

# World University Rankings

By: Angel Mendoza



# Data Source

- + The data that I'll be using for this project is from Kaggle with the title "World university rankings 2023" dataset. Here's the [link](#) for the dataset for reference.
- + The dataset is consisting of 1422 records across twenty-one fields

# Fields Identified From the Dataset

- + Rank - Integer
- + Institution - Object
- + Location Code - Object
- + Location - Object
- + Academic Reputation Score(AR score) - Float
- + AR Rank - Object
- + Employer Reputation Score(ER Score) - Float
- + ER Rank - Object
- + Faculty/Student Ratio Score(FSR Score) - Float
- + FSR Rank - Object
- + Citations Per Faculty Score(CPF Score) - Float
- + CPF Rank - Object
- + International Faculty Ratio Score (IFR Score) - Float
- + IFR Rank - Object
- + International Student Ratio Score (ISR Score) - Float
- + ISR Rank - Object
- + International Research Network Score(IRN Score) - Float
- + IRN Rank - Object
- + Graduate Employment Rate Score(GER Score) - Float
- + GER Rank - Object
- + Score Scaled - Object

# What research or business questions do you want to answer?

- + First is to see any correlation between employer reputation score (ER Score) and graduate employment rate score (GER Score)
- + Second is to see if there's a significant difference for US institutions and all other top institutions in this ranking in terms of their respective academic reputation score (AR Score)
- + Third is to see if there's a significant difference for US institutions and all other top institutions in this ranking in terms of their graduate employment rate score (GER score)

# THE HYPOTHESES

## + Hypothesis 1

Null( $H_0$ ): There is no statistical significant relationship between employer reputations score(ER Score) and graduate employment rate score(GER score)

Alternate( $H_a$ ): There is a statistical significant relationship between employer reputation score and graduate employment rate score

## + Hypothesis 2

Null( $H_0$ ): There is no statistical difference between academic reputation score (AR Score) for US institutions compared to the rest of the institution outside of the US

Alternate( $H_a$ ): There is a statistical difference between academic reputation for US institutions compared to the rest of the institution outside of the US

## + Hypothesis 3

Null( $H_0$ ): There is no statistical difference between graduate employment rate score(GER score) for US institutions compared to the rest of the institution outside of the US

Alternate( $H_a$ ): There is a statistical difference between graduate employment rate score for US institutions compared to the rest of the institution outside of the US

# How will the hypotheses be tested

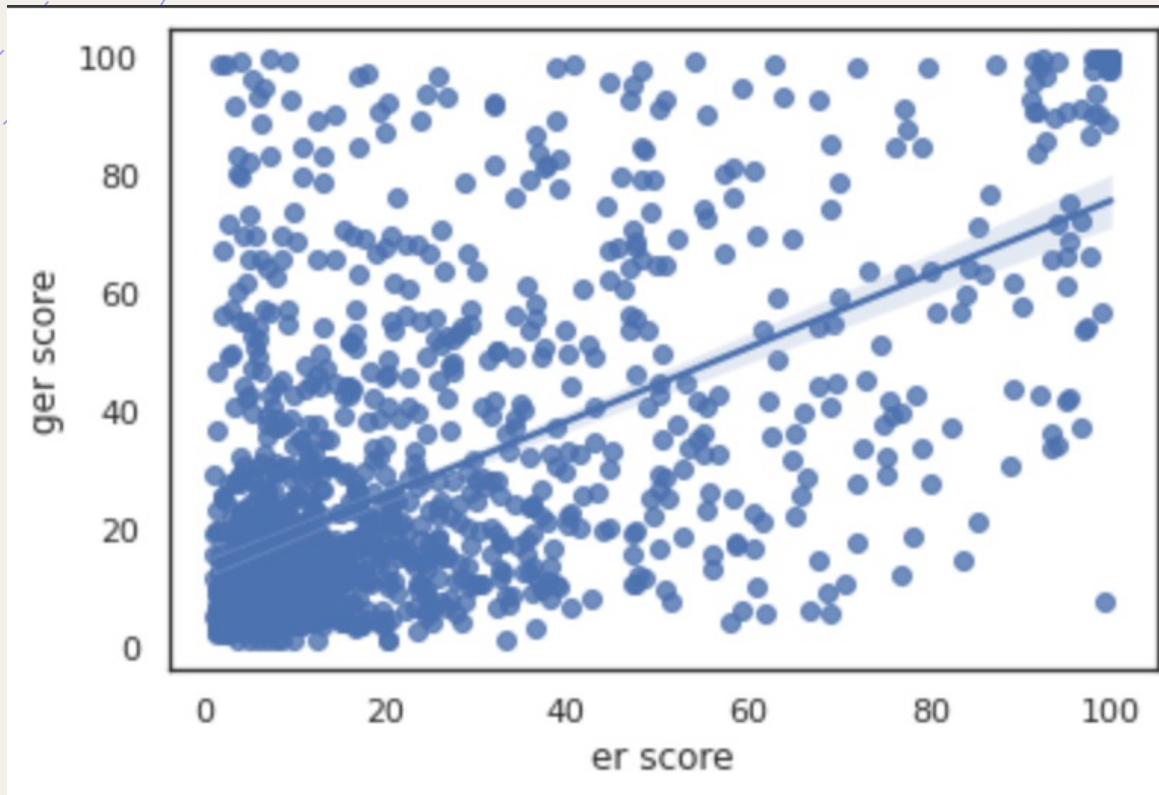
- + For testing our hypotheses we will use:
  - + Correlation Analysis to measure statistical relationship or association between two continuous variables
  - + And T-test to determine if there is a significant difference between the means of two variables
- + Visualization using scatter plot and box plot

# Who will find your findings valuable, and how will they use them?

- + Educational Institutions can use this information to align their standards among the top universities in the world, elevate the quality of education and career opportunities they provide
- + Future students, to see which school could help them hone their skills, identify which school align with their value of importance, and see which provides a good educational support during and after their tenure



# Hypothesis 1 – Correlation between Employer reputation score and Graduate Employment Rate Score

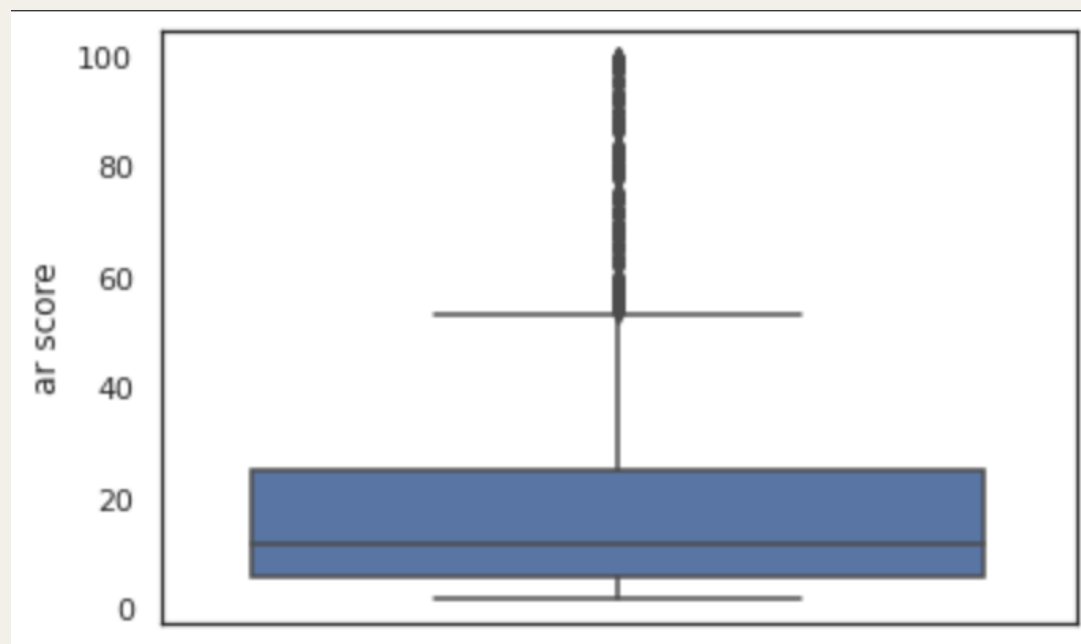


- + The correlation analysis produced a result of correlation size of 0.58
- + Therefore, we concluded that we'll reject our null hypothesis and accept the alternative, that there is a moderate positive correlation between employer reputation score and graduate employment rate score.

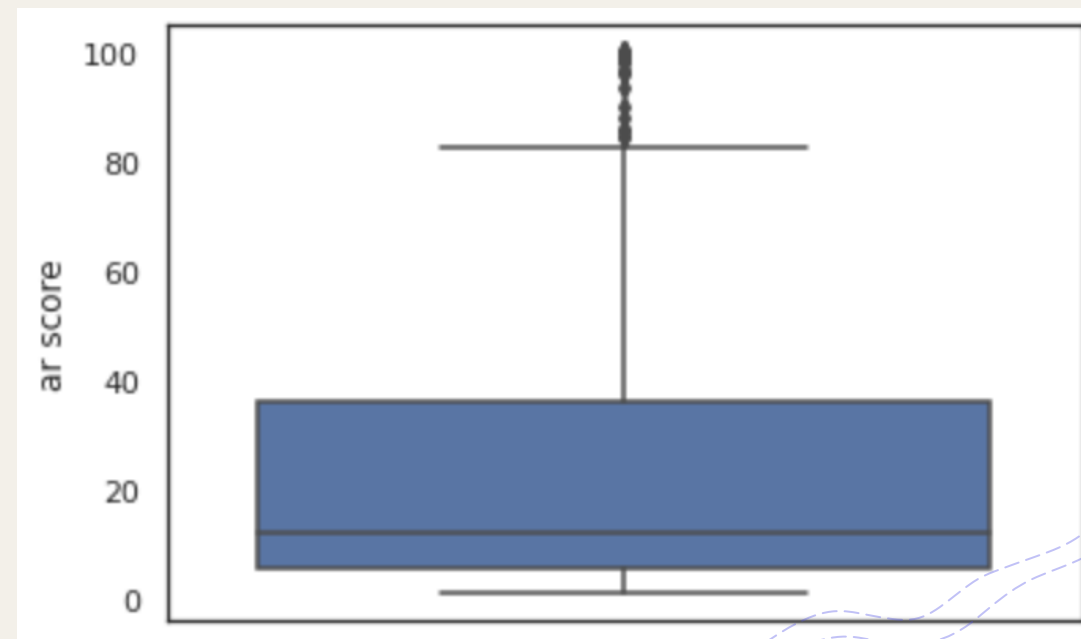


## Hypothesis 2 – Comparing Academic Reputation Score between US Institutions and all the other Institutions using T-test

Other Institutions



US Institutions

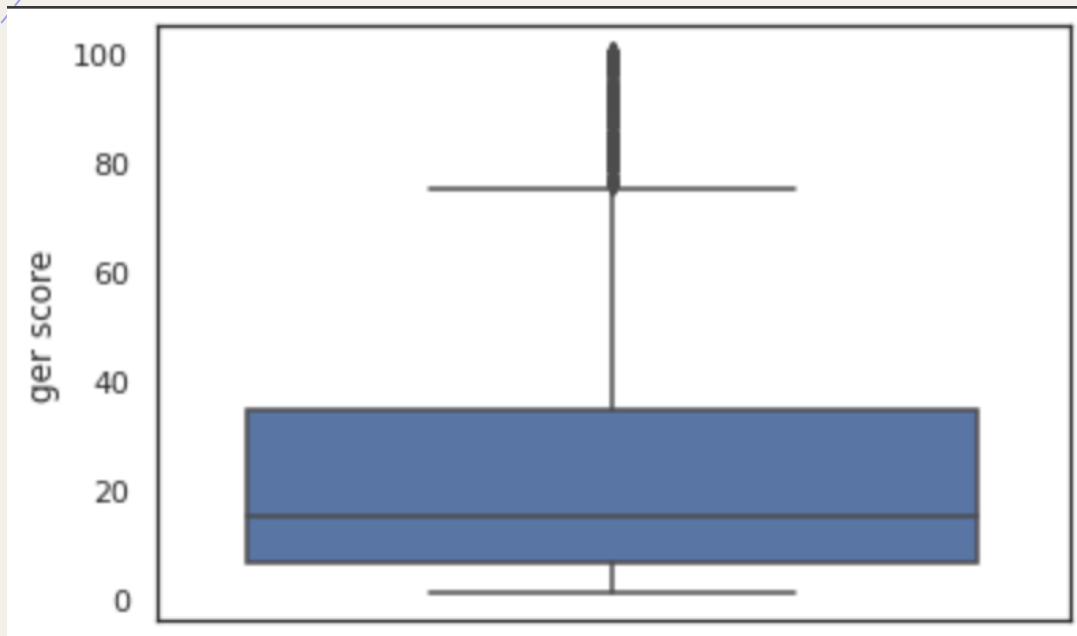


## Hypothesis 2 – Comparing Academic Reputation Score between US Institutions and all the other Institutions using T-test

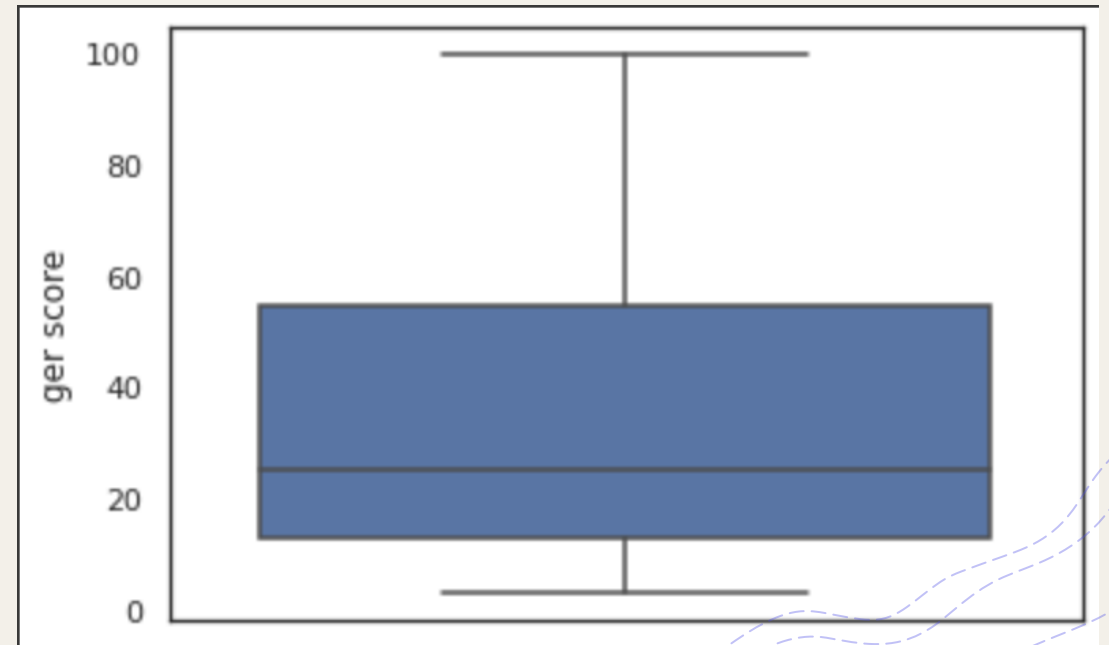
- + The t-test result gives us a value of 0.005 which is lower than the required p-value of 0.05
- + Therefore, we can reject our null hypothesis and accept our alternative hypothesis that there is a statistical difference between US and other institution when measure between their respective academic reputation scores(AR Score)
- + Confidence Interval between US and other institution when measure by their respective academic reputations scores has a difference between 0.74 and 9.52.

# Hypothesis 3 – Comparing Graduate Employment Rate Score between US Institutions and all the other Institutions using T-test

Other Institutions



US Institutions



## Hypothesis 3 – Comparing Graduate Employment Rate Score between US Institutions and all the other Institutions using T-test

- + The T-test result gives us a significant p-value that's less than 0.05
- + Therefore, we can reject our null hypothesis and accept our alternative hypothesis that there is a statistical difference between US and other institution when measured between their graduate employment rate scores (GER score)
- + Confidence Interval between US and other institution when measured by their graduate employment rate scores has a difference between 7.41 and 16.35

# Recommendations

## **For future students**

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When choosing which educational institution to go to, they should consider its reputation both academically and how employers perceive a school. For this can help them choose a school that will benefit them upon looking for a job and the quality of education they get from these institutions.

## **For the universities**

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They can refer to this information as way to see how they can improve their level of education, competitiveness and building relations with employers or outside network. For all these factors can help not just the institution itself to be recognized but also the quality of students that they produce