COVID-19 CASE ANALYSIS IN EUROPE

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INTRODUCTION

Utilizing the collection of public COVID-19 data maintained by Our World in Data, with the time series cluster method, a deep analysis were done for the insights specifically focused in Europe.

METHODS

1. The columns related to COVID-19 were extracted to be used as a core data-frame, and **imputed** if **NaN values** existed. The countries with not enough information were **discarded** from the data-frame.
2. The data was clustered with **time series analysis method** using TSLearn library. With the KMeans clustering method, the data was clustered into three different groups. The result was compared to the predefined clusters.
3. Three indexes: Family tree, Quality of life, and Health care were used to create the heat map with the predicted cluster.
4. Primary analysis was done focused on Germanic and Slavic regions.

RESULTS

- CASES Germanic countries were hit hard in the first wave, but managed to defend in the second wave with comparatively less new cases. Rather, Slavic countries had exact opposite result, having significant amount of new cases in the second wave.
- DEATH Majority of countries with low quality of life and health care tend to produce more death.
- HOSPITALIZATION The countries with low health care and low quality of life had extremely low Intensive Care Unit patients and hospitalizations due to the cost of health care.
- POSITIVE RATE Slavic countries had about 30% more positive rate in the second wave, while Germanic countries with high level of quality of life reduced positive rate by 4%.
- STRINGENCY INDEX Germanic countries had their stringency index high in the first wave, and lowered as time passed by and in progress. Majority of Slavic countries maintained their stringency index high in both waves. Only three countries with low level of heath care and quality of life had stringency index low all time.

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The countries with **higher quality of life,** mainly from **Germanic Region, saved 75% more lives** than others

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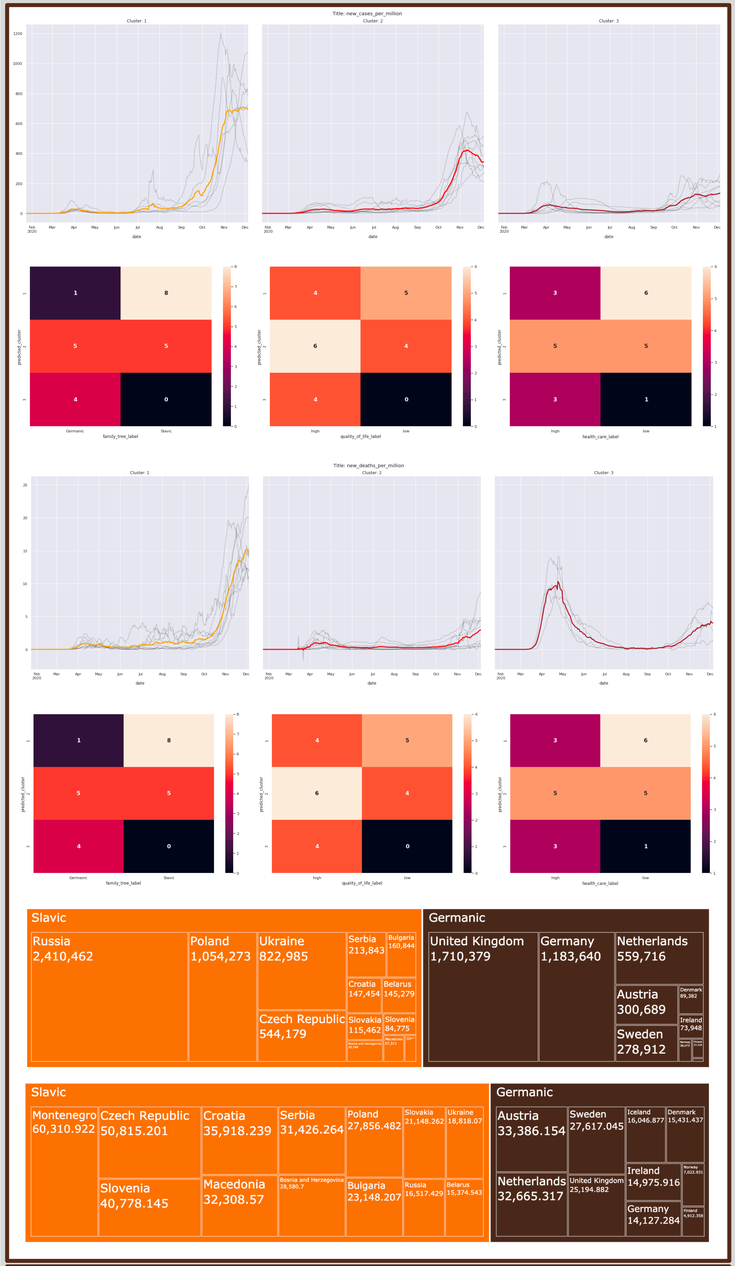

SUMMARY

The media is mainly focusing on the Romantic regions especially in Italy or Spain. With the analysis, it is clear that countries in Slavic Region are fighting with COVID-19 with high difficulty with low quality of life or low level of health care. According to the AP News, the ICU capacity is getting full, but we analyzed that the story of Slavic countries is not the same. More attention is needed in this area. Also, the countries with high level of quality of life or good health care is producing less new cases, especially in Germanic Region. Analysis of how well they are managing the pandemic situation is crucial.