

COVID-19 AND ECONOMIC DEVELOPMENT – A BIBLIOMETRIC ANALYSIS

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Abstract *The main objective of this article is to identify ways to combat misinformation, especially during the COVID-19 pandemic in Romania. During the period analyzed, there was a plethora of articles, a large volume of information from dubious sources, and communications from institutions that changed from one day to the next. This new context for contemporary society favored the appearance of fake news. Thus, in this paper, we analyzed data from the point of view of bibliometric analysis. Combating misinformation is part of the modern challenges of society as the level of digitization has increased and online and social media platforms are often the only source of information for the 21st century citizen. The results revealed that the subject was highly analyzed and expressed a direct link between the pandemic and economic development. Scientists started paying attention to the correlation between the two to see how the countries were affected thus, the subject is quite new. In conclusion, if a century ago disinformation was presented in a certain form, today it is in a continuous metamorphosis according to technological evolution.*

Keywords: *bibliometric analysis, COVID-19, economy development, network, pandemic*

INTRODUCTION

The COVID-19 pandemic began in December 2019 in Wuhan City, Hubei Province, China. The virus that caused the disease was later found to be a new type of coronavirus called SARS-CoV-2. WHO officially declared the COVID-19 pandemic on 11 March 2020, as the virus had spread to more than 100 countries and territories. WHO officially declared the COVID-19 pandemic on 11 March 2020, as the virus had spread to more than 100 countries and territories. The COVID-19 pandemic had a significant impact on global public health, the economy and society as a whole [1, 2]. Many of the very severe economic effects were not due to the pandemic itself, but rather to measures taken around the world to combat it, ranging from relatively mild restrictions on movement and public gatherings to the closure of major cities. This meant a simultaneous attack on supply and demand.

During the blockades, people (especially those without formal employment contracts) were left without income, and unemployment rose sharply which led to a significant drop in consumer demand even after the blockades were lifted. Fiscal incentive measures have been adopted, such as aid packages for businesses, job subsidies, and financial help for affected individuals. In the meantime, central banks have pursued loose monetary policies and reduced interest rates to support the economy [3].

The pandemic has caused major disruptions to international commerce. Travel restrictions and the closure of borders have affected the movement of goods and services, and the reduced level of global economic activity has led to a decline in international trade [4]. It is important to note that the incidence of the pandemic varies by country and by the actions taken by governments to control the spread of the virus. Economic expectations remain fragile and it may take a significant period of time for the global economy to fully restore health. [5]

Such a collapse of economic activity inevitably affected the global financial system and brought about powerful changes in society. The classic point that financial markets are not only asymmetric but also imperfect because of imperfect information is borne out in practice. To limit the effects of the COVID-19 pandemic, countries around the

world have provided significant amounts of money to support large companies in distress. Other measures that have been taken include deferring tax payments for periods of 3-6 months, or not charging interest when due without further penalties. In some sectors there have been tax cuts and economic recovery mechanisms. All of these were aimed primarily at financial stability. [6]

The main objective of this article was to conduct a bibliometric analysis of articles related to the COVID-19 pandemic and economics published in the Web of Science (WoS) database. In order to achieve this goal, the following questions were addressed:

Q1. What was the evolution of scientific manuscripts on the subject of economic development in relation to the COVID-19 pandemic?

Q2. Which was the type of document mostly published by scientists?

Q3. Which countries focused most of their attention on the subject pandemic COVID-19?

Q4. What is the network map of the authors' keywords?

EXPERIMENTAL

Bibliometric analysis is our chosen method to link COVID-19 and economic development. This topic has had a period of high exposure across academic and social circles due to its strong impact. The bibliographic research was based on the Web of Science database because it is a credible source and the data provided has a high degree of accuracy. The sample was based on an applied keyword analysis that generated crucial data for the completion of the article. The keywords selected were "COVID-19" and "economy development", which gave a result of 3961 articles. The search generated a database that was downloaded in plain text with all the information provided (publication type, author, author keywords, abstract, researcher ID, and publication data cited). Further analysis and the results presented therefore show the evolution of publications on the COVID-19 pandemic and economic development, the types of frequently published documents, and the co-occurrence of keywords with the greatest impact on this topic. [7]

RESULTS

The beginning of the analysis refers to the productivity of the scientific community that was published in the last years. Thus, Figure 1 shows the number of articles which is 3961 after searching the Web of Science database. As it can be observed during the period under analysis there is a high level of publications in 2021 and 2022 respectively, with a massive decrease in 2023. The publication trend on this topic is closely linked to the evolution of the COVID-19 pandemic. The notoriety of the pandemic has dropped dramatically amid the outbreak of war in Ukraine. On the international media agenda, the topic of COVID-19 has been replaced by Russia's aggression against Ukraine. For this reason in 2023, we can see that only 429 articles were published compared to 1462 in 2022. [8]

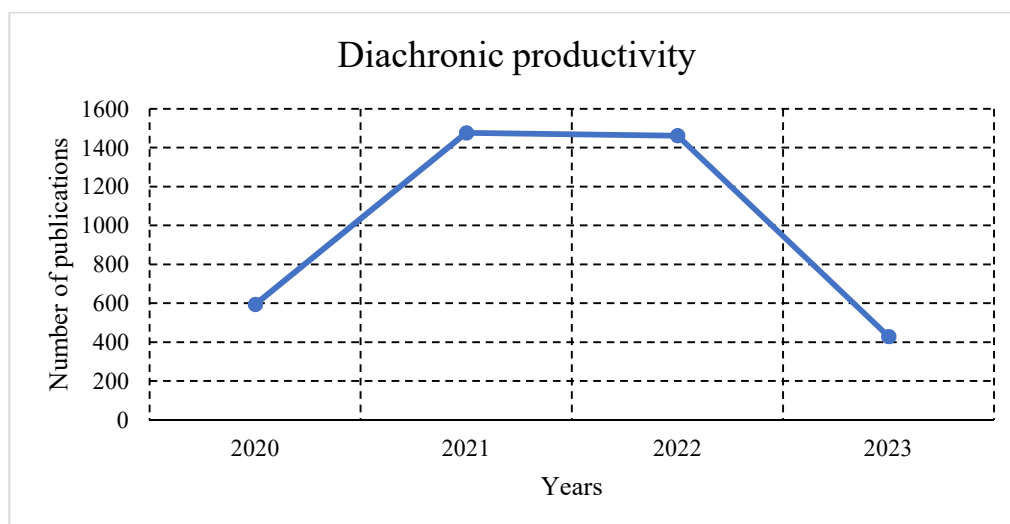


Figure 1: Diachronic productivity of COVID-19 and economy development published in Web of Science since 2020, Source: own creation.

Figure 2 represents a detailed analysis in terms of the type of documents published. Thus, of the 3961 documents published on the Covid-19 pandemic, 3184 are actual articles that have been distributed by authors to various journals, conferences etc. This ranking is followed by 407 review articles and 283 proceeding papers. An interesting trend can be seen in books that focus on the effects of the pandemic on the global economy. By 2023, only 20 books have been written due to a lack of accurate information, but also because of the short period since the virus was stopped. Looking ahead to the next period, the number of articles will remain low but will not disappear completely because the effects of the pandemic have not yet been truly felt. [8]

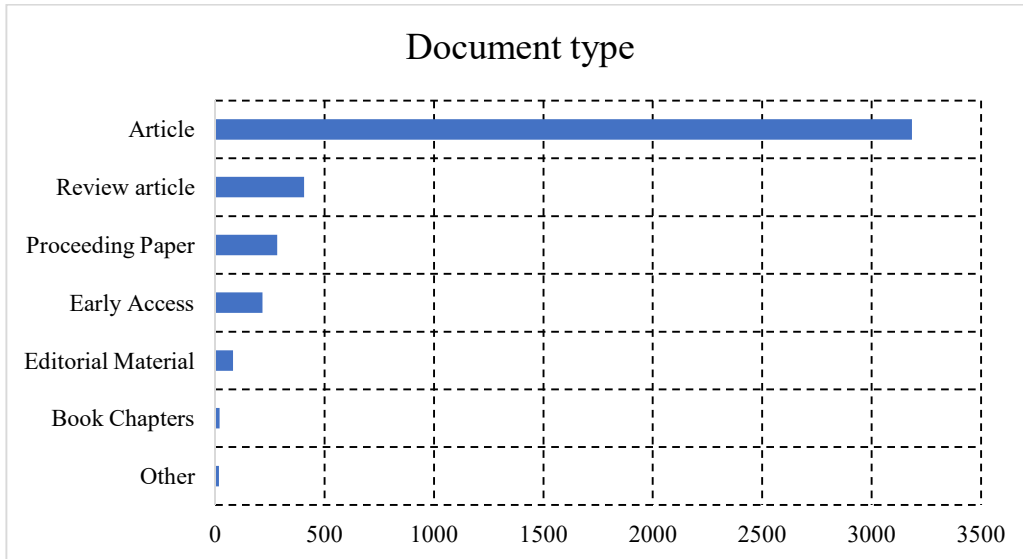


Figure 2: Type of document published in Web of Science since 2020, Source: own creation

When referring to the global pandemic context we must always consider China because it was the country most affected and with the strongest measures to stop the spread of the virus. Wuhan has been identified as the epicenter of the outbreak. The city has a large population and is a major transport hub, which has helped the virus spread rapidly. The Republic of China subsequently took extensive measures to control the pandemic, involving large-scale quarantine and isolation efforts, mass testing, contact surveillance and travel restrictions. These actions have contributed to a decrease in the case numbers in mainland China and the control of the epidemic in the country. [9]

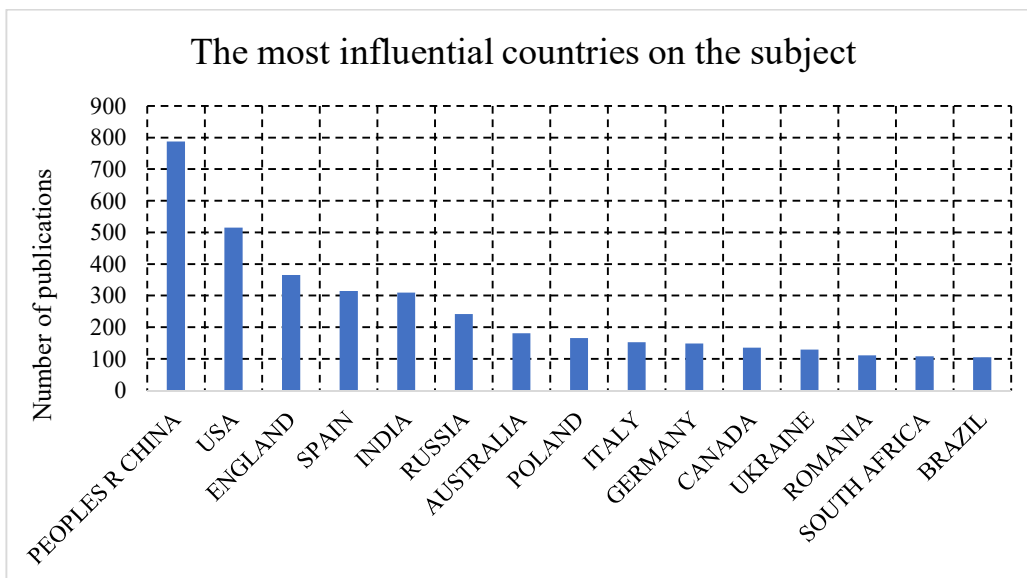


Figure 3: The most influential countries on the subject, Source: own creation

Figure 3 illustrates the number of publications by country. Here we should mention that the main media powers in the world are the United States and also China. This is also maintained in our analysis, as we can see that 787 articles were published in China, followed by the United States with 525 and England with 365. However, we

can see an association between the areas most affected by the virus and the frequency of articles. Italy is one of the countries most affected by the COVID-19 pandemic due to its elderly population. At the beginning of the pandemic in the spring of 2020, Italy was one of the leading European countries to suffer a high number of deaths and cases. Thus, we can see that in Italy the number of publications was 153, being in the top 10.

If we consider Romania, the COVID-19 epidemic had a considerable impact. Since March 2020, the nation has implemented several measures to control the spread of the virus and safeguard the population. Here again, we can observe a high level of academic activity with more than 100 articles published at the international level. [10]

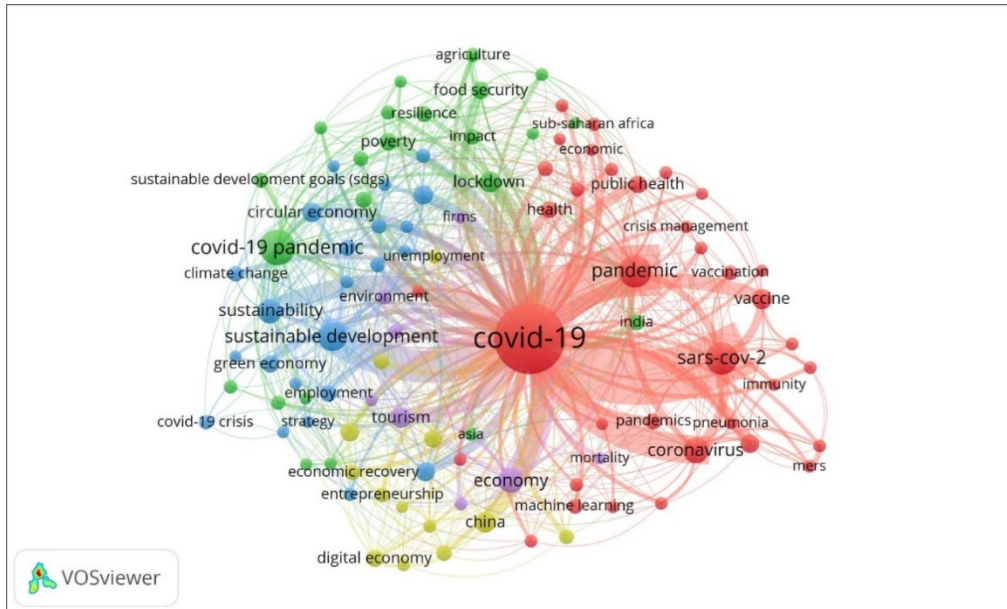


Figure 4: Network of all keyword's occurrence, Source: own creation

In relation to the network map, we analyzed the co-occurrence network, considering all keywords as the unit of analysis. The results given are displayed in Figure 4, made using the program VOSViewer. The results provided 2946 keywords, on which we applied a minimum of 5 co-occurrences of a keyword, which limited the results to 51 items used for the network. Analyzing the resulting clusters, we found that, for example, the highest cluster has 36 items, which is followed by a cluster of 23 items and another cluster of 23 items. If we refer to the first one the most used words are: covid - 19 with 741 references being the most used word, pandemic with 78, sars-cov 2 with 81, coronavirus with 42, covid - 19 pandemic with 104, economy with 39 and sustainability with 35. [11]

DISCUSSION

Regarding Q1, it should be noted that although the topic appeared in 2020, the number of articles increased sharply until the year of grace 2023. Also, the results revealed a steadily increasing interest from March 2020 until the beginning of 2023 where we can see a for this topic, perhaps also due to the fact that the European Union regulations on environmental protection are much tougher than before.

Regarding Q2, the results showed that a great source of information for the scientific community is mainly in scientific articles presenting mostly scientific results. However, when we refer to articles they often cannot be as documented compared to the book. Books on this topic start to appear from 2022 onwards.

As far as Q3 is concerned, the statistics show a strong association between the countries with the most cases of COVID-19 and the intensity of publications appearing on various communication channels. China and the US are again in the leading positions.

As for research question no Q4, the statistics reveal confirmation of the hypothesis on the strong association between the COVID-19 pandemic and economic development.

CONCLUSIONS

COVID-19 has had a significant impact on global economic development [12]. The pandemic has led to a series of restrictions and containment measures, resulting in business closures, restricted trade, and disrupted supply chains. These had a negative impact on economic growth, with significant recessions in many countries.

From the articles realized by the scientists it could be observed that due to restrictions on or bans on travel and major events, industries including tourism, transportation, and entertainment took the brunt of the damage. Additionally, closures and restrictions had a significant negative impact on small and medium-sized firms because many of them found it difficult to manage these difficulties and continue operating. [13]

However, the epidemic has opened doors for other industries, like technology and online retail. To survive, many organizations have forced to change their business models and concentrate on online channels. As a result, e-commerce and other digital services have increased, becoming increasingly important given the pandemic. Also, it is important to note that the COVID-19 pandemic accentuated and amplified existing economic inequalities. Vulnerable groups such as health workers, informal sector workers and low-income workers have been most affected. Developing countries were also generally more exposed to the negative economic impact of the pandemic because they had limited resources to cope with the crisis. [14]

COVID-19 has had a significant impact on economic development, generating recessions and challenges in many sectors and countries. However, the pandemic has also accelerated digital transformation and brought opportunities in some sectors. Thus, according to the research, we could see that the association between the two main keywords "COVID-19" and "economy development", was studied by many scientists trying to understand the process associated with it. The analysis of the co-occurrence network showed that it still is a subject of interest in many places in the world, still trying to come up with solutions to the way the economy evolved during COVID-19 or trying to impose some regulations that can reduce the impact presented in most of the analyzed articles.

In conclusion, the bibliometric analysis in this article provides a tool for researchers to study this crisis in detail at the international level. Also, the evolution of the pandemic in the field of economics implies that all industries will have to adapt at some point, and society must adapt each time a similar situation arises. The impact on a certain domain would bring great value to the scientific community, thus further research should address such analysis on a focused industry.

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