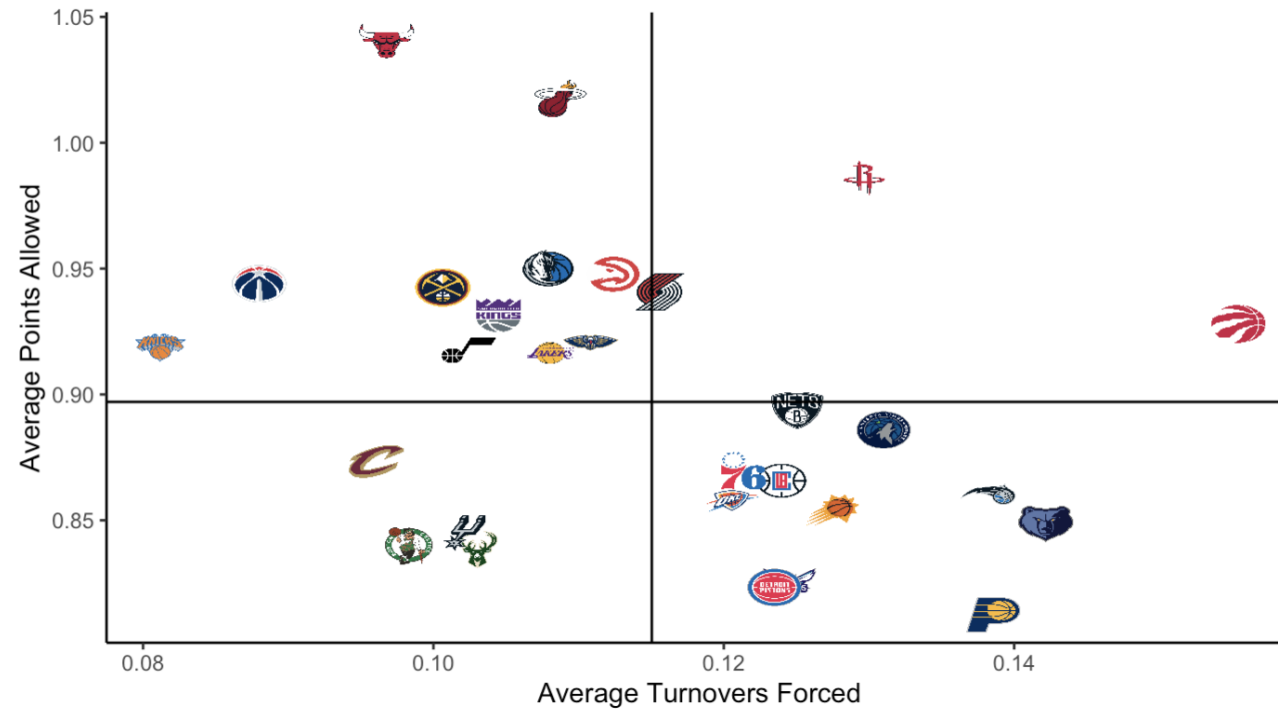
- 8094 observations, 24 total features
- Three-fold cross validation with an 80/20 train/test split
- Test RMSE of 1.176
- Top 10 variables ranked by gain

	Overall <dbl>
result_typeDunk	0.1938789938
result_typeLayup	0.0982680070
result_contestPlus	0.0813726496
result_time	0.0621835816
result_contestOpen	0.0554895977
poss_margin	0.0465544404
result_zoneRim	0.0440181358
potential_astl	0.0408298931
result_contestAverage	0.0364439414
result_contestPoor	0.0325328966



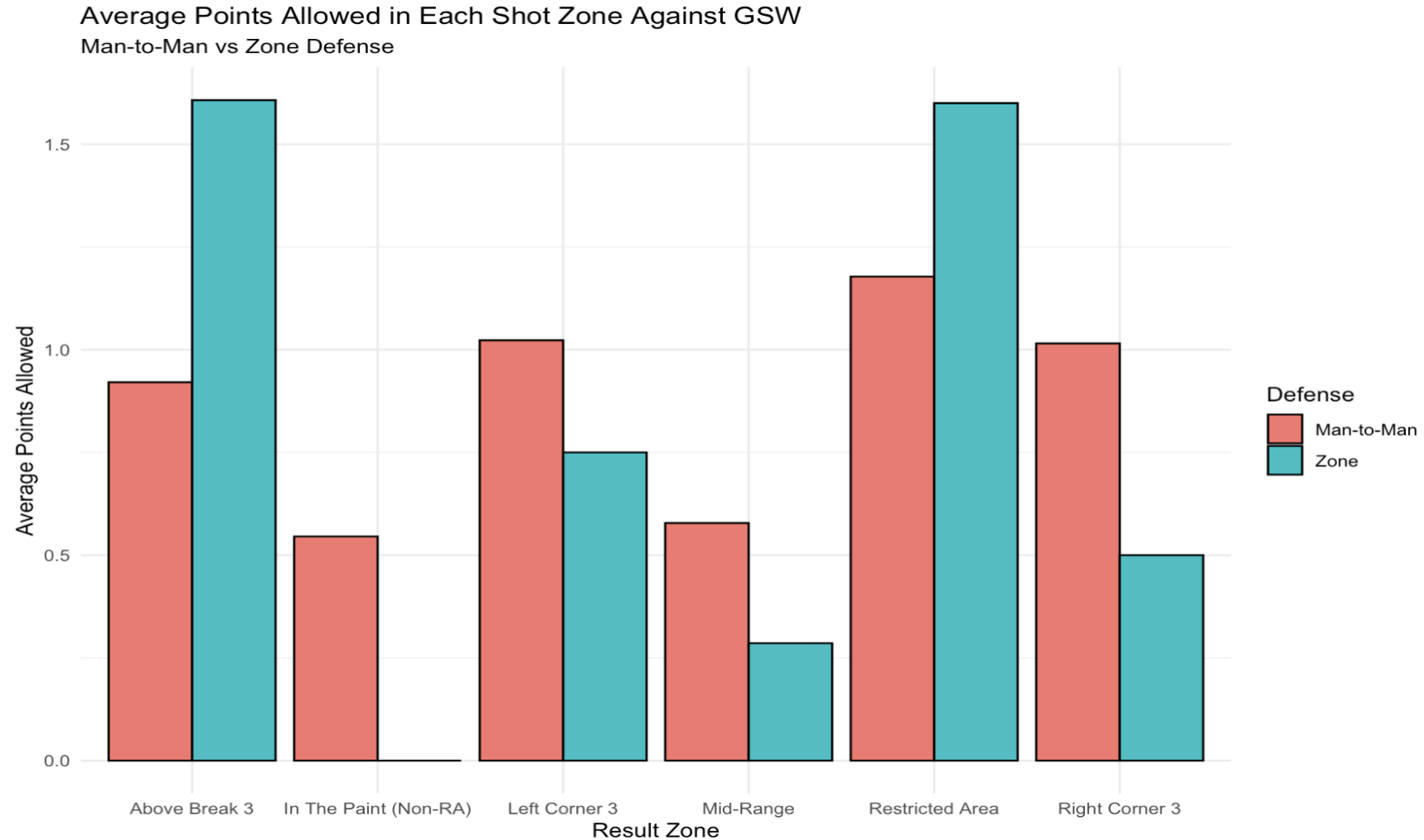
# Value Added

Which Teams Defended The Warriors Best?  
2021-22 Season



# Successful Defensive Strategies

# Successful Defensive Strategies



# Scouting Reports



**Stephen Curry**

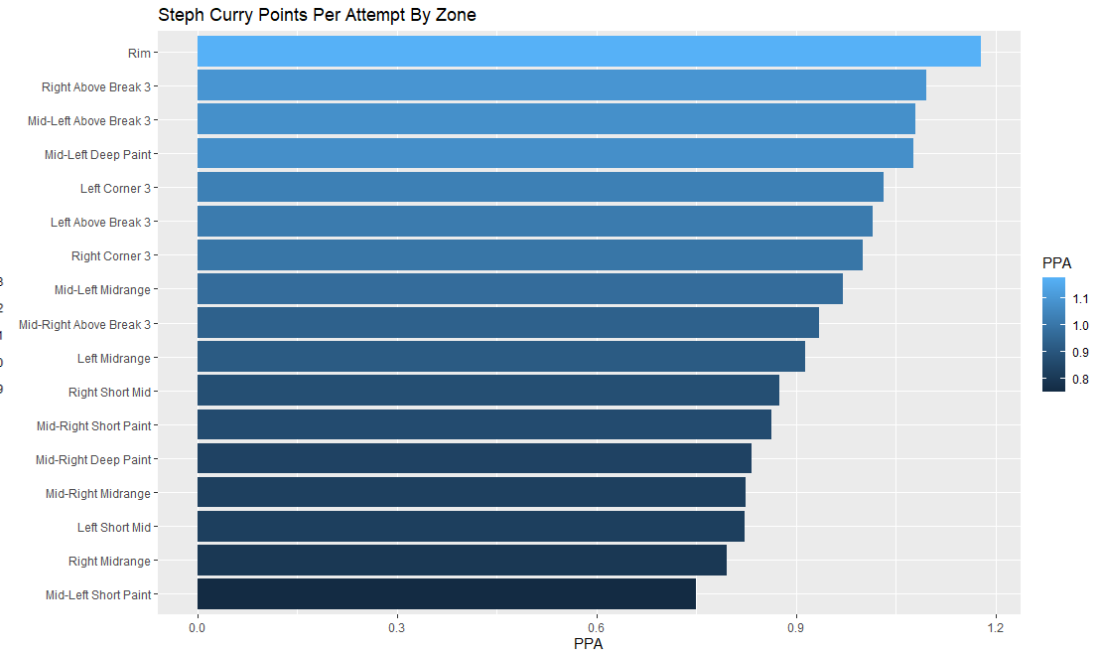
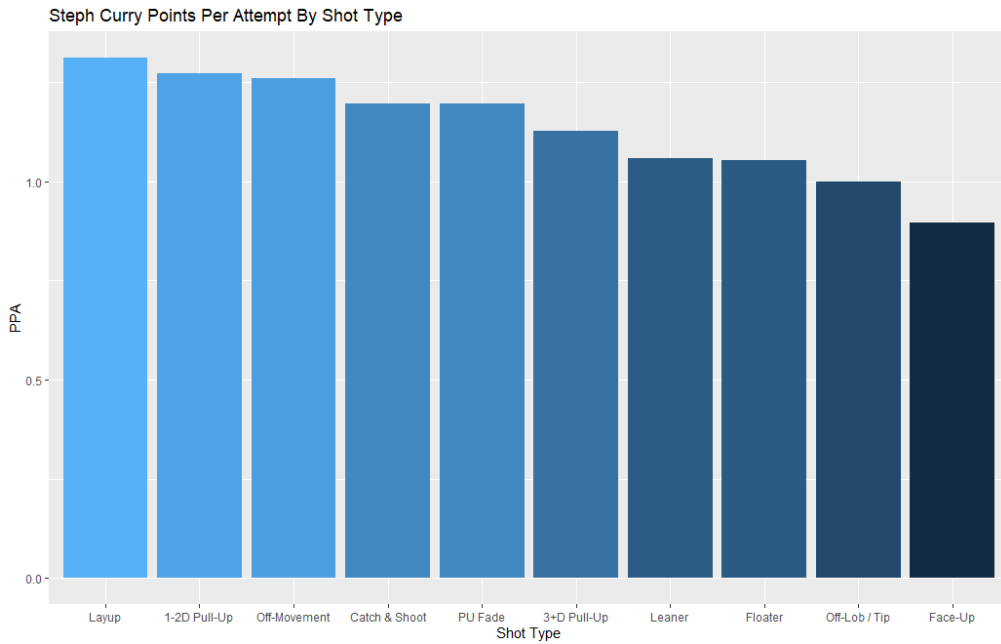


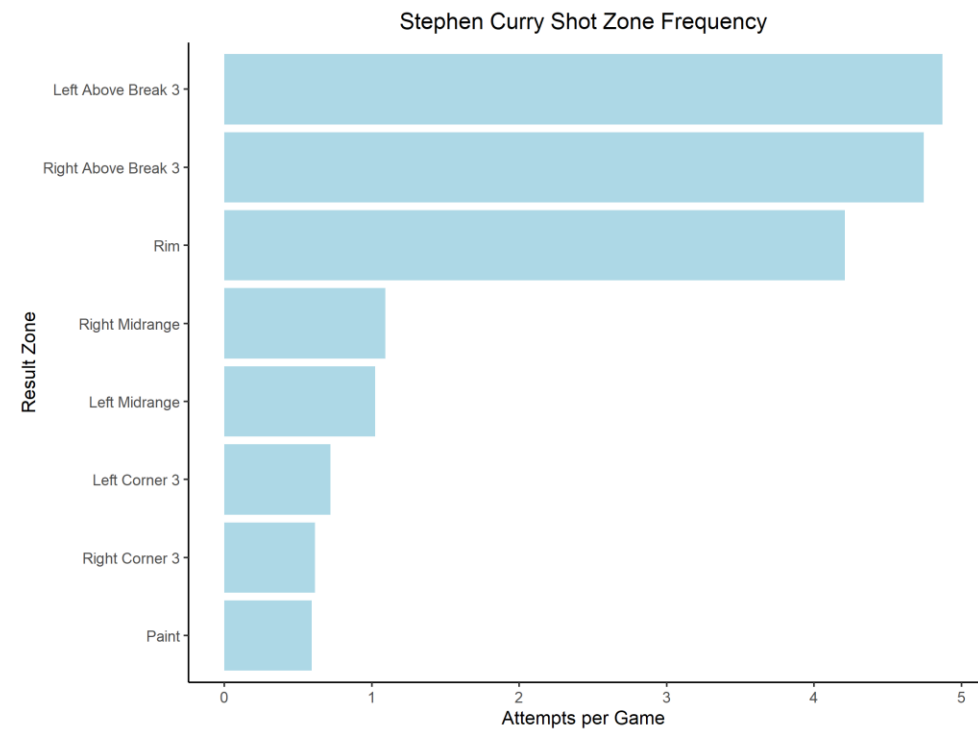
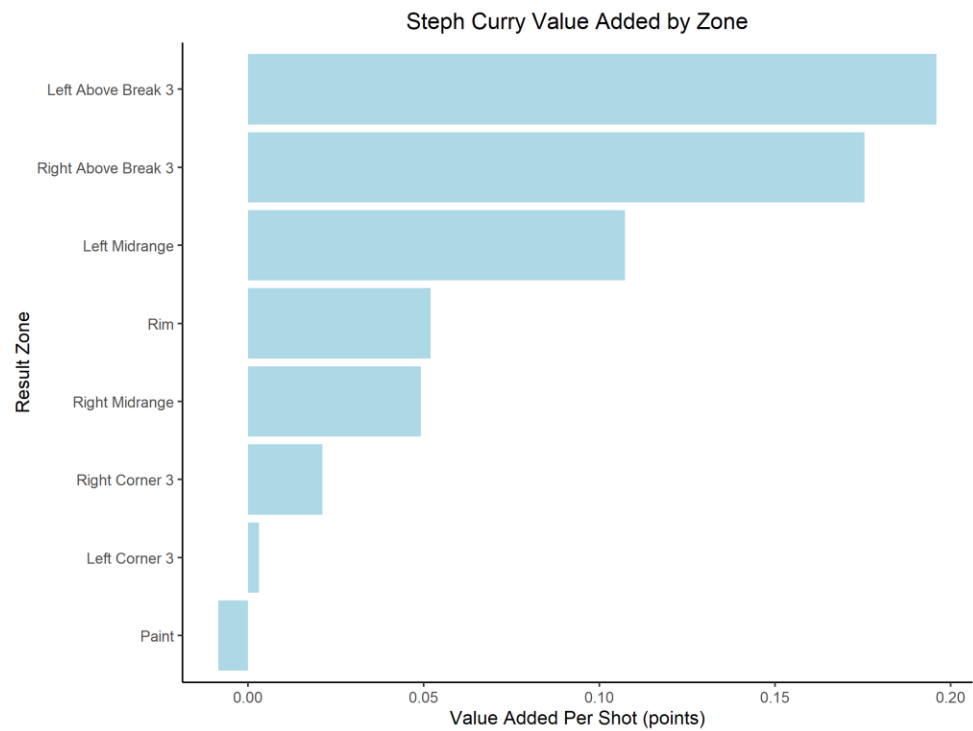
**Andrew Wiggins**



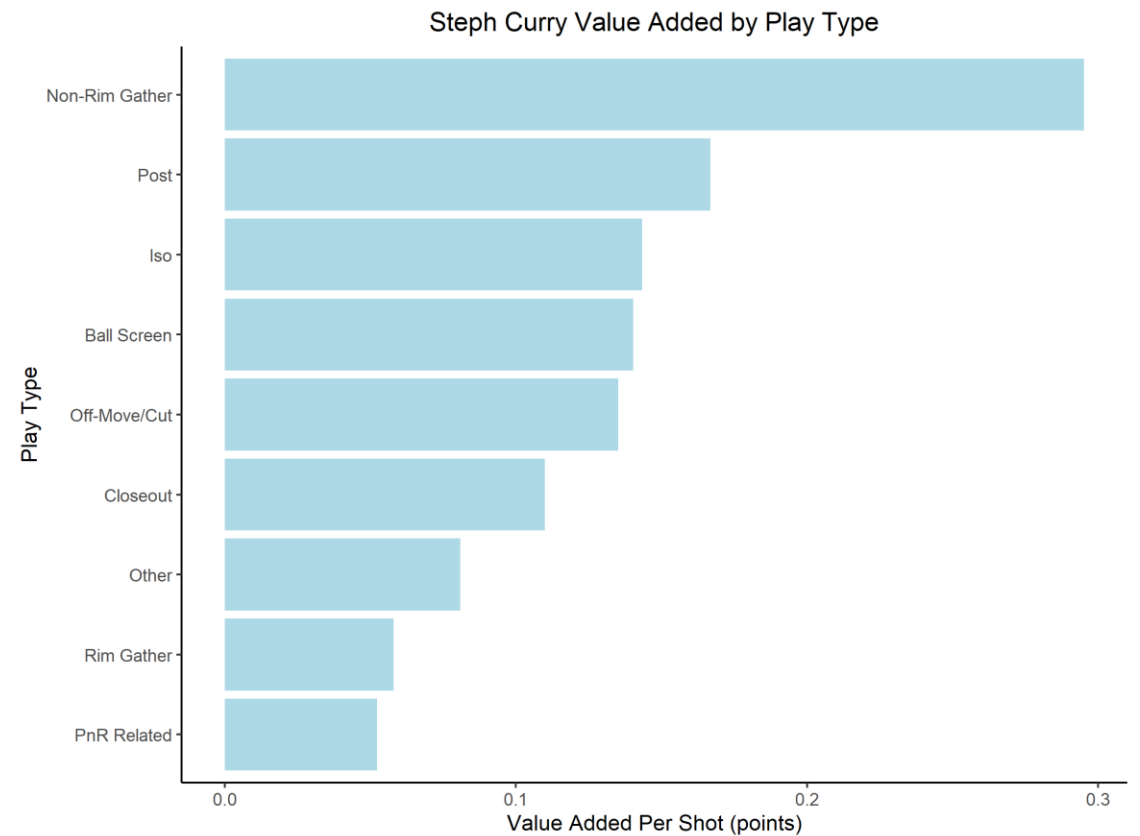
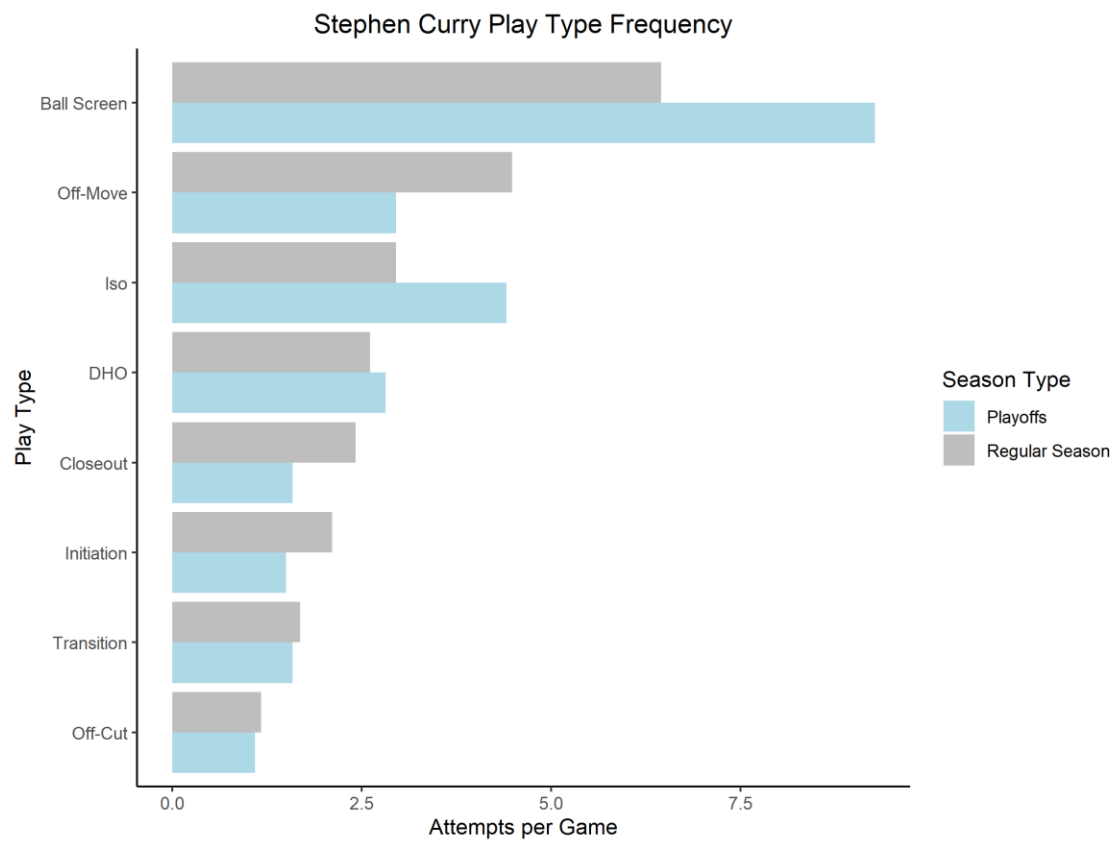
**Draymond Green**

# Scouting Report – Steph Curry

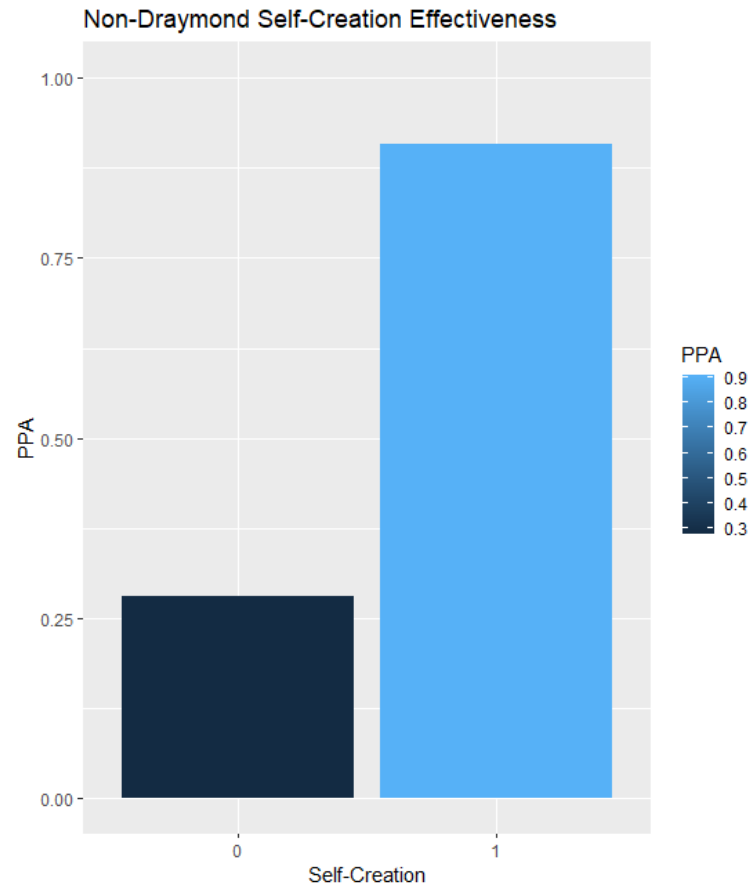
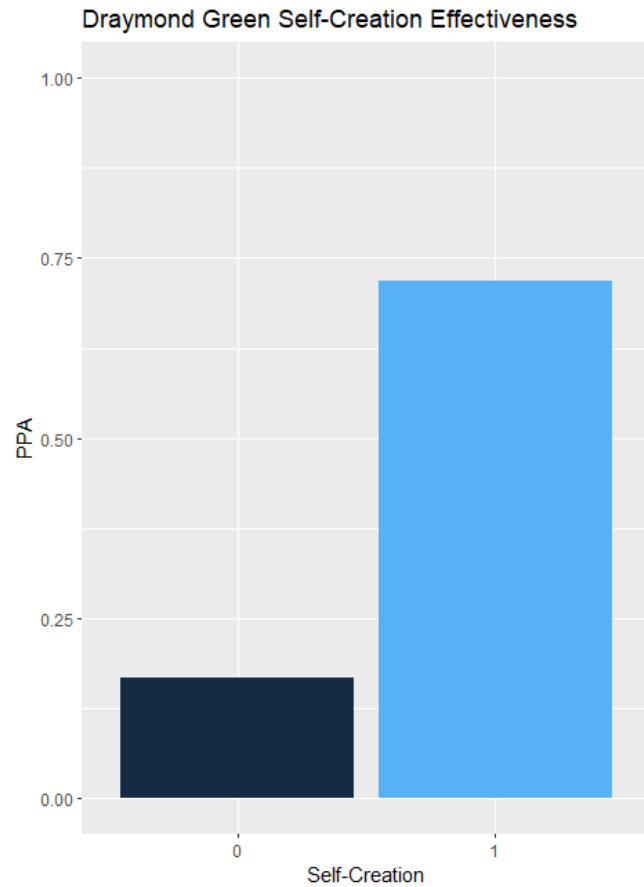


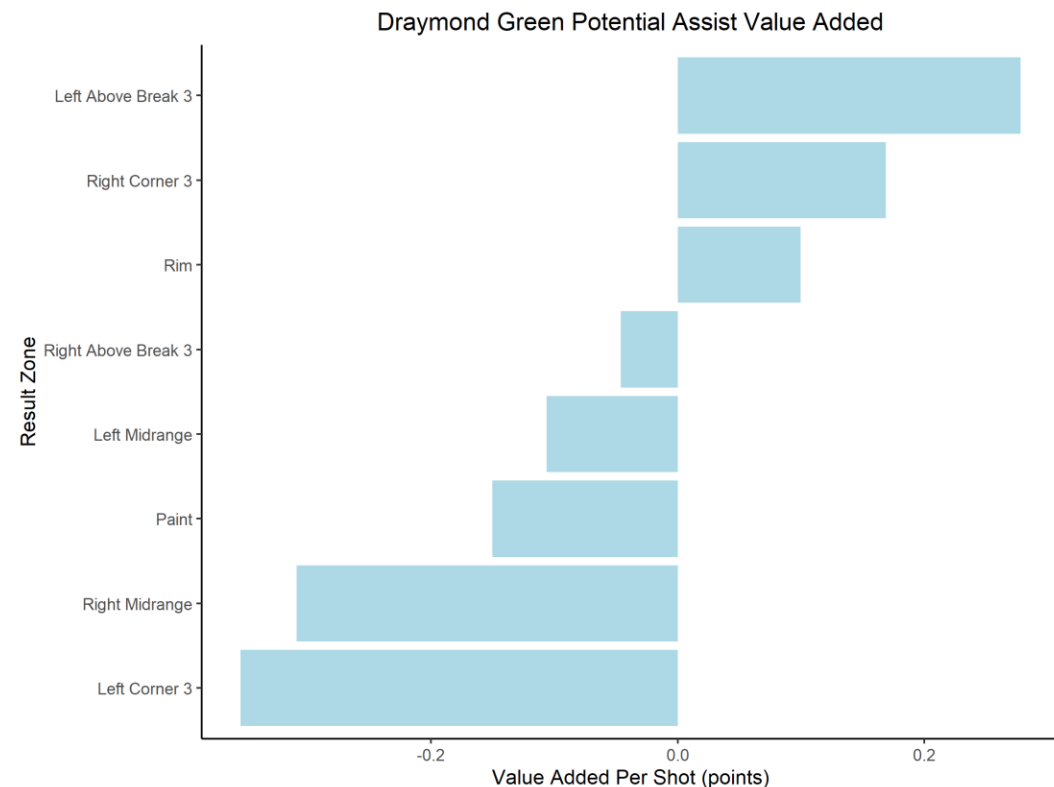
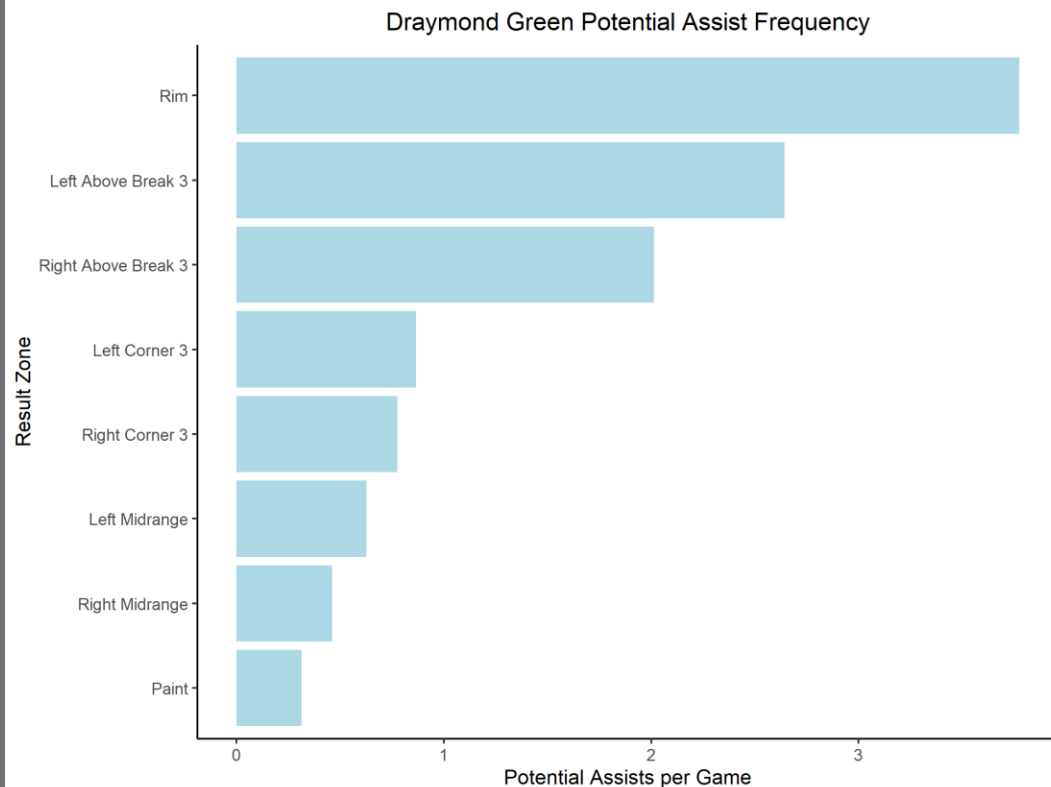






# Scouting Report – Draymond Green





Ball-Handler<chr>	Screener<chr>	Play Zone<chr>	Frequency<int>
Stephen Curry	Draymond Green	Short Backcourt	206
Stephen Curry	Draymond Green	Mid-Left Above Break 3	187
Stephen Curry	Draymond Green	Mid-Right Above Break 3	148
Jordan Poole	Draymond Green	Mid-Left Above Break 3	147
Jordan Poole	Draymond Green	Mid-Right Above Break 3	118
Jordan Poole	Draymond Green	Short Backcourt	115
Stephen Curry	Draymond Green	Left Above Break 3	98
Stephen Curry	Draymond Green	Right Above Break 3	77
Stephen Curry	Draymond Green	Deep Backcourt	70
Jordan Poole	Draymond Green	Left Above Break 3	66

## Fake DHO

- **89** total
- **58.43%** in sequences with shots
- **1.25** expected points per shot

## Short Roll

- **162** total
- **76.19%** in sequences with shots
- **1.24** expected points per shot

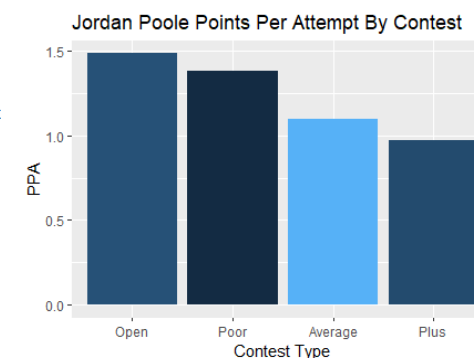
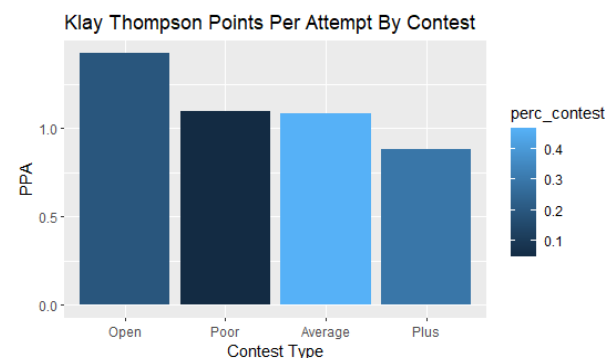
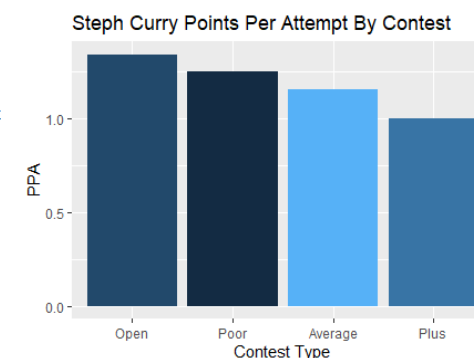
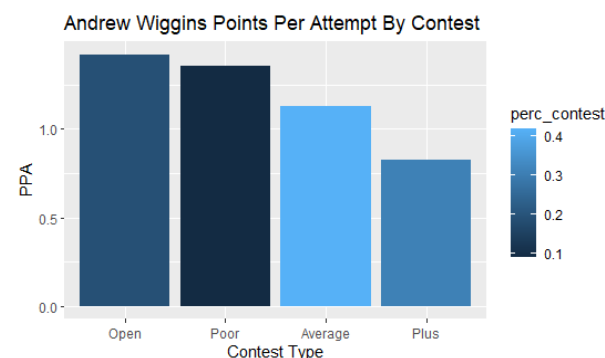
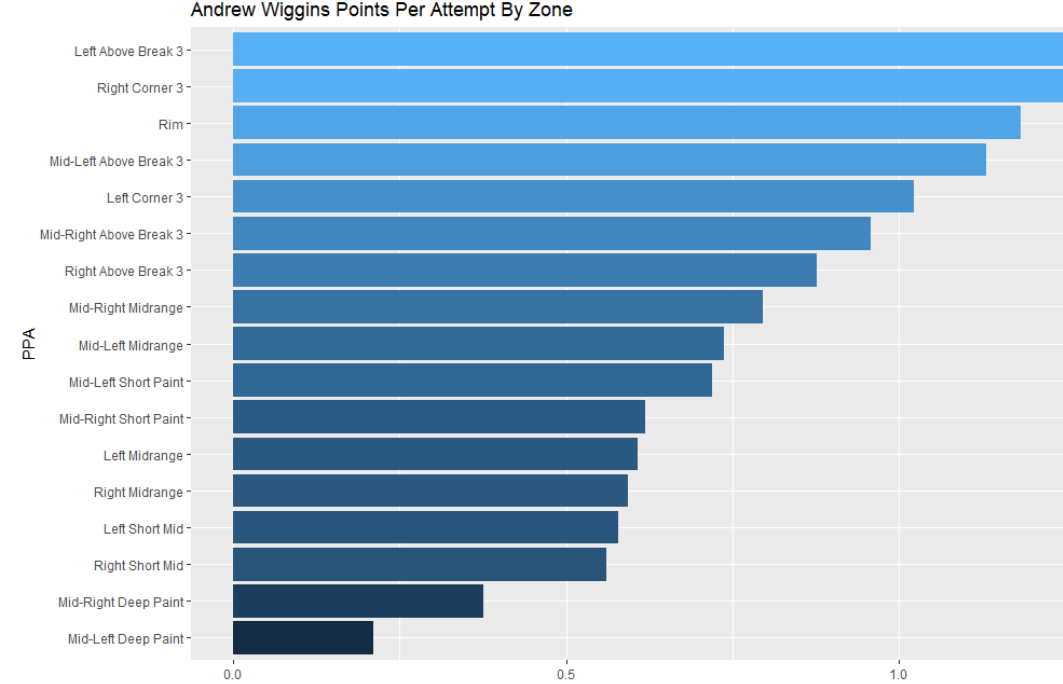
## DHO

- **396** total
- **1.77%** in sequences with shots
- **1.06** expected points per shot

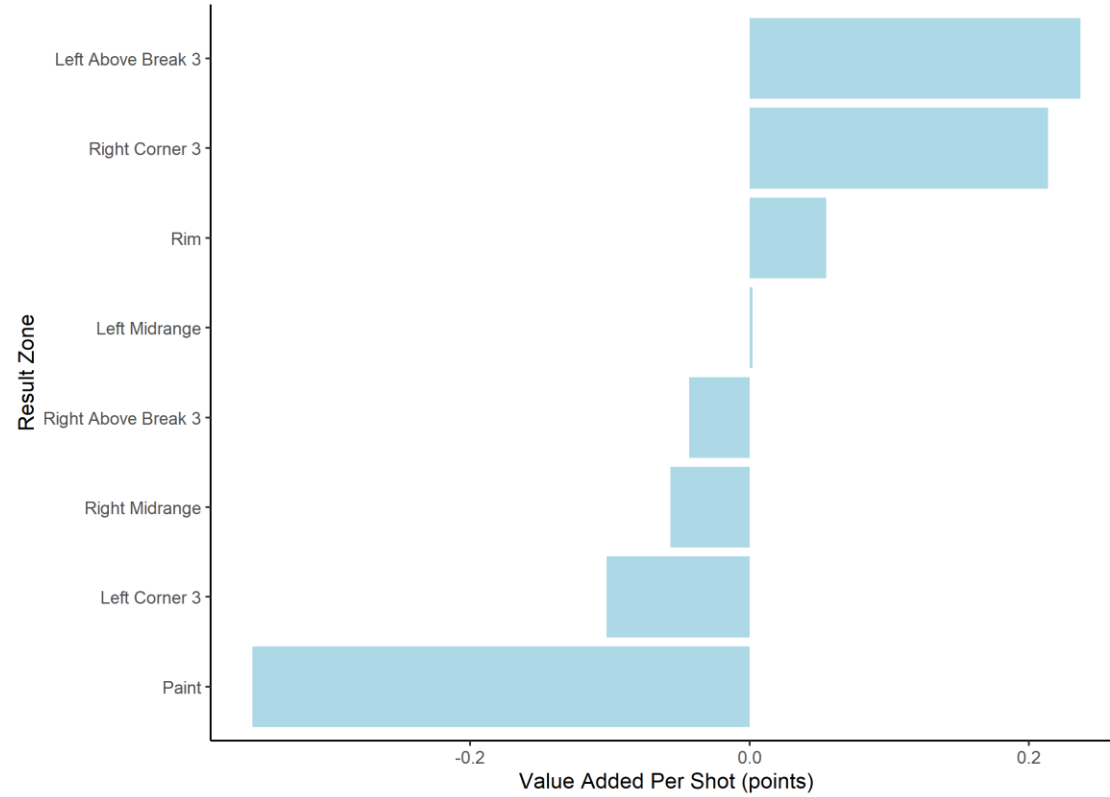
# Draymond in Non-Screen Actions

# Scouting Report – Andrew Wiggins

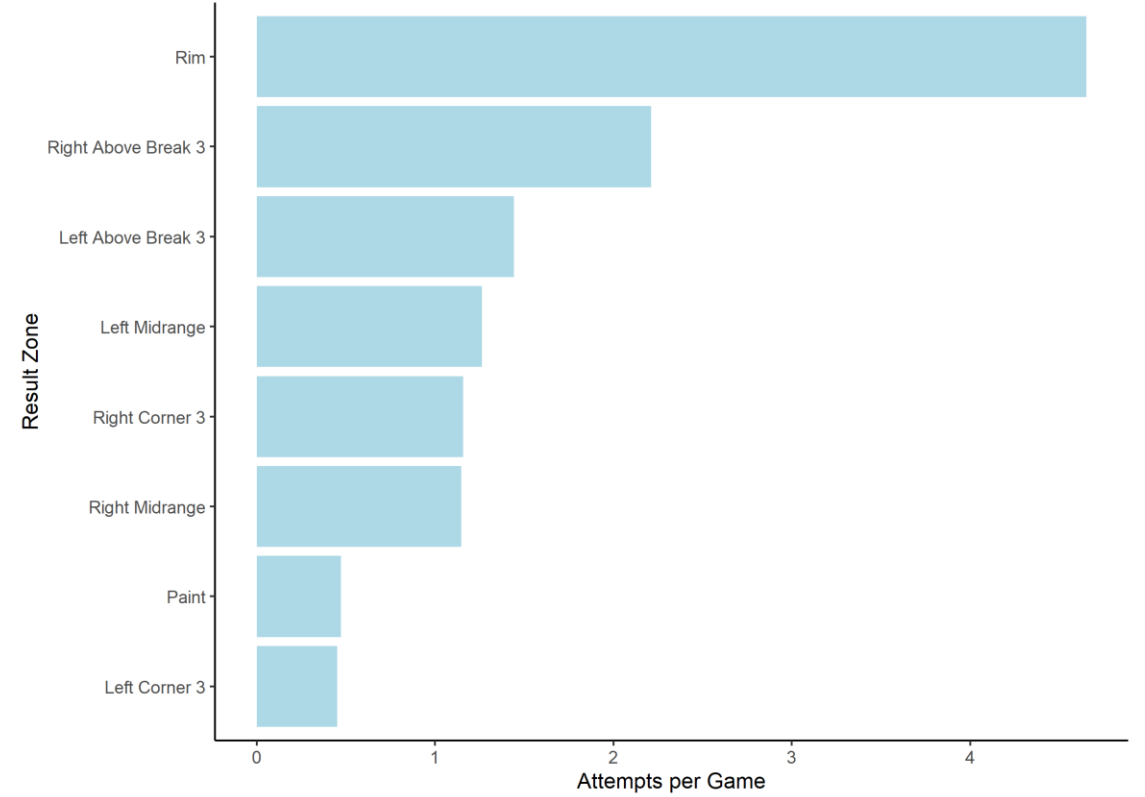
- 7 highest PPA by Zone were three pointers and at the rim
- Not as effective when taking midrange shots that he creates for himself
- PPA against "Plus" contest much lower than other three players
- More efficient on "Open" and "Poor" contests than Steph & Klay
  - Cannot leave him wide open
  - Must take his space away and make him create for himself



Andrew Wiggins Value Added by Zone



Andrew Wiggins Shot Zone Frequency



# Defensive Game Plan

- Run them off the 3-point line
  - Emphasis on limiting above the break 3's
- Force players into the paint
  - Less efficient, and more turnovers
- Predominantly Man-to-Man
- Blitz ball screens with Curry & Poole
  - Drop coverage hurt Celtics in Finals
- Watch for Draymond Green Fake DHOs
  - Much more dangerous than DHOs