# ATL Hawks Analytics Final Report

Michael Lewis-Wedderburn

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(A) Which NBA team(s) has drafted the most players who...

a. went to Duke and were drafted in or before the 2000 draft?

The Dallas Mavericks, Minnesota Timberwolves, and Philadelphia 76ers drafted the most players who went to Duke and were drafted in or before the 2000 draft with 2 players each.

b. have a first name that begins with D and were drafted in an even year draft (1990, 1992, 1994, ...)?

The Boston Celtics, Milwaukee Bucks, and Seattle Supersonics drafted the most players who have a first name that begins with D and were drafted in an even year draft with 7 players each.

(B) Describe the relationship between a team's first round pick slot in one year with their first-round pick slot in the subsequent year.

Observing scatterplots of first-round pick slots for every team (assuming there are 30 picks in the first round every year), they mostly show a random scatter throughout the years. Therefore, there seems to be a random relationship between a team's first round pick slot in one year with their first-round pick slot in the subsequent year.

(C) Prompt: Analyze draft position value and team success/deficiencies compared to expectation.

a. Create a method for valuing each draft slot in the NBA Draft (picks 1 through 60 in most drafts).

To value each draft slot in the NBA Draft, I decided to get the expected Value Over Replacement based off of the formula provided by NYC Data Science Academy. Once I produced the $E(VOR)$ of every pick, I could use that to evaluate the performances for every NBA and College Team involved.

Formula Provided: 21.930875 - 5.414771 * log(Draft Pick)

b. Conditional on the expected value of the draft positions, 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?

Based on the total Value Over Replacement for each NBA team, the current top teams who have outperformed drafting are the Cleveland Cavaliers (366.6), Golden State Warriors (353.1), and Minnesota Timberwolves (324.3). Although technically not active anymore, the Seattle Supersonics also outperformed during their time with a total VOR of 344.3. On the opposite end, the current teams that have underperformed drafting are the New Orleans Pelicans (7.1), the Brooklyn Nets (27.2), and the Charlotte Hornets (88).

Also based on the average Value Over Replacement for each college team, the top teams whose players have outperformed expectations after entering the NBA are Davidson College (60.9), Santa Clara University (48.2), Wake Forest University (21.92727), and Weber State University (21.85). It is more useful to use average VOR when analyzing colleges' draft performance because some colleges have sent less than a handful of players to the NBA where other colleges have sent 40+ players to the NBA. In addition, some colleges' average VOR may be inflated because they have very few players enter the NBA from there (i.e., Stephen Curry from Davidson)

c. Explain and present your findings with tables and visuals. What additional research areas would you focus on if given the opportunity to expand this study?

If I had more time to expand on this study, I would find the datasets off all draft pick trades during this time frame to see the impact of draft pick trades in relation to the performances of all teams. When comparing VORs for different athletes that were traded the day they were drafted (or anytime around the draft), it would probably make some significant differences to the performances for every team involved.