COVID-19 Spread Analysis Report

1. Introduction

The COVID-19 pandemic significantly impacted countries worldwide, with varying infection rates and case growth patterns. This report analyzes COVID-19 data to identify key trends, assess the spread of the virus, and explore the relationship between economic factors and infection rates.

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2. Data Overview

We used two datasets for this analysis:

1. **COVID-19 Confirmed Cases Dataset**: Contains global confirmed case counts by country over time.

2. **Worldwide Happiness Report**: Includes economic indicators such as GDP per capita, which can help assess the relationship between economic status and virus spread.

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3. Key Findings

3.1 Total Cases & Growth Trends

- The **United States (1.07M cases)** had the highest total COVID-19 cases, followed by **Spain and Italy**.

- **Brazil (55.87%) and Russia (50.78%)** had the fastest-growing outbreaks in the last 7 days.

- The **UK (18.61%) and Turkey (14.19%)** also showed high growth rates, indicating active spread.

3.2 Visualization Insights

- **Total Cases per Country**: A bar chart showed that the US had a significantly higher case count than other nations.

- **Growth Rate (%) in the Last 7 Days**: Brazil and Russia had the highest increase in new cases, suggesting worsening outbreaks.

3.3 Relationship Between GDP & Infection Rates

- A scatter plot analysis was performed to explore the correlation between **GDP per capita** and **maximum infection rates**.
- The analysis aimed to assess whether wealthier nations had higher or lower infection rates.

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4. Conclusion

- The US had the highest total COVID-19 cases, while Brazil and Russia showed rapid recent growth.
- High growth rates in countries like the UK and Turkey suggest continued spread.
- The economic analysis provided insights into whether GDP influences infection rates, but further research is needed to establish causality.

This report highlights key trends and provides a foundation for further investigations into economic and policy factors affecting COVID-19 spread.
