

Investigating NBA Draftee Priorities Over Time



Project Free Ducks:

Ashir Raza, Elizabeth Berenguer, Mina Kim, Vincent Huang

Topic and Motivation

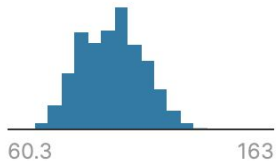
Research Question: How have the quality traits NBA teams desire in a draftee changed over time?

- Trends: Decline of the traditional big man, rise of 3-pt shooters
- Hypothesis: Over time in drafting, more **shorter**, **lighter players** have been picked earlier. **Assists** have gone up while **rebounding** has declined.



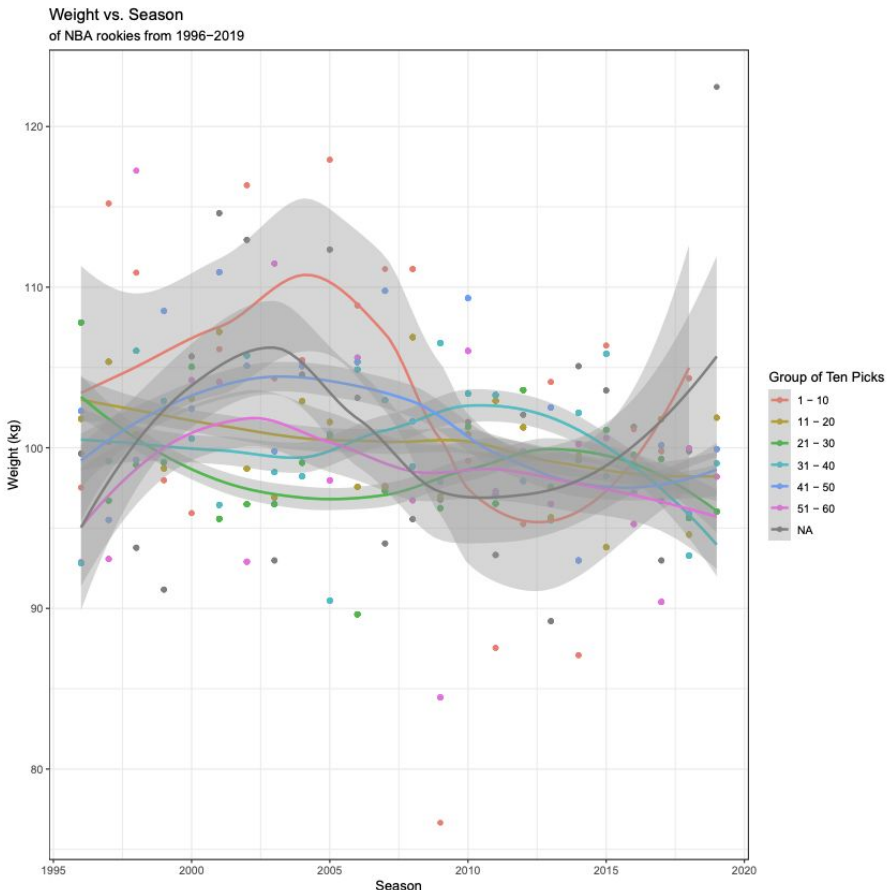
Data Introduction

- One entry per player per season
- Data collected from 1996-2018 seasons
- Variables we used:
 - age, player_height, player_weight, draft_year, draft_round, draft_number, ast, reb, dreb_pct, season
- To explore: frontcourt/backcourt

| △ player_name | # player_weight | △ draft_year |
|-----------------------|---|--|
| Name of the player | Weight of the player (in kilograms) | The year the player was drafted |
| 2235 unique values |  60.3 163 | Undrafted 17% 1998 4% Other (8749) 79% |
| Dennis Rodman | 99.79024 | 1986 |
| Dwayne Schintzius | 117.93392 | 1990 |
| Earl Cureton | 95.25432 | 1979 |

Highlights from EDA

- Initial Dataset Wrangling
 - Filtered for newly drafted rookies
 - Removed latest season
 - Grouped draft picks by multiples of 10 into draft groups
- Group by season and draft group
 - Find mean weight for each season and draft group
 - Scatterplot of **weight vs. time** to determine **Δ in NBA value of players' weight over time**



*NA = undrafted NBA players

Inference Tests

Are more guards picked in the first round?

- Null Simulation: Diff in Proportions

$$H_0 : p_1 = p_2$$

$$H_a : p_1 > p_2$$

- Sufficient evidence** to suggest that a **larger proportion of guards were picked in the first round** compared to the second round

| | |
|-------------------|-----------------|
| p_val | 0 |
| 95% conf interval | [-0.164, 0.169] |

Have NBA preferences for guards or frontcourt players shifted over time?

- Null Simulation: Diff in Means

$$H_0 : \mu_1 = \mu_2$$

$$H_a : \mu_1 \neq \mu_2$$

- Insufficient evidence** to suggest that **the mean year of guards who were drafted is different** from that of frontcourt players who were drafted

| | |
|-------|--------|
| p_val | 0.5848 |
|-------|--------|

Inference Tests Cont...

Are mean rebounding percentages from the early 2000s different from the rest of the dataset?

- Noticed trend in graphs that players drafted in the early 2000s were heavier/ taller
- Determined that there is a **relationship between player weight & rebounding %**
- Central Limit Theorem T-Test

| | | | | |
|--------------------------|-----------|--------|---------|-------------|
| $H_0 : \mu_1 = \mu_2$ | statistic | t_df | p_value | alternative |
| $H_a : \mu_1 \neq \mu_2$ | -0.239 | 30.898 | 0.813 | two.sided |

- **Insufficient evidence** to say that the **mean defensive rebounding percentage during the 2000-2006 seasons is different or equal to** the mean defensive rebounding percentage during all other years

Conclusions + Future Work



- Proportion of guards picked in the first round $>$ proportion of guards picked in the second round
- The relations (or lack of) between positional preference and season, as well as that of average defensive rebounding percentage from the 2000-2006 seasons vs the 1996-2018 seasons, are indeterminable.
- NBA guards have been consistently favored over the past ~20 seasons. We suspect NBA teams to have maintained similar priorities in drafting during that time.
- Future: Draftee age vs season, height and defensive rebounding percentage, forward and center variables