



SOUTHVILLE INTERNATIONAL SCHOOL AND COLLEGES

1281 Tropical Avenue corner Luxembourg Street,
BF International, Las Piñas City
COLLEGE DIVISION

Data Science and Business Analytics



DATA ANALYSIS ON TOP ASIAN UNIVERSITY IN 2023

Guiruela, Brid Andrei

January, 2025



SOUTHVILLE INTERNATIONAL SCHOOL AND COLLEGES

1281 Tropical Avenue corner Luxembourg Street,
BF International, Las Piñas City
COLLEGE DIVISION

INTRODUCTION

In the competitive landscape of global higher education, Asian universities have proved to demonstrate exceptional growth and competitiveness. This document presents a comprehensive data analysis of top Asian universities, aiming to uncover patterns and relationships between various institutional metrics. The analysis leverages data points such as academic reputation, international collaboration, student mobility, and overall performance to provide valuable insights into the factors contributing to their success on the global stage.

The focus of this data analysis mostly revolve around:

1. Correlations between Academic Reputation and International Mobility by investigating how outbound student exchange and international research centers impact academic standing.
2. Internationalization Metrics by exploring the relationship between international students, faculty, and research initiatives.
3. Student Exchange Programs by analyzing outbound and inbound exchange metrics in relation to institutional collaborations and global influence.
4. Regional and Country-Level Performance by highlighting overall scores by Asian region and individual countries to identify leaders and trends within the region.

This study aims to serve as a little project to discover trends and insights for academic institutions and myself to further enhance my skills on Power BI and data analytics.



SOUTHVILLE INTERNATIONAL SCHOOL AND COLLEGES

1281 Tropical Avenue corner Luxembourg Street,
BF International, Las Piñas City
COLLEGE DIVISION

OBJECTIVES

1. Understand Regional Trends and examine performance differences across various Asian regions and countries to understand areas of strength.
2. Analyze International Collaboration by exploring the impact of international research centers, student exchanges, and faculty diversity on institutional reputation and academic performance.
3. Correlate Academic Reputation with mobility by investigating how student and faculty mobility aligns with academic reputation and global competitiveness.

DATA COLLECTION, WAREHOUSING, AND CLEANSING

The analysis utilized a multi-step process for data preparation and visualization.

The dataset was sourced from an open-source repository on Kaggle which provides comprehensive information on top Asian universities. The **Top 300 Asian Universities - QS Rankings 2024** dataset provides a detailed overview of the rankings and performance metrics of leading universities across Asia. It includes key information such as the overall rank, ordinal rank, university name, and total score based on QS methodology. Additionally, the dataset highlights the location of each institution, including its city and country.

Performance metrics cover various aspects, including research impact (citations per paper and papers per faculty), academic and employer reputation, faculty-student ratio, and the percentage of staff with PhDs. It also captures the level of internationalization through metrics such as the proportion of international students and faculty, collaboration at research centers, and data on inbound and outbound student exchanges.



SOUTHVILLE INTERNATIONAL SCHOOL AND COLLEGES

1281 Tropical Avenue corner Luxembourg Street,
BF International, Las Piñas City
COLLEGE DIVISION

This dataset has diverse applications, including analyzing trends in academic and research performance, comparing universities across countries and regions, visualizing metrics such as research impact and faculty diversity, and building machine learning models for ranking predictions or analysis. Sourced from the publicly available QS Rankings 2024, it is a valuable resource for understanding the educational landscape in Asia.

Microsoft Excel was used to store and organize the collected data systematically. Data cleaning processes, including removing duplicates, handling missing values, and standardizing formats, were also performed in Microsoft Excel to ensure the integrity of the dataset. This approach to data preparation and analysis ensures that the findings presented in this document are done manually.

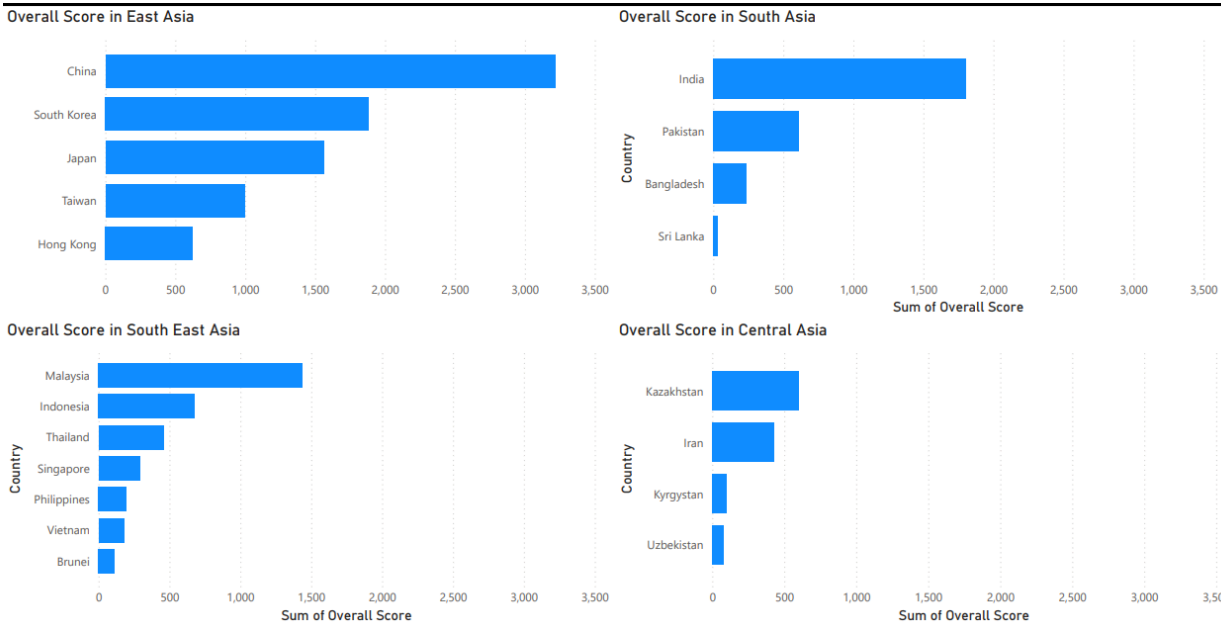


SOUTHVILLE INTERNATIONAL SCHOOL AND COLLEGES

1281 Tropical Avenue corner Luxembourg Street,
BF International, Las Piñas City
COLLEGE DIVISION

DATA VISUALIZATION AND STORYTELLING

OVERALL SCORE OF EACH COUNTRY IN EACH ASIAN REGION

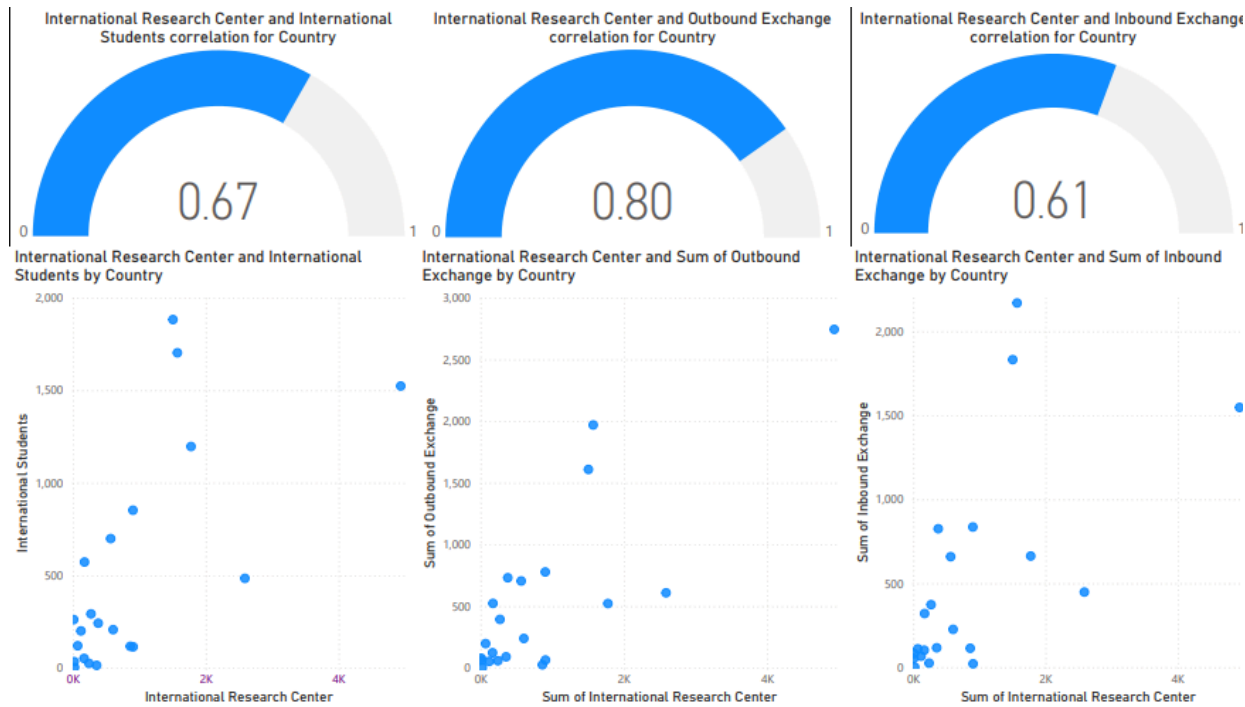


A graph displaying the overall score for each Asian region provides a clear comparative view of the average performance of universities across different regions in Asia. The graph serves as a visual tool to identify regional strengths and disparities in higher education, providing insights into areas requiring investment or policy focus to enhance competitiveness and academic excellence.



SOUTHVILLE INTERNATIONAL SCHOOL AND COLLEGES

1281 Tropical Avenue corner Luxembourg Street,
BF International, Las Piñas City
COLLEGE DIVISION



The graph comparing outbound exchange and academic reputation explores whether universities that send more students abroad tend to have stronger academic reputations. A low correlation in this graph could indicate that robust exchange programs enhance the institution's global visibility and academic standing. Similarly, the graph examining the correlation between international students and international research centers highlights how attracting students from diverse backgrounds may align with active participation in global research collaborations which reflects the university's commitment to fostering an international academic environment. The graph comparing outbound students and international research centers investigates whether universities with high outbound mobility also maintain strong collaborative research networks internationally. The graph on inbound students and international research centers explores how attracting international students shows a low correlation might indicate the institution's lack of ability to draw talent and build partnerships across borders.



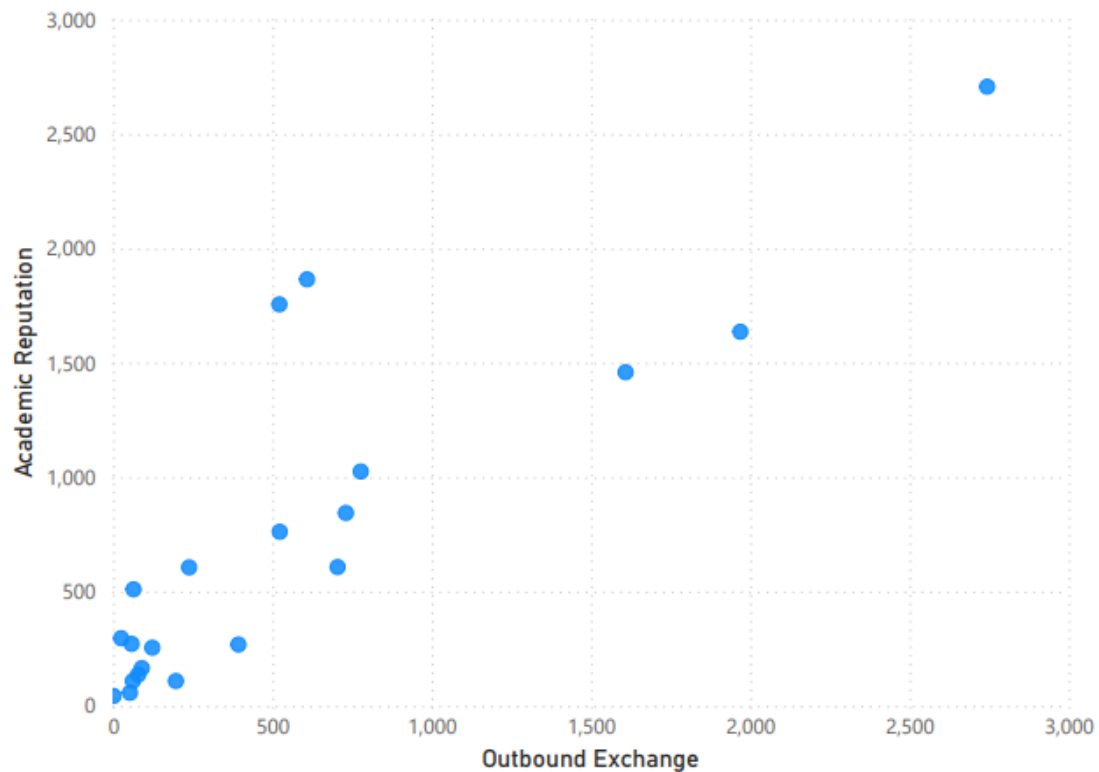
SOUTHVILLE INTERNATIONAL SCHOOL AND COLLEGES

1281 Tropical Avenue corner Luxembourg Street,
BF International, Las Piñas City
COLLEGE DIVISION

Outbound Exchange and Academic Reputation correlation for Country



Outbound Exchange and Academic Reputation by Country



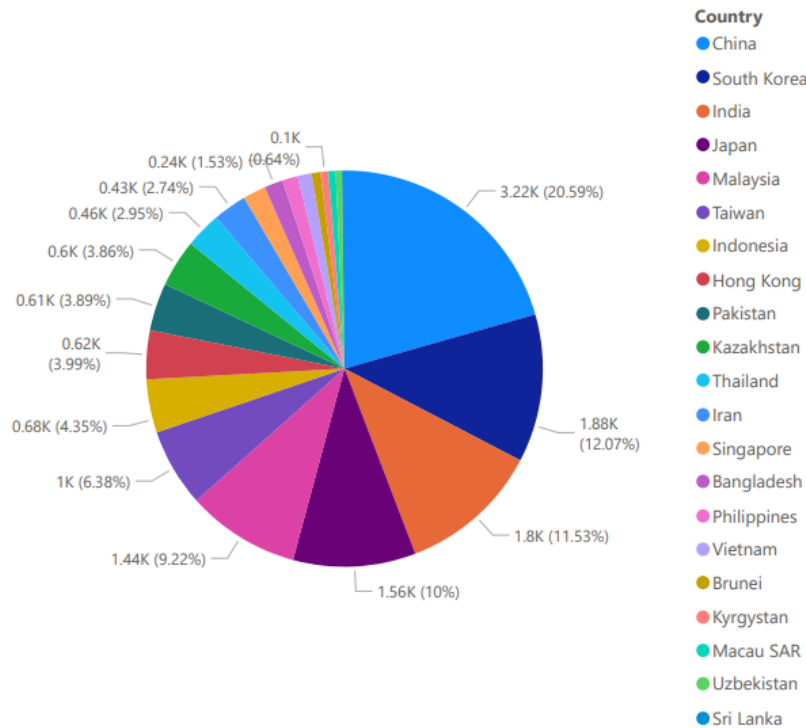
The graph shown above possibly indicates that outbound exchange is highly correlated with academic reputation. It can be concluded that students are enrolling in those particular institutions based on their academic reputation.



SOUTHVILLE INTERNATIONAL SCHOOL AND COLLEGES

1281 Tropical Avenue corner Luxembourg Street,
BF International, Las Piñas City
COLLEGE DIVISION

Overall Score and First Country by Country



The pie chart displays the distribution of overall scores across the top 300 Asian universities, segmented by country. It shows how different nations contribute to the top-tier universities in Asia. The largest section of the chart is dedicated to China, reflecting its dominance in higher education with a significant portion of universities ranking highly. The chart illustrates the concentration of elite universities in certain countries while showing the diverse academic contributions from across Asia.



SOUTHVILLE INTERNATIONAL SCHOOL AND COLLEGES

1281 Tropical Avenue corner Luxembourg Street,
BF International, Las Piñas City
COLLEGE DIVISION

ETHICAL CONSIDERATIONS

The dataset utilized for this analysis is publicly available through an open-source repository on Kaggle, which follows the data-sharing guidelines and permits the use of the information for educational and analytical purposes. Careful attention was given to avoiding misrepresentation of data or overgeneralization of findings. The potential implications of the findings were considered and this study is only for educational purposes and will be used responsibly with respect for regional contexts.

CONCLUSION

In conclusion, this analysis provides valuable insights into the performance of top Asian universities by discovering key trends in academic reputation, international collaboration, and student mobility. By learning about correlations between factors such as outbound student exchange, international research centers, and faculty diversity, the study shows the complex relationships that contribute to global competitiveness in higher education.



SOUTHVILLE INTERNATIONAL SCHOOL AND COLLEGES

1281 Tropical Avenue corner Luxembourg Street,
BF International, Las Piñas City
COLLEGE DIVISION

SOURCES

GeeksforGeeks. (2024, June 15). *Why is Data Science important ?* GeeksforGeeks.

<https://www.geeksforgeeks.org/why-is-data-science-important/>

Top Universities - QS Asian Rankings 2024. (2024, December 17). Kaggle.

<https://www.kaggle.com/datasets/bilalabdulmalik/top-300-asian-universities-qs-rankings-2024>

Okorie, N. G. N., Udeh, N. C. A., Adaga, N. E. M., DaraOjimba, N. O. D., & Oriekhoe, N. O. I.

(2024). ETHICAL CONSIDERATIONS IN DATA COLLECTION AND ANALYSIS: A REVIEW:

INVESTIGATING ETHICAL PRACTICES AND CHALLENGES IN MODERN DATA COLLECTION

AND ANALYSIS. *International Journal of Applied Research in Social Sciences*, 6(1), 1–22.

<https://doi.org/10.51594/ijarss.v6i1.688>

5 Principles of data Ethics for business. (2021, March 16). Business Insights Blog.

<https://online.hbs.edu/blog/post/data-ethics>

Lastiri, L. (2023, November 4). How to Calculate Performance Metrics: A comprehensive guide.

Kippy.

<https://www.kippy.cloud/post/how-to-calculate-performance-metrics-a-comprehensive-guide>