Analysis Introduction

Objective

This analysis will seek to measure the education, infrastructure, economic, healthcare and poverty levels of Western Europe and compare them to Eastern Europe based on pre filtered data from the world bank.

Introduction To Western Europe

Western Europe is a diverse region embedded with a rich and diverse. Known for its art, food, architecture and embrace of artisans that have helped shape the modern world in many ways ranging from culture to politics, and all that is in between. Western Europe has now become world renown for the rich culinary experience's visitors can embark on. Visitors and residents are often enamored by its picturesque natural and man-made wonders alike, where the preserved ancient wonders of the world are still alive and well in the busy metropolis of the modern life. But though it is important to know, and to understand the culture and history of a region we must also understand the statistical differences that help define this region in order to better understand our world and how we can make it a better place.

Methodology

Research

The first step taken in this analysis was to select the country that best represents the combined average of the entire Western European section. This country was selected based on five categories that were deemed important representations of a country, these were derived from the UN sustainable development goals:

- Poverty -> According to the UN poverty can severely limit someone's potential as well as reduce their quality of life.
- Education -> The UN categorizes education as a human right because it allows an individual to improve their life prospects and
- Technological Infrastructure ->Technology is one of the major pillars for implementing a better world, due to its heavy association with innovation, business opportunities and development of trade.
- Healthcare -> Important because it ensures a longer living population with a better standard of life
- Economic - > A countries economic level, increases the possibility of an individual to a better standard of life, socially, economically and mentally

Once the metrics for the five categories was defined and the best representative country was chosen, a comparison to Eastern Europe was conducted utilizing the same process as was conducted for Western

Europe. This comparison was done in order to highlight the difference that is expected in different global regions.

- Step 1: *Check the dataset*
- Step 2: *Group the Columns by Category*
- Step 3: *Filter the dataset*
- Step 4: *Find the NULL Value*
- Step 5: *Make a decision (Data Cleaning)*
    - Due to the presence of null values (missing inputs) and outliers this analysis took several steps in order to mitigate their impact on the final result, but it also sought to understand the reasoning for these outliers.
    - First missing values was checked to see if missing values represent over 5% of the data, in order to evaluate the reliability and accuracy of the data that is going to be processed.
    - The missing values were then inputted with the median value of all the other countries. The median was used instead of mean, in order to have a consistent approach throughout all analyzed columns, but to also take into account plausible skewedness that might be present in the data.
    - Outliers were identified through the use of a Box Plot. Each outlier was individually analyzed and explained in order to understand the reason behind the data's position in regard to the rest of the data set.

- Step 6: *Analysis the data to take the average value in each category*
- Step 7: *Pick top 10 Countries in each category*
- Step 8: *Make the intersection among the categories to pick the country stand for Western Europe*
- Step 9: *Find the outliers in each category and explain reason by research*
- Step 10: *Make comparison to Eastern Europe*
- Step 11: *Conclusion*

UK – A Representation of Western Europe

Upon seeing the data, we can conclude that, UK is the only country that is present across all the categories within top 10 countries whose value is closest to the mean in their respective categories. Rest of the countries like France, Netherlands and Germany are also present widely across categories, however, they are missing top 10 spot in one or more categories, thus, we cannot consider them to represent entire data. Thus, UK is the best representative candidate for western Europe.

Eastern Europe

Why Eastern Europe

Eastern Europe not only maintains the closest geographical proximity to Western Europe, but also has an intertwined history with them. Though there are many differences, there are many similarities, with most countries in both regions having their origins traced back to Romanic civilization and have largely at one point or another been Christian countries. Furthermore, a majority of the countries in both

regions belong to the European Union as well. Therefore, Eastern Europe is the perfect comparison to demonstrate the uniqueness of Western Europe.

Category Analysis (summary of findings)

- Healthcare

    - The population of Western Europe has greater access to improved sanitation facilities

- Education

    - Education in Western Europe is better than the Eastern Europe. And Most of the countries performance higher levels comparing with the Eastern Europe.

- Economic

    - The mean of Western European GNI per capital is three times larger than the Eastern European. Western Europe develops well comparing with Eastern Europe

- Infrastructure

    - Internet Users in the Western Europe has 15% bigger than the Eastern Europe. Many businesses in the Western Europe based on the Internet. Technology is m ore and more becoming an integral part of people's lives

- Poverty

    - The box plots between the proportion of income between Eastern and Western Europe, shows that Western Europe has overall an income share held by the lowest 20%, lower than that of Eastern Europe. This, combined with the lower mean for Western Europe signals a greater wealth disparity between the two regions. The standard deviation also shows that there is a smaller variation in terms income share in Western Europe, signaling that countries in Western Europe have similar level of income share among wealth classes, whereas in Eastern Europe countries are more likely to have different levels of income share among wealth classes

Conclusion

This analysis based on the UN's sustainable development goals sought to measure the education, healthcare, infrastructure, poverty, and economic levels of Western Europe in contrast to that of Eastern Europe. Overall, the analysis demonstrates a clear difference between the 2 regions, even though both regions are on the same continent, giving a clear indication that quality of life appears, in general, to be better for Western Europeans. In conclusion, because it is the only country to appear in all the "*top 10*" for every category, the UK is the country, that on average, best represents Western Europe. The analysis also clearly showed a reduced standard deviation in all categories for Western Europe, indicating that Western Europe offers its citizens a more standardized quality of life.