<Final Project>

Executive Summary

Professional sports are a very popular aspect of today's society. One of the most interesting parts of professional sports is the question of why players play a certain sport or a certain position within their sport. To solve this problem, I took the route of focusing on the athlete body type.

To solve this problem, I looked at the different body types of women's soccer players, baseball players, and football players. I focused on the top athletes in each sport and created graphs based on height, weight and age. I then analyzed my graphs and came to the conclusion that a distinction in body type does exist between not only different sports but between different positions within each sport. I believe that body type can have an effect on a sport that an athlete chooses to play and which position the athlete will play within their sport.

Problem Description

My challenge was to determine why professional players play the sport that they do, and why certain players are placed in certain positions based on their body type. I examined multiple sports and multiple characteristics of athletes in order to come to a conclusion of whether a certain body type can determine not only an athlete's chosen sport, but their position within the sport as well.

Analysis Technique

For my analysis, my first step was to gather the data. Because of the large amount of data available for each team in each sport, I decided to focus on the top four or five teams and I only analyzed the most successful players. I used the rosters as my datasets and trimmed them down based on the amount of games played in order to focus on the most effective players. I then added the individual characteristics like height, weight, age, etc.

My next step was to plot the datasets and make my initial hypothesis. I believed that by plotting the data I would be able to see correlations that would help me to determine whether a certain body type is required for an athlete to be successful in their sport. I also took a closer look at the individual positions in a sport and determined whether each specific position requires a different body type. My thoughts were that while soccer may have a certain body type compared to other sports, the body types of different positions would not vary much. However, in football and baseball there are many different positions that require a difference in height and weight.

Once I had all of my data, I was able to separate my datasets into smaller datasets based on height, weight, and age. I was then able to plot these new datasets on graphs that distinguished between positions (see Figure 1 and Figure 2). I then analyzed my graphs and found my results by looking at the average, maximum and minimum values for each sport and each position.

Assumptions

During my research, one of the main assumptions that I made is that the best players are the ones who actually play. Because of the large size of the rosters for each team, it would be extremely difficult for me to analyze every player from every team. Because of this, I only chose

to use the data concerning the ‘best’ players from each team. In my opinion, the best players on a team are the ones who play and contribute to the game.
I also assumed that the better teams are the teams who had a successful season. Like stated earlier, because of the large amount of data available, I could not examine each and every team from each sport. In order to trim down the data, I focused only on the top four or five teams in each sport.

Results

After examining the graphs, I was able to come to the conclusion that a distinction in body type does in fact exist between sports and positions within sports. I created graphs that distinguish between positions based on certain characteristics. I then analyzed these graphs and found the results to be consistent with what I know about professional athletes and the sport they participate in. Because of this, I believe that athletes are placed in a certain position in their sport based on their body type, and that certain sports require a certain body type.

Issues

My biggest issue was actually collecting my data. I only wanted what I considered the ‘best of the best’, meaning, I only wanted to study the athletes that participated in their sport and made a difference on the field. Therefore, I had to create my own custom datasets. This involved starting with the team rosters and trimming down the data until I had a roster of players that were the ‘best’.

Another issue I had was that I had initially planned on finding my results by using clusters. However, after struggling for a while with no outcome, I decided on starting over and finding my results with a different method.

Appendices

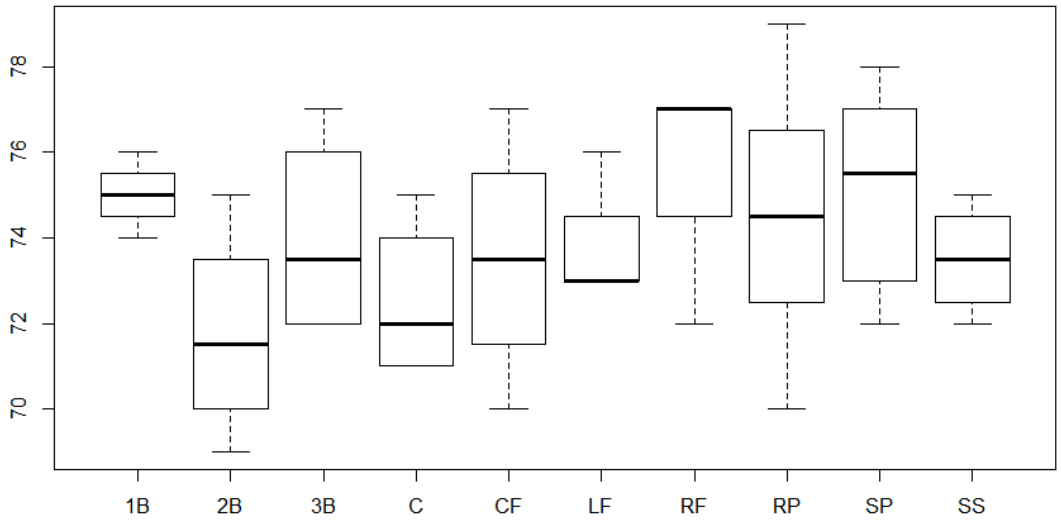

Figure 1

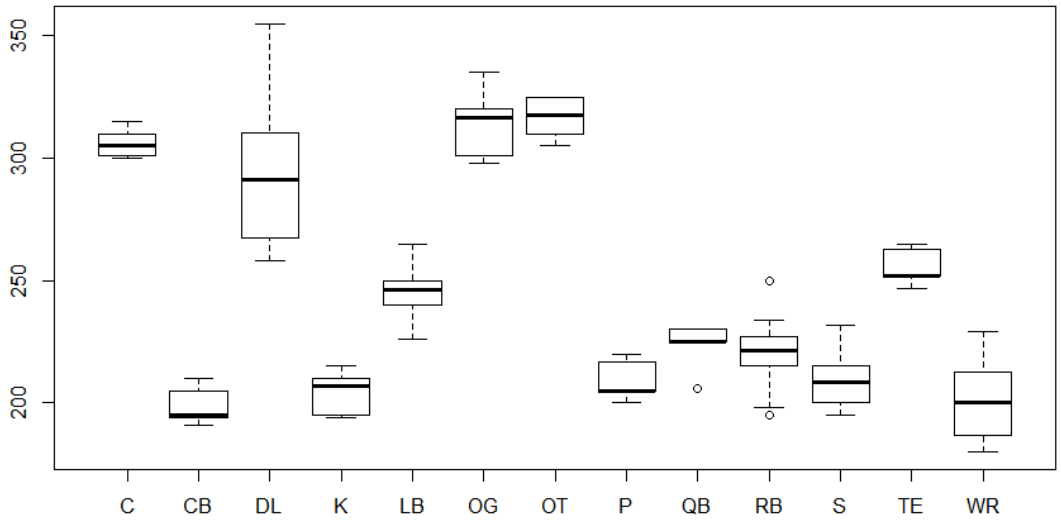

Figure 2

References

Average Weight. (2015). Retrieved 12 10, 2015, from theaveragebody.com: http://www.theaveragebody.com/average_weight.php

Football Positions. (2015). Retrieved 12 01, 2015, from American Football Films: http://americanfootballfilms.com/football-positions/

Fox, K. (2014, 06 10). *Distance Run Per Game in Various Sports*. Retrieved 12 12, 2015, from Runner's World: http://www.runnersworld.com/newswire/distance-run-per-game-in-various-sports

MLB Teams. (2015). Retrieved 12 01, 2015, from espn.com: http://espn.go.com/mlb/teams

Pro Football Statistics and History. (2015, 12 8). Retrieved 12 01, 2015, from Pro-Football-Reference.com: www.pro-football-reference.com

Statistics. (2015). Retrieved 12 01, 2015, from mlb.com: http://stlouis.cardinals.mlb.com/stats/

Statistics. (2015). Retrieved 12 01, 2015, from nfl.com: http://www.nfl.com/stats/player

Teams. (2015). Retrieved 12 01, 2015, from fifa.com: http://www.fifa.com/womensworldcup/

Teams. (2015). Retrieved 12 01, 2015, from nfl.com: www.nfl.com/teams/roster

Women's National Team. (2015). Retrieved 12 01, 2015, from ussoccer.com: http://www.ussoccer.com/womens-national-team/latest-roster