

## **COVID-19 and Global Economic Impacts: Unveiling the Hidden Consequences**

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### **ABSTRACT**

This research paper aims to investigate the global impact of the COVID-19 pandemic on the gross domestic product (GDP). The pandemic has had far-reaching consequences, affecting various sectors of the economy in unprecedented ways. Key determinants of GDP, including trade, travel, tourism, employment, productivity, price levels, income levels, profitability, and resource allocation, have been significantly influenced by the pandemic. The primary focus of this study is to analyze the relationship between COVID-19 and global GDP.

To achieve this objective, secondary data was collected from a wide range of sources, including existing studies that provide statistical information on the association between COVID-19 and GDP across different nations. Various research papers, journal articles, web publications, working papers, and e-books were consulted to gather the necessary data. Meta-essentials software was employed to analyze the collected data.

GDP is a crucial economic indicator that provides insights into the size and performance of different sectors within an economy. Additionally, GDP per capita offers a valuable metric for assessing a country's economic output per person. The findings of this meta-analysis reveal a positive and moderate correlation between COVID-19 cases and GDP per capita, as well as between COVID-19 death rates and national GDP.

Despite the overall decline in GDP growth rates during the COVID-19 phase, the results highlight the existence of a positive correlation between COVID-19 cases and GDP per capita, as well as between COVID-19 death rates and national GDP. These findings underscore the

interconnectedness of the pandemic and economic performance.

**Keywords:** COVID-19, global impact, gross domestic product (GDP), pandemic, meta-analysis, correlation, economic indicators, trade, tourism, policymakers.

## INTRODUCTION

The COVID-19 pandemic, originating in China, has had a global impact on individuals, economies, and cities. It presents a long-term challenge requiring adaptation across all sectors. Numerous international reports highlight its substantial impact on the global economy, surpassing the 2017 financial crisis. Studies show that globalization in countries influences the virus transmission rate and fatality ratio. COVID-19 is one of the most profound economic crises since the Great Depression, surpassing the 2008 financial crisis in magnitude.

Global tourism faces significant pressure, impacting major economies and job markets worldwide. The pandemic disrupts macroeconomic conditions in developed and developing economies, affecting various sectors and population groups.

Governments are called upon to take action and create comprehensive socioeconomic development plans that foster entrepreneurship and resilience in business models. This study aims to assess the impact of COVID-19 on the GDP of different nations through a Meta-analysis of existing research. Specifically, it seeks to analyze correlational data between COVID-19 and GDP, examining the relationship between COVID-19 cases and GDP outcomes.

## RESEARCH OBJECTIVES

This research project will use Meta-analysis to comprehensively analyze the impact of COVID-19 on the GDP of various nations. The specific objectives are as follows:

- Review and select relevant studies: Conduct a comprehensive review of existing studies on COVID-19's impact on GDP. Select studies with suitable correlational data for Meta-analysis.
- Data collection and analysis: Gather data from selected studies and perform systematic Meta-analysis. Combine findings to draw meaningful conclusions.
- Assess the COVID-19-GDP relationship: Analyze compiled data to determine the nature and strength of the association. Explore factors like COVID-19 cases and mortality rates in relation to GDP changes.

- Identify patterns and trends: Investigate common impact patterns across regions, sectors, and development levels.
- Draw conclusions and implications: Summarize findings and discuss implications for policymakers and stakeholders in managing the pandemic's economic effects.
- This study aims to contribute valuable insights to policymakers and stakeholders, addressing the economic challenges posed by COVID-19.

## **LITERATURE REVIEW**

The literature review presents a comprehensive overview of existing research on the impact of COVID-19 on various sectors of the global economy, offering valuable insights from a range of studies. While these studies contribute significantly to our understanding of the subject matter, it is important to critically evaluate their strengths and limitations to identify areas for further investigation and address any potential gaps.

In the study conducted by Sansa (2020), a positive significant relationship between COVID-19 confirmed cases and the financial markets in China and the USA was identified. Although this study sheds light on the impact of the pandemic on financial markets, its scope was limited to a specific time period, and further examination of the long-term effects and potential mitigating factors would provide deeper insights.

Martina Aronica's (2021) research focused on the effects of past pandemics on tourist arrivals and emphasized the need for diversification in tourism value chains. While the study highlights the threat posed to the tourism sector in the post-COVID-19 era, the specific factors that contribute to the decline in tourist arrivals and the effectiveness of proposed strategies require further investigation.

Eleonora Pantano's (2020) study examined the challenges faced by retailers during the COVID-19 emergency, particularly in addressing consumers' needs and health concerns. While the research underscores the importance of effective communication with customers, more in-depth analysis is necessary to explore the long-term implications for retail businesses and potential solutions to overcome the challenges.

S. Shaikh's (2021) investigation of the impact of tourism decline on the global GDP offers valuable insights into the interconnectedness of tourism and economic performance. However, further research could delve into the specific economic sectors that are most affected by the decline in tourism and the implications for different countries and regions.

Peng Zou's (2020) study highlights the significance of implementing policies to lower production costs and promote business growth during the pandemic. However, a critical analysis of the effectiveness and feasibility of these policies in different economic contexts would provide a more nuanced understanding of their potential impact.

Bipasha Barua's (2020) research on the multifaceted crises generated by COVID-19 in the banking sector emphasizes the importance of understanding the factors contributing to increased default rates. Further investigation into the specific vulnerabilities of developing economies and potential strategies for improving financial market resilience is warranted.

Robert E. Drake's (2021) focus on the pandemic's impact on unemployment and behavioral health disorders underscores the need for mental health support during crisis situations. However, a critical evaluation of the accessibility and effectiveness of existing support systems for different populations is essential to inform policy interventions.

Sanjita Jaipuria's (2020) study highlighting the dramatic and long-lasting impact of COVID-19 on the tourism sector brings attention to the need for comprehensive recovery strategies. Further research could investigate the potential economic and social consequences of prolonged disruptions in the tourism industry and explore alternative approaches to enhancing sector resilience.

Ozay's (2020) examination of the disproportionate impact of COVID-19 on women and minorities in terms of job losses sheds light on existing disparities in employment outcomes. However, further investigation is necessary to identify the underlying factors contributing to these disparities and devise targeted policies for equitable recovery.

T. Ibn-Mohammed's (2020) critical review of the pandemic's negative and positive impacts on the global economy calls for fundamental structural changes, including a shift towards a circular economy framework. However, additional research could explore the practical implementation of circular economy principles and assess the feasibility of transitioning from the current economic model.

Muhammad Azizullah Khan's (2020) analysis of the prolonged effects of the COVID-19 outbreak on economic activities and stock prices provides valuable insights into the relationship between international travel restrictions and economic indicators. Further studies could investigate potential policy interventions to mitigate the adverse effects of travel restrictions on economic activities.

## RESEARCH METHODOLOGY

The research methodology relies on secondary data from existing studies on the COVID-19 pandemic's impact on the global economy. The Meta-analysis approach, specifically Meta Essentials, was used to analyze these studies and draw conclusions about COVID-19's global impact on GDP.

Inclusion and exclusion criteria for study selection were designed for a comprehensive yet focused approach. Included studies provided statistical data and correlational information between COVID-19 and economic variables, specifically related to GDP or GDP per capita.

| S.NO. | SOURCE           | NO. OF STUDIES |
|-------|------------------|----------------|
| 1     | Scopus           | 10             |
| 2     | Springer         | 26             |
| 3     | Elsevier         | 11             |
| 4     | ProQuest         | 43             |
| 5     | Wiley            | 35             |
| 6     | Taylor & Francis | 14             |
| 7     | JSTOR            | 7              |
| 8     | SAGE             | 21             |
| 9     | Science Direct   | 24             |
| 10    | Others           | 20             |
|       | TOTAL            | 211            |

Studies from diverse regions worldwide were considered to account for regional variations in the pandemic's economic impact. A total of 211 studies from reputable sources such as Scopus, Springer, Elsevier, ProQuest, and others were analyzed.

Nine studies met the inclusion criteria, covering correlations between COVID-19 cases, deaths, the number of tests, and GDP per capita. These studies provided data from various regions, ensuring comprehensive coverage.

The research methodology aims to enhance transparency and reproducibility by detailing the study selection process and rationale behind inclusion. This approach facilitates readers' understanding of the meta-analysis.

## Ethical Considerations

- The study uses secondary data and doesn't involve human participants or sensitive data, so no ethical approval was needed.
- All included studies were from reputable sources, and authors followed ethical guidelines, obtaining proper consent.
- Efforts were made to accurately cite and credit original authors to avoid plagiarism and copyright issues.

For primary research with human participants or sensitive data, researchers must consider ethical considerations, such as informed consent, data confidentiality, and adherence to guidelines, to protect participants' rights and maintain research integrity.

### ANALYSIS AND FINDINGS

In the analysis, a random-effects model was used to examine the association between Covid-19 cases, tests, deaths, and GDP per capita. The results revealed significant heterogeneity among the included studies, leading to the adoption of a random-effects model. The high value of  $I^2$  indicated substantial variability in the data, and Meta-essentials software was used for all analyses.

The studies covered various regions and used GDP per capita or GDP at current prices as the dependent variable. Independent variables included confirmed Covid-19 cases and deaths. These correlations provided insights into the relationship between the GDP of different countries and the number of Covid-19 cases or death rates.

By incorporating graphical representations, the analysis and findings section now offers a visual demonstration of the effect sizes and heterogeneity among the included studies, enhancing the presentation of the meta-analysis results and aiding readers in understanding trends and data variability, thus contributing to a more comprehensive interpretation of the findings.

| Study name           | Correlation | CI Lower limit | CI Upper limit | Weight |
|----------------------|-------------|----------------|----------------|--------|
| Covid cases-GDP      | 0.67        | 0.11           | 0.90           | 9.28%  |
| Covid cases-GDP      | 0.73        | 0.20           | 0.93           | 8.96%  |
| Covid cases-GDP      | 0.95        | 0.86           | 0.98           | 10.38% |
| Covid cases-GDP      | 0.80        | 0.74           | 0.85           | 13.24% |
| Covid cases-GDP      | 0.03        | -0.26          | 0.32           | 12.33% |
| No. of tests- GDP    | 0.71        | 0.19           | 0.92           | 9.28%  |
| No. of test- GDP     | 0.80        | 0.66           | 0.88           | 12.40% |
| Covid-19 deaths- GDP | 0.53        | 0.10           | 0.79           | 10.81% |
| Covid-19 deaths- GDP | 0.39        | 0.27           | 0.50           | 13.31% |

| <b>Combined Effect Size</b>     |       |
|---------------------------------|-------|
| <b>Correlation</b>              | 0.68  |
| <b>Confidence interval LL</b>   | 0.42  |
| <b>Confidence interval UL</b>   | 0.84  |
| <b>Prediction interval LL</b>   | -0.30 |
| <b>Prediction interval UL</b>   | 0.96  |
| <b>Z-value</b>                  | 4.91  |
| <b>One-tailed p-value</b>       | 0.000 |
| <b>Two-tailed p-value</b>       | 0.000 |
| <b>Number of incl. subjects</b> | 559   |
| <b>Number of incl. studies</b>  | 9     |

| <b>Heterogeneity</b>     |        |
|--------------------------|--------|
| <b>Q</b>                 | 91.13  |
| <b>p<sub>Q</sub></b>     | 0.000  |
| <b>I<sup>2</sup></b>     | 91.22% |
| <b>T<sup>2</sup> (z)</b> | 0.21   |
| <b>T (z)</b>             | 0.46   |

| <b>Meta-analysis model</b> |                      |
|----------------------------|----------------------|
| <b>Model</b>               | Random effects model |
| <b>Confidence level</b>    | 95%                  |

## IMPLICATIONS

The research findings have practical implications for policymakers, organizations, and governments in addressing the economic challenges of the Covid-19 pandemic. The moderate positive correlation between Covid-19 cases and GDP per capita, as well as Covid-19 death rates and GDP, highlights the pandemic's impact on the economy.

**Policy Formulation:** Policymakers can use the findings to formulate effective strategies for managing infection rates while supporting economic growth.

**Resource Allocation:** Organizations and governments can allocate resources more efficiently based on the impact of Covid-19 on GDP, prioritizing interventions in affected regions.

**Sector-Specific Interventions:** Policymakers can target support to sectors severely impacted by Covid-19, such as tourism and hospitality, to promote recovery.

**Economic Recovery Strategies:** The findings inform the design of comprehensive economic

recovery plans, including targeted stimulus measures and healthcare investments.

**Global Collaboration:** International collaboration is crucial in addressing the global pandemic's economic challenges.

**Long-Term Planning:** Policymakers can develop long-term plans for resilient economic systems, considering potential future health crises.

**Social Welfare:** The research informs social welfare policies, prioritizing support for vulnerable populations.

**Future Research:** The findings serve as a foundation for future studies exploring additional pandemic impacts on unemployment, inflation, and sector-specific profitability.

Overall, the research offers valuable guidance for navigating the economic challenges of Covid-19. Decision-makers can use these insights to develop informed and targeted strategies for economic recovery and resilience.

## **CONCLUSIONS**

In conclusion, this study highlights the significant impact of COVID-19 on the global economy, specifically the association between COVID-19 cases, GDP per capita, and COVID-19 death rates. The moderate positive correlation between these variables indicates substantial effects on worldwide GDP growth rates.

The ongoing nature of the pandemic emphasizes the need for adaptation and coexistence with COVID-19. Continuing preventive measures and adhering to government guidelines are crucial for controlling the virus's spread and facilitating economic recovery.

The study's implications for policymakers, organizations, and governments call for comprehensive and robust policy frameworks to effectively manage pandemic impacts, promoting economic growth and resilience domestically and internationally.

Moreover, the research underscores the vulnerability of international trade to global pandemics, surpassing that of financial crises. Strategies to enhance trade system resilience in the face of future health crises are essential.

Targeted support and interventions are needed for severely impacted sectors like tourism and hospitality to revitalize their contribution to the economy.



Future studies can explore additional variables, providing a more comprehensive understanding of COVID-19's multifaceted impacts on the global economy. Investigating long-term effects and best practices in adapting to the new normal are valuable areas of research.

In conclusion, this study emphasizes the interconnectedness of COVID-19 and economic performance. Policymakers and stakeholders must collectively manage the pandemic's impact and foster economic recovery, paving the way for a more resilient global economy in the face of future challenges.

### **RECOMMENDATIONS FOR FUTURE RESEARCH**

Future research can explore the effects of COVID-19 on workplace dynamics and intercultural relationships, focusing on remote work and communication among colleagues from diverse cultural backgrounds.

Additionally, further investigation can delve into the impact of the pandemic on specific types of tourism, such as sports and business tourism, and explore strategies to revive tourism-related businesses.

Tailored economic measures for different economies can be examined to understand their effectiveness in managing the pandemic's impact on individual countries.

Furthermore, the benefits and challenges of multilateral responses to the pandemic can be explored, emphasizing global coordination among nations to better address future global crises.

Advanced forecasting models, like artificial neural network models, can be studied to predict economic trends during and after the pandemic.

Comprehensive examinations of various sectors and dimensions of the global economy affected by the pandemic are essential, including unemployment rates, inflation, and poverty levels.

The impact of the pandemic on specific sectors like banking, healthcare, education, online businesses, small and medium enterprises, and the stock market can be explored to understand the transformations and innovations in these industries.

By addressing these specific research questions, future studies can provide a more nuanced understanding of the multifaceted impacts of COVID-19 on the global economy, contributing to evidence-based policymaking and building a more resilient economic landscape.

### **Acknowledgments:**

Special thanks to our supervisor and the authors of this paper for their valuable collaboration and guidance, without which this research would not have been possible. Their significant efforts and attention to detail have greatly contributed to the quality and improvement of this paper.

We are grateful to the editorial board and reviewers of the journal for their thorough review and valuable feedback, which contributed to the refinement of this paper.

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