Shan Virani
Professor Anderson
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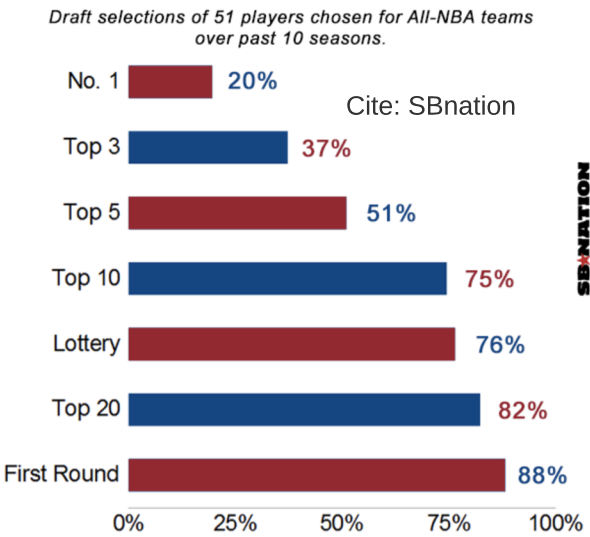# What NBA Scouts Should Look For In The NBA Draft

NBA

PERSONAL STORY

My inspiration for this topic comes from my love for the game of Basketball. I started playing when I was seven years old and as time has progressed, began to critique and analyze specific parts of the game; My friends and I would often argue about why it is so difficult for NBA scouts to consistently find talented players that could fit the style of the NBA; Given the tools and resources that NBA scouts have, they should be able to find the best players relatively easily...it only makes sense! However, this has not been the case. My goal for this project is to answer this question, through in-depth analysis, and find exactly what scouts shuold look for in the NBA Draft.
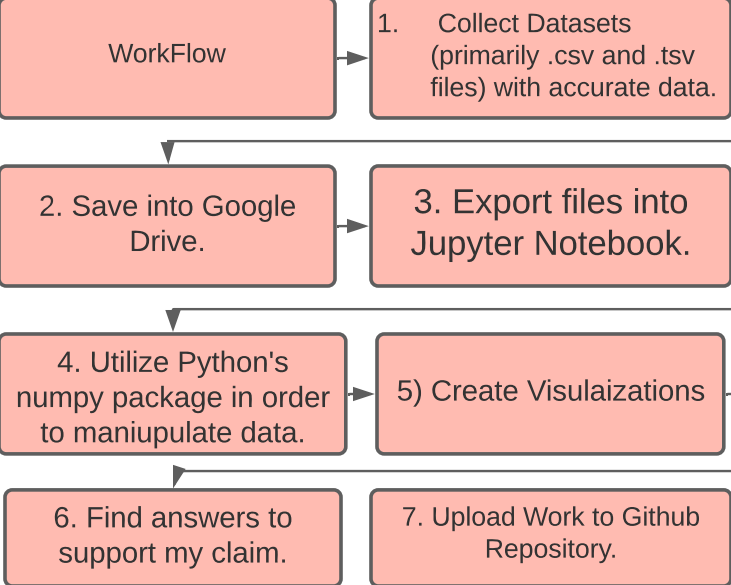
Introduction

Throughout the years, NBA teams who have had a top-10 pick in the NBA Draft have failed to be consistent in finding "successful" recruits. While the intent of this project does not disregard picks made after the top 10, it is important to point at just this category of individuals because they are considered to have the highest ceilings, or the "most potential." When looking at the graph to the right, we can notice that over the past 10 seasons, only 20% of players picked No.1 overall became All-NBA players. This analysis aims to find the most important factors that NBA Scouts should search for in the NBA Draft, in order to increase the total number of "successful" prospects in the NBA.

WHERE ARE ALL-NBA PLAYERS PICKED?

Draft selections of 51 players chosen for All-NBA teams over past 10 seasons.

Cite: SBnation

No. 1	20%
Top 3	37%
Top 5	51%
Top 10	75%
Lottery	76%
Top 20	82%
First Round	88%

SBNATION

WorkFlow

1. Collect Datasets (primarily .csv and .tsv files) with accurate data.
2. Save into Google Drive.
3. Export files into Jupyter Notebook.
4. Utilize Python's numpy package in order to maniupulate data.
5. Create Visualizations
6. Find answers to support my claim.
7. Upload Work to Github Repository.

RESEARCH QUESTION:

How can we imporve the amount of successful talent in the NBA?

What specific trait should NBA Scouts Look For in The NBA Draft Combine to successfully draft better talent?

HYPTHOESIS :

Players with longer winsspans will tend to suceed in the NBA. This is because they wukk be much better at defense, and will akso be able to scorer easier on the offensive side. By having a longer winspan they will be more athletically gifted than other players, and will be more "promising prospects."

DATA SETS AND DESCRIPTION:

1) NBA_Draft_1980_2017.tsv:
This dataset consists of every NBA player drafted from 1980-2017, along with much relevant information such as their pick number, the college they played for, etc.

2) nba_draft_combine_all_years.csv:
This second dataset is a .csv file that contains information about any specific player during their draft combine (Years 2009 and above). For instance, some of the information includes: Height, Wingspan, Vertical, etc.

3) 2009ppg.csv:
Provides career points per game for every player drafted in 2009.

4) 2012ppg.csv:
Provides career points per game for every player drafted in 2012.

5) 2015ppg.csv:
Provides career points per game for every player drafted in 2015.

TOOLS

Python with numpy/pandas package: Used for data manipulation in order to better calculate results, perform linear regressions, make scatterplots, histograms, and much more.

Jupyter Notebook: Used to open datasets and visualize python functions easier.

Terminal: Used to obtain data from basketball-reference.com and turn the data in a csv.

METHODS

1) Find Dataset, and import into Jupyter Notebook.
2) Separate each draft class by year
3) Use basketball reference to find every NBA players' career points per game.
4) Use terminal to extract data from basketball reference and create a new data set which will be imported into jupyter notebook.
5) Import Numpy package into Jupyter Notebook, to better create visualizations
6) Find correlations between given variables
7) Present Data in a clear and consise manner.
8) Import into Github Respository.

LIMITATIONS:

1) Expectations of players are relative to individual thinking, and for the sake of simplicity, we have defined "bust" as a player who was not an "All-NBA player." However, this definition could change if asked to someone else.

2) The NBA Draft Combine has started to measure new stats on players that they previously did not. This means that some stats measured in 2021 did not exist in the early-2000's and before. Because of this, the analyisis is only limlited to the previous 10 years in order to keep the data consistent.

3) The NBA Draft Combinle dataset does not include some players, which potentially skew the data.

VISUALIZATIONS
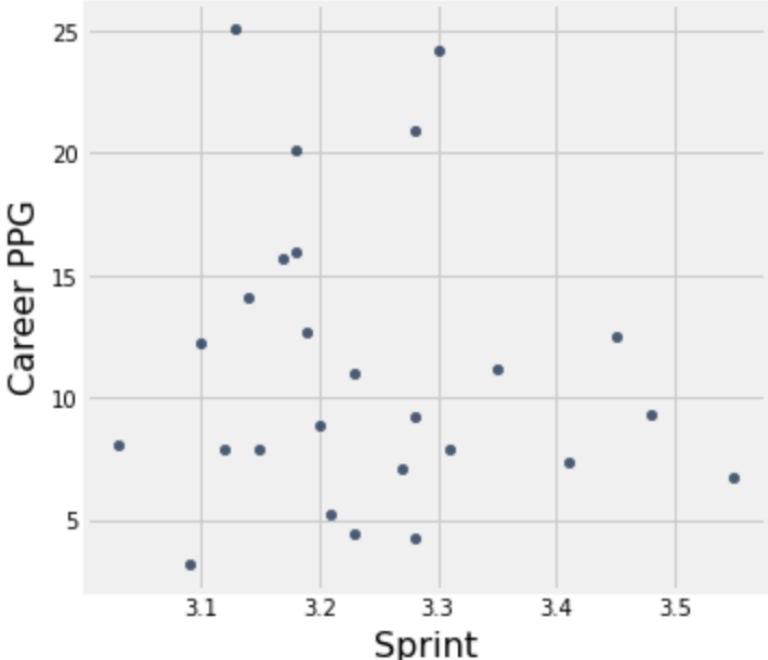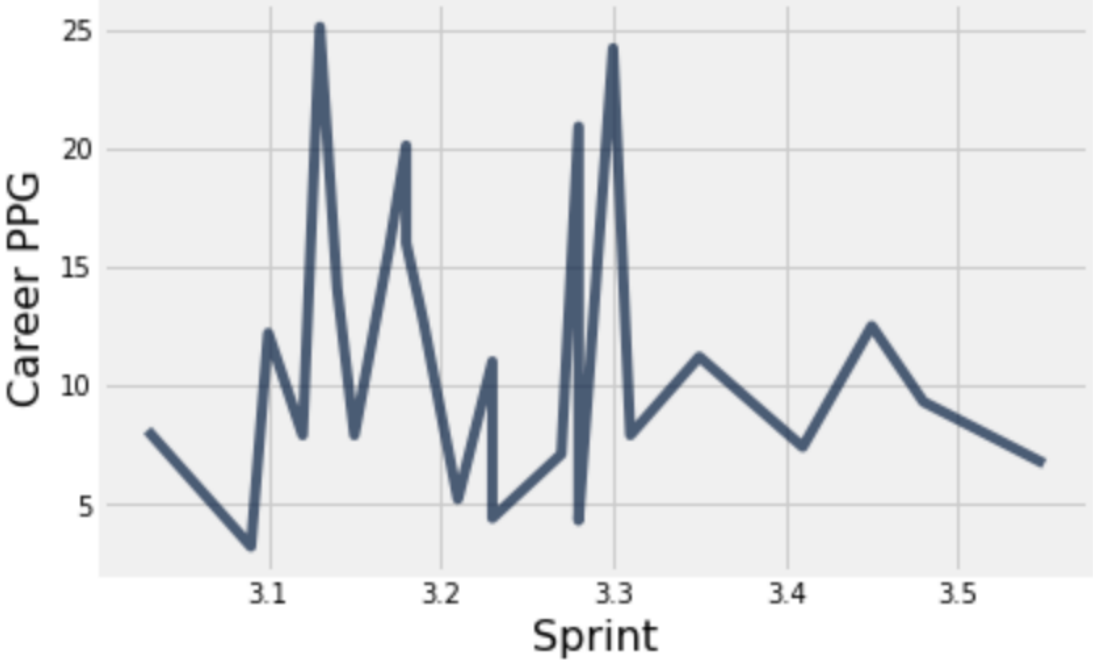
The graphs below provide evidence about the 2012 NBA Draft Class; CorrleatioIns are provided between sprint times and Career PPG for each player. Additionally, the visulatizations show that with lower sprint times, players tend to have higher Career Point Averages; At first, I believed that this was only a result of the 2012 Draft Class, however, this trend seemed to remain constant for every draft class (See Jupyter Notebook for all visualizations).

INTERPRETATION OF RESULTS:

At the beginning of the project, I believed that the most important aspect that NBA Scouts should look for is wingspan, however, when looking at correlations for every given variable, I found that Sprint Times were seemingly the be-all-end-all for players that wanted to have a promising NBA Career; This makes sense because with higher sprint times, players are able to jump higher, blow by their defenders with ease, and provide themselves with advantages that other players can not. With this, they are able to score the ball easier and overall provide a better impact for their respective teams.

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