BIBLIOMETRIC ANALYSIS OF COVID-19 RESEARCH PUBLICATIONS

Akarsh Doddi, Amulya Bodempudi, Mimi Byun
Department of Information Science, University of North Texas - Denton

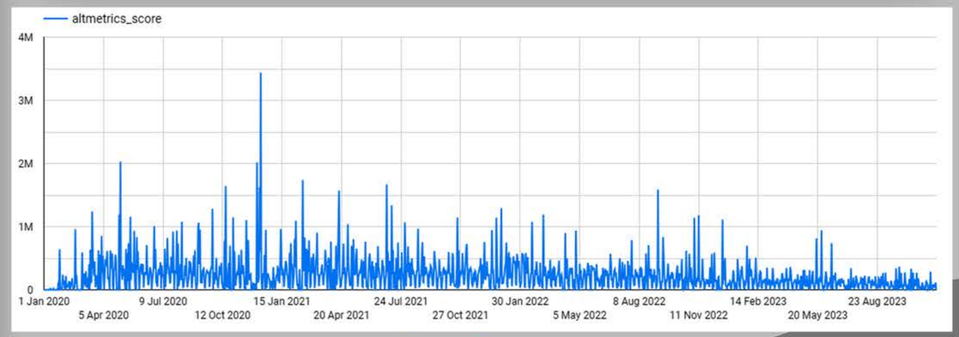
Abstract:
In order to determine patterns and implications, this study evaluates global COVID-19 research conducted between January 2020 and December 2022. The growth of publications has stabilized after a brief spike, indicating a variety of pandemic consequences. Highly referenced papers highlight interdisciplinary work in epidemiology, virology, public health, and medicine. To determine the priority for future study, the analysis looks at key term co-occurrence. The aforementioned emphasizes collaborative networks, evolving publication trends, and noteworthy personalities. These insights are critical for making strategic decisions and allocating resources in the context of international COVID-19 research. Additionally, the paper makes recommendations for future research implementations about the possible uses of AI tools in Automated Literature Review, Trend Analysis, Public Understanding, Semantic Search, and Data Mining.

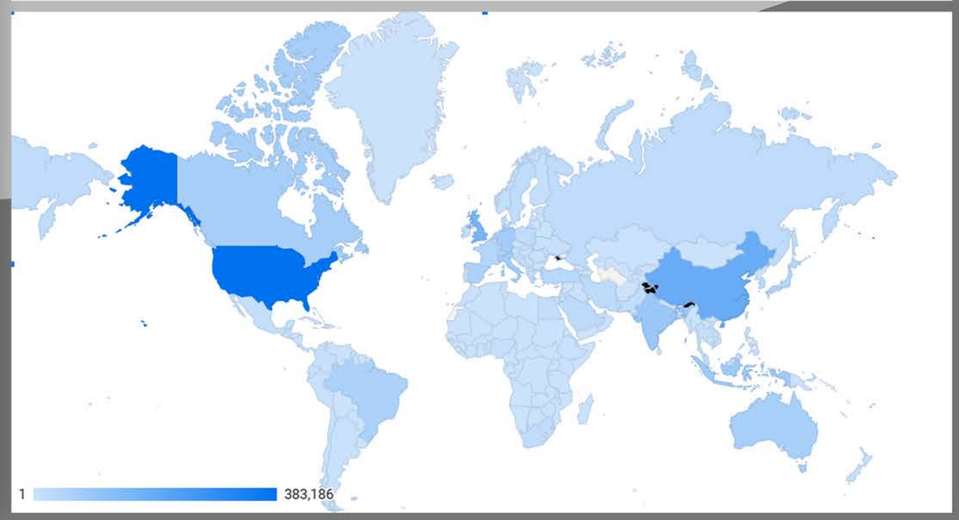
Methods:
Making use of BigQuery's capabilities and Dimensions AI's extensive COVID-19 dataset, I set out to extract meaningful insights from the massive amount of study data. I carefully selected and filtered papers in the papers dataset from Covid-19-dimensions-ai by creating precise queries, ensuring the data was accurate and free of null values. The foundation for a solid study that would highlight the nuances of COVID-19 research was established by this meticulous approach.
https://www.dimensions.ai/covid19/

Reference:
https://docs.dimensions.ai/bigquery/tutorials-covid.html

MIRS
Multi Disciplinary Information Research Symposium

Findings:
The analysis of the COVID-19 dataset has revealed some interesting insights. The data shows that the number of authors of COVID-19 research papers is growing rapidly, and that these authors are coming from all over the world. The data also shows that the altmetrics score for COVID-19 research papers is increasing over time. This suggests that COVID-19 research is having a significant impact on the public.
In addition, the analysis has found that the number of times cited by each publication varies greatly. This suggests that there is a wide range of quality in COVID-19 research. It is important to be aware of this when evaluating COVID-19 research findings.





Research Question:
How have the citation rates of COVID-19 research publications changed over time, and how do they compare to the citation rates of non-COVID-19 research publications?
Over time, there have been notable changes in the citation rates of research publications related to COVID-19. The COVID-19 research papers had a median citation rate of 120.79 in 2020, while the non-COVID-19 research publications had a median citation rate of 21.63. This indicates that in 2020, research papers related to COVID-19 were cited on average more than five times as frequently as research publications not related to COVID-19.
The COVID-19 research articles' median citation rate in 2021 was 77.14, which was still rather high. The median citation rate of non-COVID-19 research articles in 2021 was 21.83, which is still a significant increase from this.
What is the relationship between the altmetrics score and the number of times cited for COVID-19 research publications?
Based on the data in the image, there is a positive correlation between the altmetrics score and the number of times cited for COVID-19 research publications. This means that COVID-19 research papers with higher altmetrics scores are more likely to be cited by other researchers.
One possible explanation for this correlation is that altmetrics scores capture the attention and engagement of non-academic audiences, such as policymakers, clinicians, and the public. This increased visibility can lead to increased citations, as non-academic audiences are more likely to share and discuss research findings with their peers.
Overall, the data in the image suggests that altmetrics scores can be used to predict the citation impact of COVID-19 research papers. This information could be used by researchers to identify and prioritize COVID-19 research papers that are likely to have a significant impact on the field.