Using Team Totals to Improve Fantasy Football Player Selection

The Problem

Currently the fantasy football marketplace is flooded with opinions that have not been rigorously examined. Many people prognosticate on who are good players to select without sufficient evidence. This leads to:

- Recency Bias
- Confirmation Bias
- Anchoring Bias

As is stands right now there is much uncertainty about which variables truly impact performance.

The Decisions Facing Fantasy Football Drafters

POS	PLAYER	OPP	FPPG	SALARY
QB	L. Jackson	**BAL** @ WAS	20.1	$8,100
RB	A. Kamara	**NO** @ DET	36.6	$8,000
RB	E. Elliott	CLE @ **DAL**	22.9	$7,800
WR				
WR				
WR				
TE				
FLEX				
DST	Ravens	**BAL** @ WAS	12.3	$4,000

By the end of this we will be hoping to fill in our lineup with better than average WR and TE selections.

What are team totals (TT)?

Team	Spread	Total	Team Total
Dallas Cowboys	6	50	22
Kansas City Chiefs	-6	50	28

- Calculated before a football game takes place
- A team based metric
- Uses Las Vegas sports betting numbers to calculate

What are fantasy points (FP)?

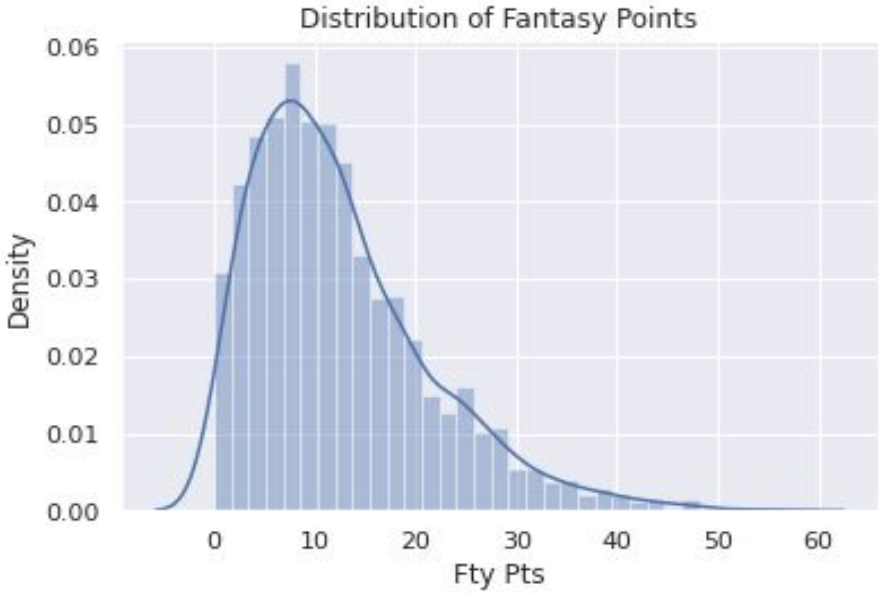
Fantasy Points = (REC * 1) + (YDS / 10) + (TD * 6) = FP

Calvin Ridley's FP = (7 * 1) + (109 / 10) + (2 * 6) = 29.9 FP

Atlanta Receiving

	REC	YDS	AVG	TD
Calvin Ridley	7	109	15.6	2
Hayden Hurst	5	72	14.4	1
Russell Gage	6	46	7.7	1
Julio Jones	2	24	12.0	0

- Calculated after a football game takes place
- A player based metric
- Converts the players statistics from a game to one number (FP)



Mean = 12.49

Min = 0

Max = 56.7

Observations = 2138

Skewness = 1.14

Kurtosis = 1.48

Team Totals Split into Groups

Control Group - a random sample taken from 20% of the dataset before the other groups were split up.

High group - all team totals >= 27 points

Above Average (AA) group - all team totals <27 and >= 23 points

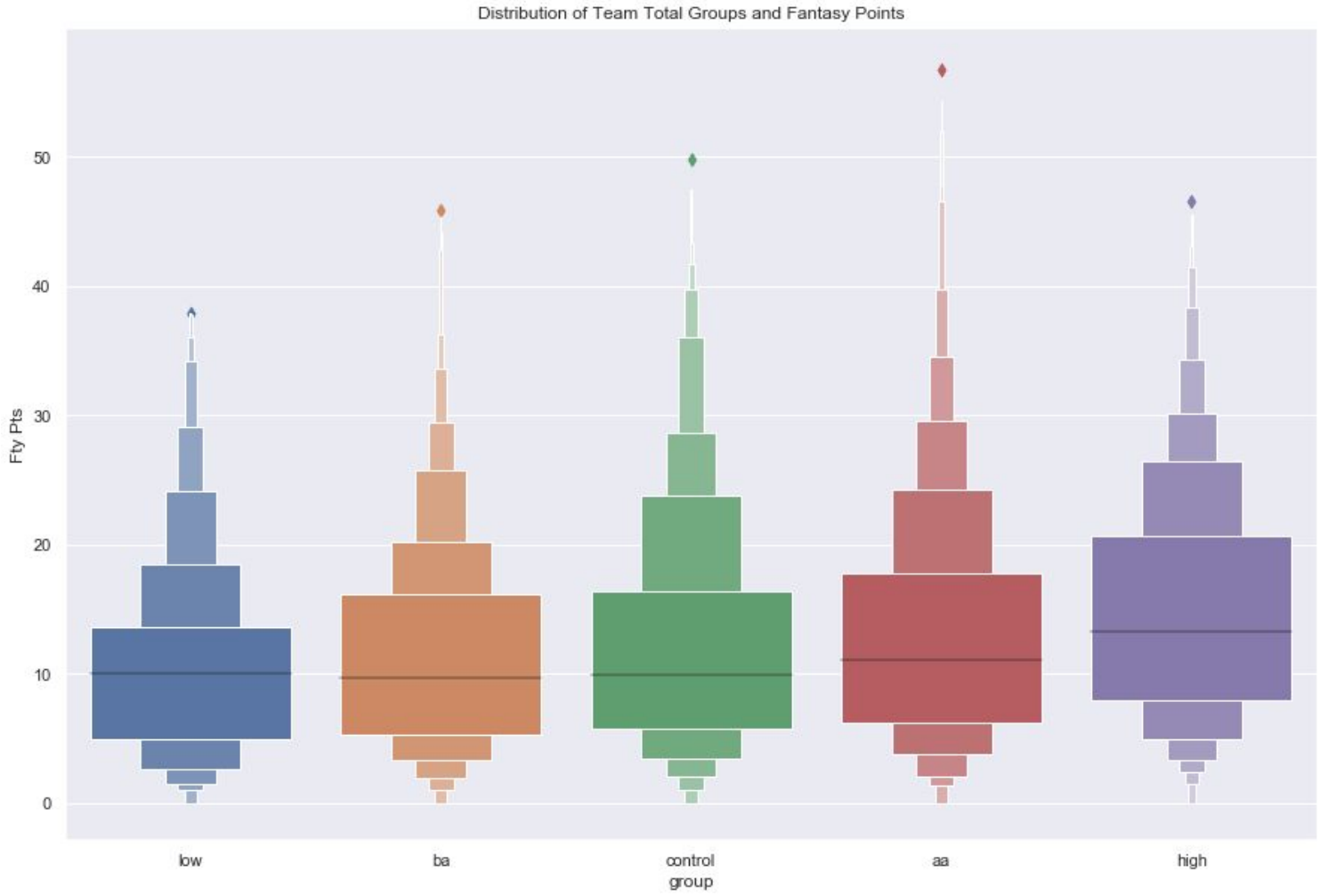
Below Average (BA) group - all team totals <23 and >= 19 points

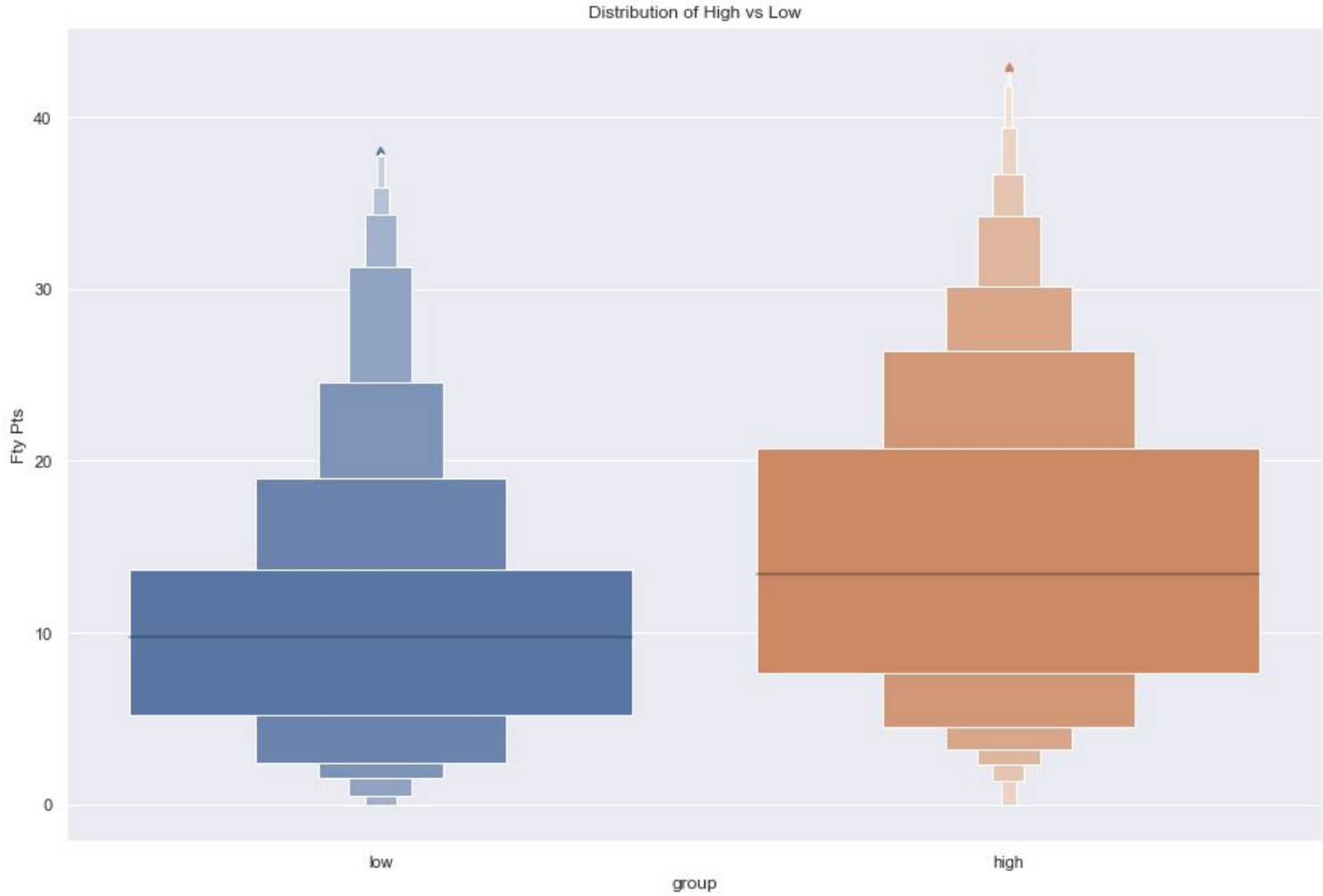
Low group - all team totals < 19 points

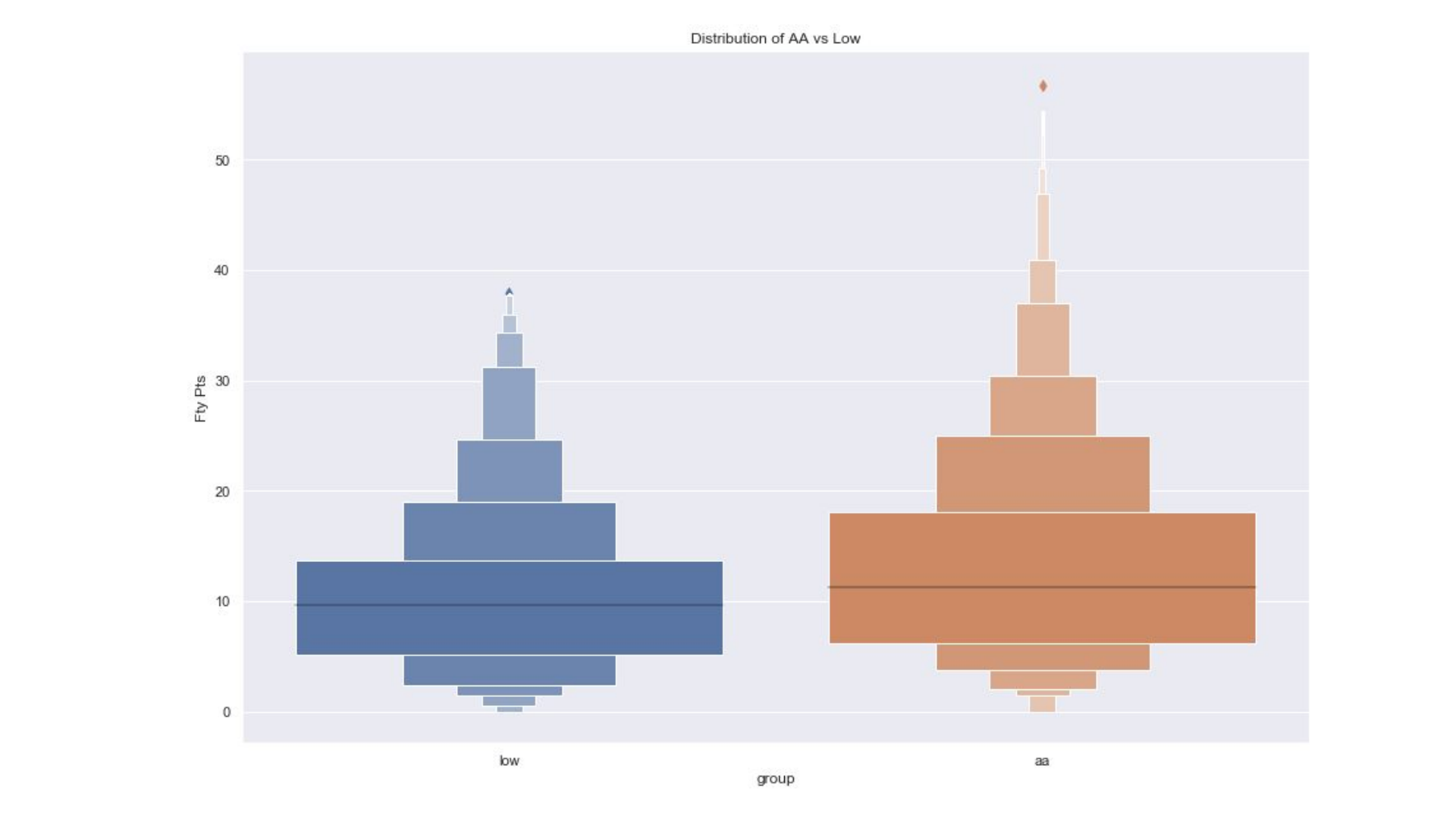
Sample Size

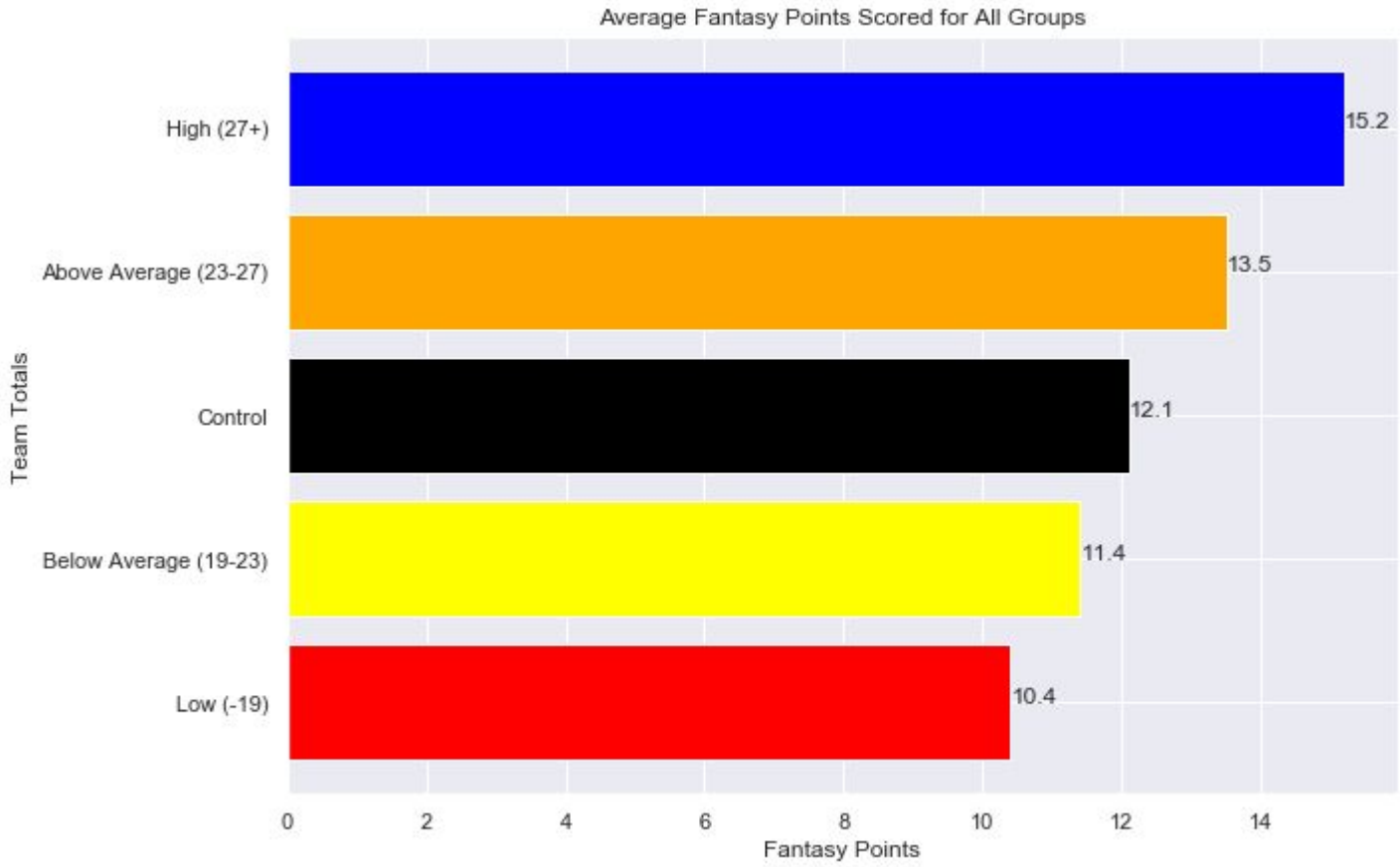
2138 football player's fantasy points were tracked from Sept 2018 - Dec 2019

Group Name	Observations
High	296
AA	597
Control	420
BA	550
Low	267


Distribution of Team Total Groups and Fantasy Points
Fty Pts
0
10
20
30
40
50
low
ba
control
aa
high
group


Distribution of High vs Low
Fty Pts
40
30
20
10
0
low
high
group


Distribution of AA vs Low
Fty Pts
50
40
30
20
10
0
low
aa
group


Average Fantasy Points Scored for All Groups
High (27+)
Above Average (23-27)
Control
Below Average (19-23)
Low (-19)
15.2
13.5
12.1
11.4
10.4
Team Totals
0
2
4
6
8
10
12
14
Fantasy Points

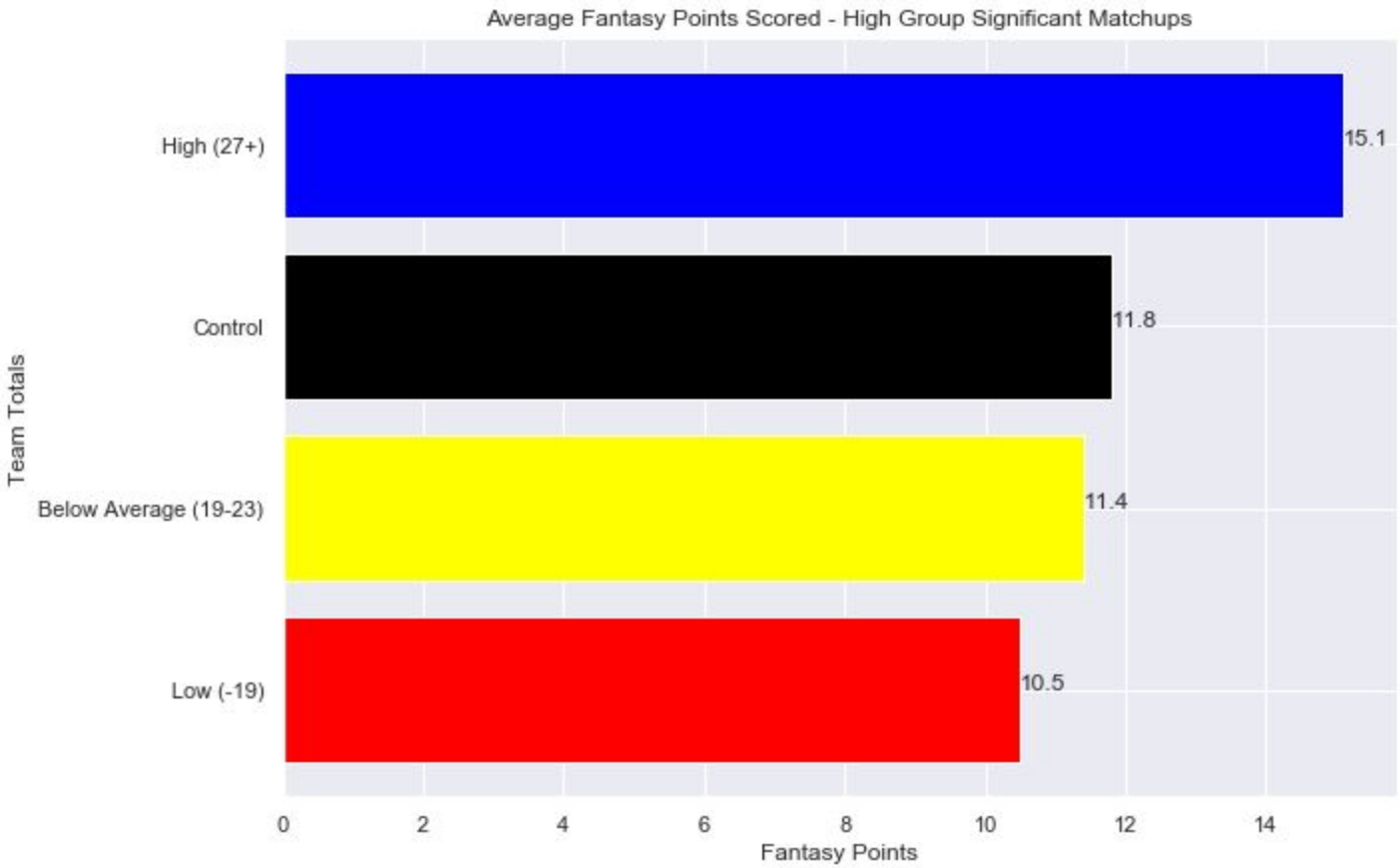
Hypothesis

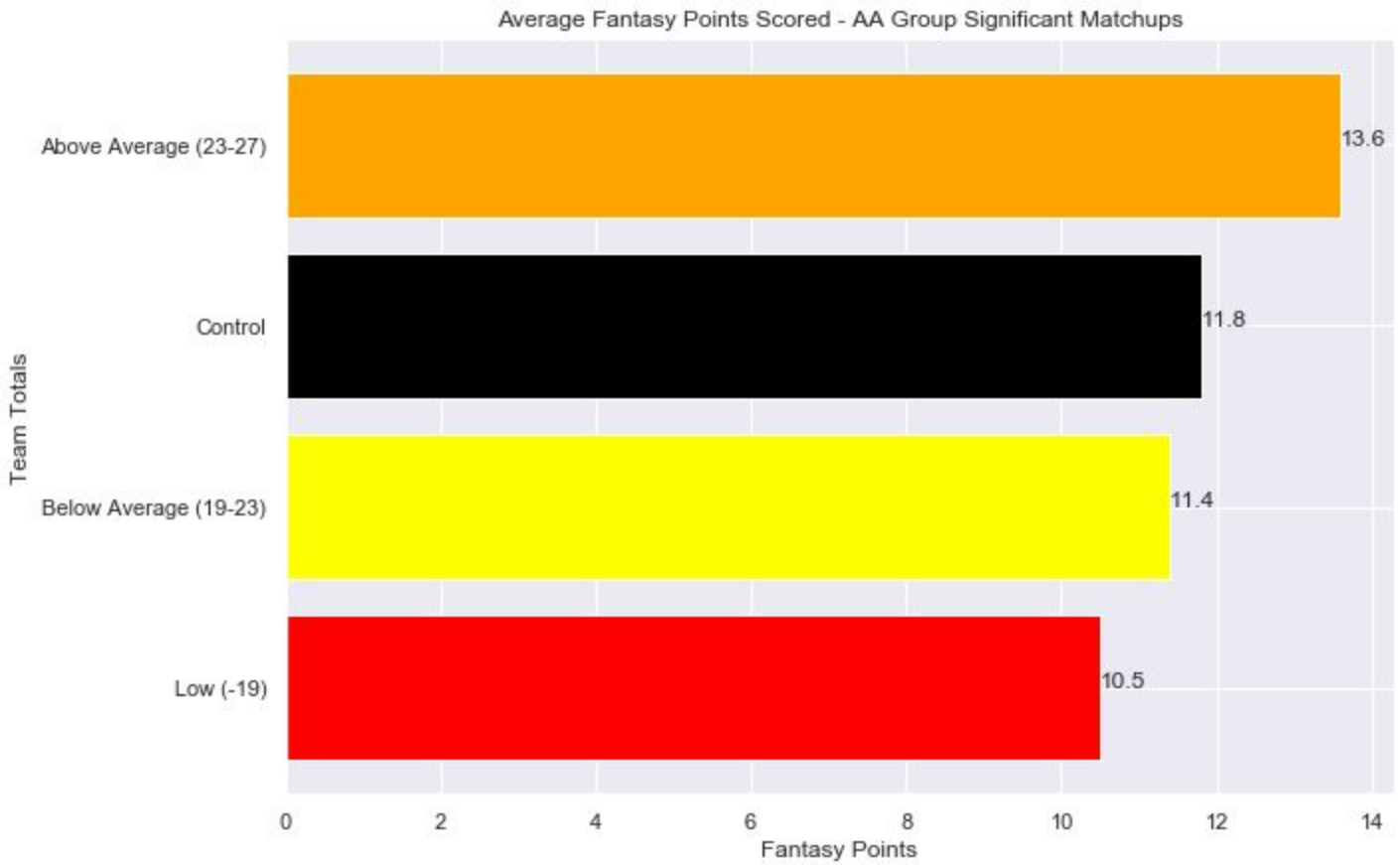
Will players from teams with higher team totals score more fantasy points on average than other groups?

If our hypothesis is true this will help us make better player selection choices in fantasy football drafts.

Significance Testing

- One-way Anova test
  - Very significant difference in group means with a p value of <0.001
- Tukey HSD test
  - High group significant vs 3 groups except vs AA group
    - All p values <0.001, except the non significant AA group pairing
  - Above Average group significant vs 3 groups except high group
    - All p values <0.001, except for the non significant high pairing
  - All other group pairings were not significant


Average Fantasy Points Scored - High Group Significant Matchups
High (27+)
Control
Below Average (19-23)
Low (-19)
15.1
11.8
11.4
10.5
Team Totals
0
2
4
6
8
10
12
14
Fantasy Points


Average Fantasy Points Scored - AA Group Significant Matchups
Above Average (23-27)
Control
Below Average (19-23)
Low (-19)
13.6
11.8
11.4
10.5
Team Totals
0
2
4
6
8
10
12
14
Fantasy Points

Confidence Intervals for High Group in Fty Pts

	Lower CI	Upper CI
vs Control	1.94	4.6
vs BA	2.45	4.97
vs Low	3.16	6.02

We can expect that 95% of the time the difference in means falls between Lower and Upper CI for each group.

Great news! - The differences in average fantasy points between groups does not cross zero. We can be confident of a real difference between groups.

Confidence Intervals for AA Group in Fty Pts

	Lower CI	Upper CI
vs Control	0.6	2.82
vs BA	1.13	3.18
vs Low	1.8	4.27

We can expect that 95% of the time the difference in means falls between Lower and Upper CI for each group.

Great news! - The differences in average fantasy points between groups does not cross zero. We can be confident of a real difference between groups.

Key Takeaways

The key takeaway for fantasy football drafters is to prioritize wide receiver and tight end selections on teams with **high (27+)** and **above average (23-27)** team totals.

To put it simply, one should focus pass catcher selections on players from teams with team totals of 23 points or more. This will lead to higher scoring lineups on average, which will lead to more winning teams and more money won through out the football season.

Finally, fantasy football drafters have one tool in their toolbox they can be confident in that is not simply opinion or hyperbole.

Questions?