## Project 7: COVID-19 using Cognos

**Project Objective:**

The primary objective of this project is to analyze COVID-19 cases and deaths data within the countries of the European Union and the European Economic Area (EU/EEA). The focus is on comparing and contrasting the mean values and standard deviations of cases and associated deaths per day and by country. This analysis aims to derive valuable insights to understand the impact of COVID-19 within this region and identify any significant patterns or variations.

**Analysis Objectives:**

* Mean Values Comparison:

Compare the mean values of COVID-19 cases per day across EU/EEA countries.

Compare the mean values of COVID-19 deaths per day across EU/EEA countries.

* Standard Deviations Comparison:

Contrast the standard deviations of COVID-19 cases per day across EU/EEA countries.

Contrast the standard deviations of COVID-19 deaths per day across EU/EEA countries.

**Data Collection:**

To achieve our analysis objectives, we will obtain a provided data file containing COVID-19 cases and deaths information per day and by country within the EU/EEA. It is essential to ensure the data's accuracy, completeness, and relevance to the project's goals.

**Visualization Strategy:**

Our visualization strategy involves leveraging IBM Cognos to create informative charts and graphs for representing the mean values and standard deviations effectively. We will consider the following approaches:

* Mean Values Visualization:

Utilize line charts or bar charts to display mean values of cases and deaths per day for each country, allowing easy comparisons.

* Standard Deviations Visualization:

Implement error bars in line or bar charts to represent the standard deviations, aiding in understanding the variations in the data.

**Insights Generation:**

To derive meaningful insights from the comparison of mean values and standard deviations of cases and deaths, we will undertake the following steps:

* Outlier Analysis:

Identify and investigate outliers in the data, particularly focusing on countries with significantly higher or lower mean values and standard deviations. Understanding these outliers may reveal unique situations or events that influenced the COVID-19 impact in those countries.

* Correlation between Cases and Deaths:

Explore the correlation between mean values of COVID-19 cases and deaths per day in different countries. A strong positive correlation might indicate a higher mortality rate in countries with more cases.

* Temporal Trends:

Analyze the temporal trends in mean values and standard deviations. Seasonal or temporal patterns can provide insights into how the pandemic evolved and was managed in various countries over time.

* Comparative Analysis:

Compare countries with high and low mean values and standard deviations to discern potential factors influencing the severity and variability of COVID-19 impact. Factors such as healthcare infrastructure, public health measures, demographics, and government responses could contribute to these differences.

* Impact of Interventions:

Investigate whether specific interventions, such as lockdowns, mask mandates, or vaccination campaigns, had a discernible impact on mean values and standard deviations. This can help understand the effectiveness of various measures in controlling the spread and reducing mortality.

* Identification of Hotspots:

Highlight countries with consistently high standard deviations, indicating fluctuations in COVID-19 cases and deaths. These countries may need targeted public health interventions due to the uncertain and varying nature of the pandemic.

* Comparison with Global Trends:

Compare the mean values and standard deviations observed in the EU/EEA with global trends to assess the region's relative performance and response to the pandemic.

**Conclusion:**

In conclusion, this project aimed to analyze COVID-19 cases and deaths data within the EU/EEA, focusing on mean values and standard deviations. Through thorough data collection, visualization, and insightful analysis, we uncovered variations, trends, and potential influencing factors. These insights serve as a valuable foundation for targeted interventions, strategic planning, and further research to mitigate the impact of the pandemic.