



Analysis of Revenues and Expenses of Basketball in the ACC

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Introduction/Motivation

- Given the Duke Basketball dynasty we were interested at looking more into basketball in the Atlantic Coast Conference (ACC).
- Since last year marked the 50th anniversary of Title IX, we thought it would be interesting to look at the difference between men's and women's teams.
- Our research looked into the revenues and expenses of each program during 2020 and 2021.

Research Question

How do men's college basketball revenues and expenses compare to women's college basketball revenues and expenses?

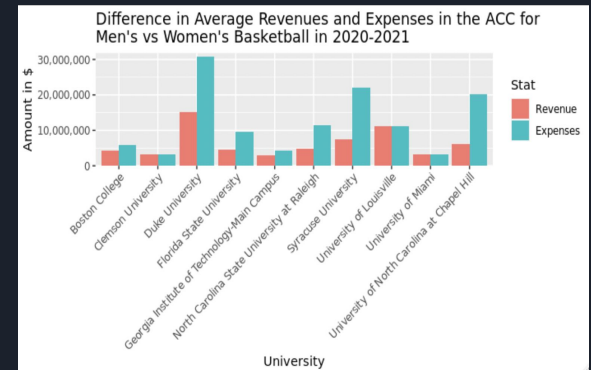
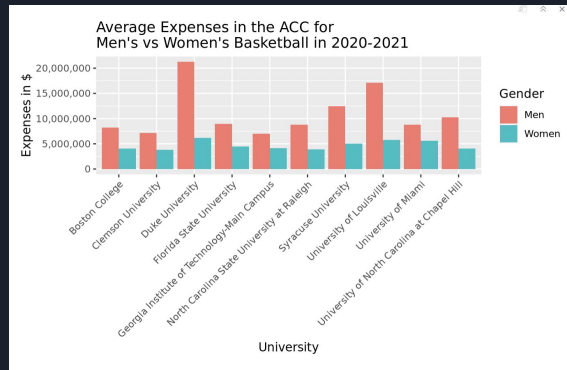
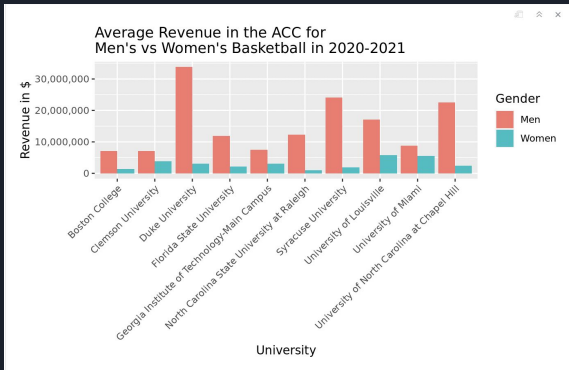


Data

- Every postsecondary institution that receives federal funding, and has intercollegiate sports programs, is required to report annual data on these programs.
- We obtained our data from the Equity in Athletics Data Analysis which was created by the US Department of Education.
- The dataset contains information for each team such as number of participants, annual expense, annual revenue, and coaches' salaries.
- We tidied the dataset by narrowing it to just basketball teams in the ACC in 2020 and 2021.

EDA Highlights

- We hypothesized that on average, men's revenue and expenses would outweigh women's revenue and expenses
- In our initial analysis we observed that men's revenue greatly outweighs women's revenue.
- Men's expenses also outweighed women's expenses, however when looking at the difference of averages we observed that the difference in revenue was greater than the difference in expenses.





Inference/Modeling

- Using a hypothesis test we analyzed the difference in men's and women's revenue.
- Using a second hypothesis test we analyzed the difference in men's and women's expenses.

$$\begin{aligned}H_o: \mu_{mrev} - \mu_{wrev} &= 0 \\H_a: \mu_{mrev} - \mu_{wrev} &> 0\end{aligned}$$

$$\begin{aligned}H_o: \mu_{mexp} - \mu_{wexp} &= 0 \\H_a: \mu_{mexp} - \mu_{wexp} &> 0\end{aligned}$$



Analysis

- In both tests, we obtained a p-value of <0.001 with an assumed alpha value of 0.05.
- We can reject the null hypothesis and have strong evidence to conclude the alternative hypothesis.
- We can conclude that on average, for basketball teams in the ACC
 - Men's revenue is greater than women's
 - Men's expenses are greater than women's



Conclusions/Future Work

- Given our analysis of this data we have upheld our hypothesis and concluded that on average, men's basketball teams in the ACC have higher revenues and expenses when compared to women's basketball teams in the ACC.
- Further research should be done to investigate exactly where these divides arise from.
- For example, what is considered revenue? (ticket sales, tv deals, sponsorships)
- Given this information, we can attempt to target the areas with the most division and decrease the gap between men's and women's revenue.
- In theory, if the gap in revenue closes, the gap in expenses will also close because women's teams will have more funds to spend.