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Basketball and Football Player Heights

The data that I used for my project was the heights of basketball and football players in feet. I used this data to formulate and create the question “on average, are Basketball players taller than football players.” I chose this question because on average the height of football players was lower than basketball players. Ho for my claim is mean height of basketball players = mean height of football players. My Ha for my claim is that mean height of basketball players > mean height of football players. For the data set, I had to put each individual height measurement into a list and then found the mean and sample standard deviation for each list of data. I did this first to get the information needed to then use my calculator to find the p-value and degrees freedom. The mean for my first list (football players) was 6.179. The sample standard deviation was .3661 with a population of 45. For my second list (basketball players) I got a mean of 6.453, a sample standard deviation of .314, and a population of 40. From this information I put it into a 2 sample T test because it satisfied the conditions of having a population greater than 30 and not being the population standard deviation. I then got a p-value of 1.8454556E-4. I also got degrees of freedom being 82.903. I took this data and used it to find a 90% confidence interval for my data and got (-.3967, -.1513). I took this confidence interval to find the parameter that could be the distance between the two means at any given time.

For my answer to the original question/claim that the height of basketball players is taller than football players, I reject Ho because my p-value is lower than .05 which is the standard number used to determine whether a claim is rejected or fails to be rejected. So it is not statistically significant that basketball players are taller than football players according to my data set. This answer is reasonable because for the test it is only used to represent the sample that was taken and used in the analysis. This essentially means that the height of basketball players is greater than football players because they are so far away from being equal. It is also reasonable because the actual mean heights for the players do have the basketball players heights being higher just with a smaller standard deviation. The limits of this are that it cannot be used to represent the whole population of all basketball and football players unless you were to able to get all of the heights of all players. Another limitation of my answer is that my confidence level is only 90% confident. This information may be useful to someone trying to figure out the average height of sports players relative to which sport they play. It may also be useful to someone trying to recruit players from one sport to another by seeing how their height may be a factor.