Atlanta Hawks Data Analytics Final Report

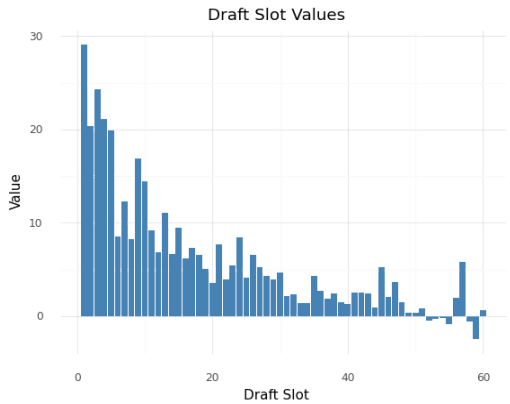
Ryan King

NBA teams that have drafted the most Duke players and were drafted in or before the 2000 draft.
The Dallas Mavericks, Minnesota Timberwolves, and Phoenix Suns are the teams who have drafted the most players who went to Duke and were drafted in or before the 2000 draft, each drafting 2 such players.

NBA teams that have drafted the most players who have a first name that begins with D and were drafted in an even year draft.
The Boston Celtics, Milwaukee Bucks, and Seattle Supersonics are the teams who have drafted the most players whose names start with D and were selected in even year drafts, each drafting 7 such players.

Relationship between a team's first round pick slot in one year with their first-round pick slot in the next year.
In order to find the relationship between these two variables, one must calculate the correlation coefficient between them. Initially, I needed to determine what round each player was drafted in. To accomplish this, I developed a function that returned the round number based on the player's pick number and the year they were drafted. I created variables to represent each team's first round picks and their subsequent year first round picks. The correlation coefficient produced was 0.419 which indicates that there is a positive, moderately strong correlation between the two variables. Having a positive correlation in this situation means that as the first-round slot in one year increases, the first-round pick slot in the next year also tends to increase. In actual terms, this positive correlation suggests that teams with higher first-round pick slots in one year are more likely to have higher pick slots in the next year.

Create a method for valuing each draft slot in the NBA Draft (picks 1 through 60 in most drafts).
I utilized the variables value over replacement, win shares, and box plus-minus in this method. These factors were chosen due to their ability to assess a player's overall contribution to team success. In the modern NBA landscape, certain players may boast impressive cumulative statistics such as points per game, rebounds per game, and assists per game. However, it is important to recognize that these statistics can sometimes be empty and fail to contribute meaningfully to their team's performance. These three variables go beyond traditional statistics and capture the player's overall impact on their team, efficiency and winning games. The graph below illustrates the outcomes of the method.



The graph demonstrates a decreasing trend in draft slot values as we move further into the draft. The first 10 picks in the draft exhibit a notably high player value, with an intriguing anomaly at pick number 9.

This particular selection possesses an elevated value, comparable to the top 5 picks, and stands out among its neighboring picks. Also, around pick 50, the value begins to decline significantly and becomes negative. This indicates that the perceived value or players available in that range are considerably lower. However, around pick 57, the value experiences an upsurge in value compared to other late second round picks. This may be attributed to teams uncovering hidden gems in this draft slot, as exemplified by the San Antonio Spurs selecting Manu Ginobili. Overall, this visual provides a comprehensive insight into the value associated with each draft slot, offering teams valuable guidance regarding the player's worth when making their selection.

Which NBA teams have over or underperformed the most when drafting during this time span? Which College Teams have had the players outperform expectations the most after entering the NBA?

When evaluating NBA teams' draft performance in relation to the expected value of draft positions, the New Orleans Hornets, Seattle Supersonics, San Antonio Spurs, Charlotte Hornets, and Cleveland Cavaliers emerged as the top overperforming teams.The team that underperformed the worst was the New Orleans Hornets when they played in Oklahoma City from 2005 to 2007. On the other hand, the New Orleans Hornets (2005-2007), New Orleans Pelicans, Washington Wizards, Dallas Mavericks, and Los Angeles Clippers struggled significantly in their drafting endeavors. Detailed tables depicting each team's comparison to the expected value in drafting are provided below.

Overperforming NBA Teams	Performance Difference
NOH	11.296
SEA	6.443
SAS	4.605
CHH	2.425
CLE	1.745
IND	1.653
TOR	1.624
HOU	1.615
GSW	1.465
LAL	1.445
DEN	1.412
MIL	0.852
DET	0.381
MEM	0.229
MIA	0.137
PHO	0.111
UTA	0.102
WSB	0.01

Underperforming NBA Teams	Performance Difference
OKC	-0.024
NJN	-0.037
BOS	-0.078
BRK	-0.697
MIN	-0.712
CHI	-0.74
POR	-0.906
ORL	-0.912
PHI	-1.066
VAN	-1.218
NYK	-1.246
SAC	-1.293
ATL	-1.381
CHA	-1.523
LAC	-1.905
DAL	-2.017
WAS	-3.19
CHO	-5.159
NOP	-5.667
NOK	-7.78

The college teams that have had their players outperform expectations the most after entering the NBA were Santa Clara, Davidson, Trinity Valley CC, IUPUI and Louisiana Tech. Below is a graph showing the top 10 teams with the highest performance metric relative to the expected draft position value of their players.

Rank	College Team	Performance Metric
1	Santa Clara	50.972
2	Davidson	50.414
3	Trinity Valley CC	29.334
4	IUPUI	23.465
5	Louisiana Tech	20.124
6	Weber State	19.906
7	Wake Forest	17.174
8	Rhode Island	16.226
9	Saint Mary's	15.786
10	Little Rock	15.152

What additional research areas would you focus on if given the opportunity to expand this study?

If given the opportunity, I would focus on further research to understand the factors contributing to the varying success rates of NBA teams in the draft. Exploring these factors and their impact on upcoming drafts could provide valuable insights. Additionally, I am intrigued by evaluating the correlation between a team's overall success and the quality of players drafted within the dataset's time period. This analysis could uncover draft trends, strategies, and skill sets that lead to improved team performance.