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Impact of COVID-19 on Global Economy: A Scientometric Analysis of Global Literature

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The study analysed 3092 global publications on the theme 'Impact of COVID-19 on the Global Economy', based on data extracted from the Scopus database during 2020-21. The authors identified key participating countries, organisations, authors and journals and studied their collaborative linkages. The structure of the field has been depicted by identifying significant keywords and studying their co-occurrences to identify the trends in research. A summary of the study throws light on research opportunities and implications for businesses and policy-makers.

Keywords: *COVID-19, Impact, Global Economy, Global Publications, Scientometrics, Bibliometrics.*

1 INTRODUCTION

The Coronavirus disease 2019 (COVID-19) outbreak shocked the world since the first reported case in Wuhan, China, in December 2019. Since then, the COVID-19 virus has spread worldwide, impacted all sectors of the economy, and changed the various aspects of human life. The COVID-19 crisis, in turn, affects the world economy severely since governments around the world have been making different policies to tackle the pandemic. The COVID-19 pandemic and related economic and financial crisis are different from others; the gravity of this pandemic, its high contagiousness, and a large number of infections and deaths resulting from it all contribute to the instability in the market and economy [1]. Globally, as of July 2nd2021, there have been 182,319,261 confirmed cases of COVID-19, including 3,954,324 deaths, reported to WHO[2]. Moreover, with the recent advancements in technology, all sorts of news and information regarding the pandemic reach all corners of the world quickly and in no time.

The United Nations earlier forecasted that the COVID-19 pandemic will shrink the world economy by 3.2 per cent contraction -5 per cent in developing countries

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and 0.7 per cent of GDP in developing countries in the global economy in 2020, the sharpest contraction since the Great Depression in the 1930s. The U.N.'s mid-year report said the impact of the coronavirus crisis is expected to slash global economic output by nearly $8.5 trillion over the next two years, wiping out almost all the gains of the last four years. With the large-scale restrictions of economic activities and heightened uncertainties, the global economy has come to a virtual standstill. Today, we face the grim reality of a severe recession of a magnitude not seen since the Great Depression. According to the report, nearly 90 per cent of the world economy has been under some form of lock-down, disrupting supply chains, depressing consumer demand and putting millions out of work[3].

The scope and speed with which the COVID-19 pandemic and economic shutdowns have devastated the poor around the world are unprecedented in modern times. Estimates show that 60 million people could be pushed into extreme poverty in 2020. These estimates are likely to rise further with the reopening of advanced economies. In the long-term, the pandemic will leave lasting damage through multiple channels, including lower investment, erosion of physical and human capital due to the closure of businesses and loss of schooling and jobs, and a retreat from global trade and supply linkages. These effects will lower potential output – the output an economy can sustain at full employment and capacity – and labour productivity well into the future.

Pre-existing vulnerabilities, fading demographic dividends and structural bottlenecks will amplify the long-term damage of deep recessions associated with the pandemic[4].Accordingly, it is becoming challenging for most businesses worldwide to keep their financial wheels rolling, given reduced revenues and high uncertainty [5]. Therefore, being a health-related issue, the economic consequences of the COVID-19 pandemic pose a major question for the current and future.

11 REVIEW OF LITERATURE

A significant amount of research has been conducted on various Coronavirus diseases like SARS and MERS and, of late on COVID-19.Among bibliometric studies on this theme, Shettar and Hadagali[6]examined global research output (18116 records) on Coronavirus till December 31, 2019, using various indicators. The study found a direct relationship between the acceleration in the research publications and Coronavirus outbreaks, i.e. one during the SARS outbreak (2003-04) and another during the MERS outbreak (2012–15). Gupta et al. [7] evaluated global research output (103054 records) on COVID-19 and presented a bibliometric profile of most influential countries, organisations, authors and journals and their collaborative linkages, besides identifying broad subject areas of research, most significant keywords and highly-cited papers related to COVID-19.

A few bibliometric studies have been carried output on the impact of COVID-19 on the economy and management. Considering the economic significance of the pandemic, Mahi, Mobin, Habib and Akter [8] examined 1636 global publications from the WoS database in economics starting from 1974 using bibliometric analysis,

covering the period of earlier pandemics or epidemics that have a close association with COVID-19. The authors analyse key information related to the contributors at different levels, including author, institution, country, and publication sources, besides identifying the historical concentration of research using scientific clustering and illustrate transformations at different times. Alshater, Atayah and Khan [9] presented a review of COVID-19 business-related research (477 articles) and identified the most relevant and influential authors, articles, institutions, journals, and countries, besides identifying intellectual structure in six sub-themes. Handoko[10] studied 1719 articles on COVID-19 in two subject areas: (i) economics, econometrics, and finance and (ii) business, management, and accounting. The major focus of the study was in identifying the most productive and influential journals, countries, institutions, documents, and clusters of keywords using VOSviewer.

To better understand the economic crisis and develop feasible solutions, there is an urge to undertake more comprehensive studies to analyse different facets of COVID-19.However, there are only a few previous bibliometric reviews that comprehensively study the coronavirus literature in economics. Hence, this study makes a humble effort to analyse existing literature in the field of economics on COVID-19. The main objectives of this study are to identify the most productive and significant countries, organisations, authors, and publication sources. It also studies the interconnection between institutions, countries, and publication sources. Furthermore, we analyse the conceptual structure of research through the correspondence analysis of keywords to understand the most prominent research clusters.

2 METHODOLOGY

For this study, the bibliographic data were identified, retrieved and downloaded using a well-defined search strategy from the Scopus database shown below. The search yielded 3092 records, which was later downloaded in the CSV (comma-separated values) file format and further statistically analysed using MS Excel. VoSViewer and Biblioshiny App of R Studio, science mapping and visualisation tools and several mathematical formulae to compute the multiple indicators adopted in the study.

Title (“COVID 19” or “2019 novel coronavirus” or “coronavirus 2019” or “coronavirus disease 2019” or “2019-novel CoV” or “2019 ncov” orcovid 2019 or covid19 or “corona virus 2019” or ncov-2019 or ncov2019 or “nCoV 2019” or 2019-ncov or covid-19 or “Severe acute respiratory syndrome coronavirus 2” or “SARS-CoV-2”) or Key (“COVID 19” or “2019 novel coronavirus” or “coronavirus 2019” or “coronavirus disease 2019” or “2019-novel CoV” or “2019 ncov” orcovid 2019 or covid19 or “corona virus 2019” or ncov-2019 or ncov2019 or “nCoV 2019” or 2019- ncov or covid-19 or “Severe acute respiratory syndrome coronavirus 2” or “SARS-CoV-2”) and (Limit-To (Subarea , “Econ”))

3 DATA ANALYSIS

31 OVERALL PICTURE

The global output on the theme 'Impact of COVID-19 on the Economy' resulted in 3092 records (2020=1424 and 2021=1668) which received 11,400 citations, averaging 3.69 citations per paper. Of the 3092 global records, 519 (16.79%) received extramural funding support from 150+ research agencies. The 519 funded papers have received 3469 citations, averaging 6.68 citations per paper. The major funding agencies providing financial support along with their output were: National Natural Science Foundation of China (89 papers), European Commission (47 papers), Ministry of Education of the People's Republic of China (45 papers), National Office for Philosophy and Social Sciences (34 papers), Ministry of Finance (28 papers), Fundamental Research Funds for the Central Universities (27 papers), UK Research and Innovation (25 papers), Economic and Social Research Council (20 papers), Ministry of Education, Culture, Sports, Science and Technology (20 papers), Japan Society for the Promotion of Science (19 papers), etc.

Of the total output, articles contributed 83.02% (2567) global share, followed by reviews (6.18%), book chapters (3.56%), and the rest by others document types (Table 1).

32 PROFILE OF TOP 10 MOST PRODUCTIVE COUNTRIES

One hundred twenty-seven countries participated unevenlyon 'Impact of COVID-19 on Economy': 54 countries contributed 1-5 papers each, 10

countries 6-10 papers each, 21 countries 11-20 papers each, 6 countries 100-200 papers each and 4 countries contributed more than 259 papers each. The USA is the only country that contributed 208-622 papers.

The top 10 countries contributed 108 to 622 and together contributed 77.59% and 99.2% share in global publications and citations. The USA contributed the largest publication share (77.59%) to the global output, followed by the U.K. (11.32%), India (9.61%), China (8.41%), Italy (6.40%), Australia, Germany, Russian Federation, Canada and France (from 3.49% to 5.60%). Six out of 10 countries registered citation per paper and relative citation index above their group average (4.71 and 1.28): China (8.22 and 2.23), Canada (7.39 and 2.0), Australia (6.41 and 1.74), France (5.54 and 1.5), U.K.(5.24 and 1.42) and USA (4.75 and 1.29). The international collaborative publications (ICP) share of the top 10 countries varied from 22.56 to 74.07, with an average of 46.69%.

Table 1:Profile of Top 10 Most Productive Countries: Publications, International Collaborations and Citations

S. No.	Name of the Country	TP	TC	CPP	%TP	ICP	%ICP	RCI
1	USA	622	2953	4.75	77.59	289	46.46	1.29
2	U.K.	350	1835	5.24	11.32	206	58.86	1.42
3	India	297	689	2.32	9.61	67	22.56	0.63
4	China	260	2138	8.22	8.41	131	50.38	2.23
5	Italy	198	490	2.47	6.40	80	40.40	0.67
6	Australia	173	1109	6.41	5.60	86	49.71	1.74
7	Germany	166	557	3.36	5.37	95	57.23	0.91
8	Russian Federation	114	120	1.05	3.69	35	30.70	0.29
9	Canada	111	820	7.39	3.59	51	45.95	2.00
10	France	108	598	5.54	3.49	80	74.07	1.50
	Total of top 10 countries	2399	11309	4.71	77.59	1120	46.69	1.28
	Global total	3092	11400	3.69				
	Share of top 10 countries in global total	77.59	99.20					

TP: Total Publications; TC: Total Citations; ACPP: Average Citations Per Paper; ICP: International Collaborative Publications; RCI=Relative Citation Index

321 COLLABORATIVE LINKAGES AMONG THE TOP 10 COUNTRIES IN RESEARCH

All the top 10 countries have one to one collaborative linkages among themselves, and their total collaborative linkages varied from 27 to 195. The individual country to country collaborative linkages varied from 1 to 64. The top 3 countries with the largest collaborative linkages (254, 195 and 96) were the USA, the U.K., and China. The top 3 countries with the least collaborative linkages (27, 49 and 63) were Russia Federation, India and Canada. Among country-to-country linkages, the USA and the U.K. registered the largest number of collaborative linkages (64), followed by the USA and China (45 linkages), USA and Germany (28 linkages), etc.(Table 2). Figure 1 represents a networks map of the top 10 most productive countries, generated using the VOS viewer software tool. Based on the number of publications, the size of the circle represents the country, and the thickness of links between the countries represents the strength of their collaboration. Network visualisation of countries is grouped into two clusters of five, each based on their collaborations. Cluster 1 in red colour represents the USA, India, China, Australia and Canada and Cluster 2 in green colour the UK, Germany, France, Russia and

Italy. A line between the two countries indicates their collaborative linkages in research. The thickness of lines connecting the countries indicates the degree of their co-authorship in publications. The USA leads the table for the highest, i.e. 254 collaborative linkages among the top 10 productive countries, followed by the United Kingdom (195) and China (96); Indonesia has recorded the lowest, i.e. 10 collaborative linkages. The United States, the United Kingdom, China, Australia, Germany and France collaborated with all the other 9 countries listed in the top 10 productive countries. USA-UK registered the highest 64 collaborative linkages between the countries, followed by USA-China (45 linkages); UK-Italy (36 linkages); USA-Germany (28 linkages) and USA-Italy (27 linkages) (Table 2).

Table 2:Collaborative Linkages among the top 10 Countries in Research

S. No.	Country	Number of Collaborative linkages with other countries	TCL (NOC)
1	United States	2(64); 3(22); 4(45); 5(27); 6(22); 7(28); 8(6); 9(23); 10(17);	254 (9)
2	United Kingdom	1(64); 3(9); 4(10); 5(36); 6(18); 7(23); 8(4); 9(14); 10(17);	195 (9)
3	India	1(22); 2(9); 4(4); 5(2); 6(7); 7(1); 9(2); 10(2);	49 (8)
4	China	1(45); 2(10); 3(4); 5(2); 6(15); 7(7); 8(2); 9(4); 10(7);	96 (9)
5	Italy	1(27); 2(36); 3(2); 4(2); 6(5); 7(11); 8(2); 10(5);	90 (8)
6	Australia	1(22); 2(18); 3(7); 4(15); 5(5); 7(9); 8(1); 9(12); 10(4);	93 (9)
7	Germany	1(28); 2(23); 3(1); 4(7); 5(11); 6(9); 8(3); 9(4); 10(8);	94 (9)
8	Russian Federation	1(6); 2(4); 4(2); 5(2); 6(1); 7(3); 9(1); 10(8);	27 (8)
9	Canada	1(23); 2(14); 3(2); 4(4); 6(12); 7(4); 8(1); 10(3);	63 (8)
10	France	1(17); 2(17); 3(2); 4(7); 5(5); 6(4); 7(8); 8(8); 9(3);	71 (9)

TCL: Total collaborative linkages; NOC: Number of Countries

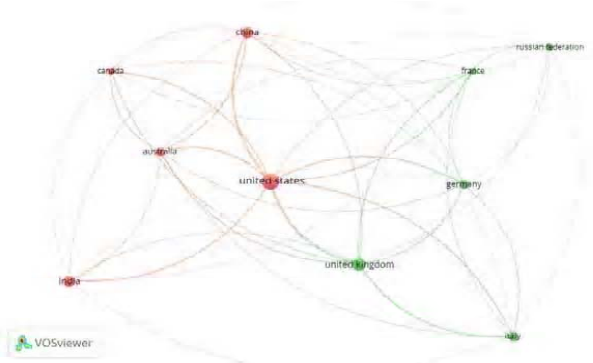

Fig 1. Networks Map of Top-10 Most Productive Countries

33 PROFILE OF TOP 15 MOST PRODUCTIVE ORGANISATIONS

In all, 2544 organisations participated in global research, of which the top 15 most productive organisations contributed, from 18 to 46 publications per organisation and together account for 10.41% (322 papers) share and 14.11% (1608 citations) share in global publications and citations on this theme (Table 3). On further analysis, it was observed that:

- Five organisations have contributed publication above the group average productivity (21.47): University of Oxford, U.K.(46 papers), University of Economics, Vietnam (29 papers), Cairo University, Egypt (26 papers), National Bureau of Economic Research, U.K.(25 papers) and National Research University Higher School of Economics, Russia Federation(22 papers);
- Six organisations have registered average citation per paper and relative citation index above their group average (4.99 and 1.35): University of Economics, Vietnam (12.52 and 3.39), The University of Sydney, Australia (10.45 and 2.83), University College London, U.K. (8.55 and 2.32), National Bureau of Economic Research, U.K. (8.44 and 2.29), London School of Economics, U.K. (7.94 and 2.15) and University of Oxford, U.K (7.59 and 2.06); and
- Nine organisations registered international collaborative papers share above their group average (45.34): University of Economics, Vietnam (86.21%), Centre for Economic Policy Research, London, U.K. (75.0 %), The University of Jordan (61.11%), University of Melbourne, Australia (60.0 %), The University of Sydney, Australia (55.0%), University of Oxford, U.K.(52.17%), National Bureau of Economic Research, U.K.(52.0%), University College London, U.K. and London School of Economics, U.K.(50.0% each) (Table 4).

Table 3: Top 15 Most Productive Organisations

S. No	Name of Organisation	TP	TC	CPP	ICP	%ICP	RCI	TCL
1	University of Oxford, U.K.	46	349	7.59	24	52.17	2.06	109
2	University of Economics, Vietnam	29	363	12.52	25	86.21	3.39	90
3	Cairo University, Egypt	26	3	0.12	4	15.38	0.03	70
4	National Bureau of Economic Research, U.K.	25	211	8.44	13	52.00	2.29	94
5	National Research University Higher School of Economics, Russia Federation	22	26	1.18	5	22.73	0.32	24
6	SapienzaUniversità di Roma, Italy	21	14	0.67	7	33.33	0.18	50
7	Centre for Economic Policy Research, London, U.K.	20	45	2.25	15	75.00	0.61	63
8	University College London, U.K.	20	171	8.55	10	50.00	2.32	42
9	The University of Sydney, Australia	20	209	10.45	11	55.00	2.83	77
10	University of Melbourne, Australia	20	61	3.05	12	60.00	0.83	61
11	Scientific Research Group in Egypt	19	3	0.16	3	15.79	0.04	53
12	London School of Economics, U.K.	18	143	7.94	9	50.00	2.15	46
13	Russian Academy of Sciences	18	7	0.39	5	27.78	0.11	40
14	Helwan University, Egypt	18	3	0.17	3	16.67	0.05	50
15	The University of Jordan	18	5	0.28	11	61.11	0.08	29
	Total of top 15 organisations	322	1608	4.99	146	45.34	1.35	898
	Global total	3092	11400	3.69				
	Share of top 15 organisations in global total	10.41	14.11					

TP: Total Publications; TC: Total Citations; ACPP: Average Citations Per Paper; ICP: International Collaborative Publications; RCI=Relative Citation Index; TCL=Total collaborative linkages-

331 COLLABORATIVE LINKAGES AMONG TOP 15 ORGANISATIONS

Except for three, all other 12 organisations have one to one collaborative linkages among themselves. Their total collaborative linkages varied from 1 to 36, and individual organisation to organisation collaborative linkages varied from 1 to 18. The three organisations with the largest collaborative linkages (36, 30 and 30) were The Cairo University, Scientific Research Group in Egypt and Helwan University. At the organisation-to-organisation level, The Cairo University-Scientific Research Group in Egypt and Cairo University-Helwan University registered the highest number of collaborative linkages (18 each), followed by Scientific Research Group in Egypt-Helwan University, Egypt (12 linkages), University of Oxford, U.K. and Centre for Economic Policy Research (4 linkages), etc. (Table 4).

Table 4. Collaborative Linkages among Top 15 Organisations

S. No.	Name of Organisation	Number of collaborative linkages with other organisations	TCL (NOO)
1	University of Oxford, U.K.	5(1), 7(4), 8(1); 9(1), 10(1), 12(3)	11 (6)
2	University of Economics, Vietnam	9(2)	2 (1)
3	Cairo University, Egypt	11(18), 14(18)	36 (2)
4	National Bureau of Economic Research, U.K.	7(3), 12(1)	4 (1)
5	National Research University Higher School of Economics, Russia Federation	1(1)	1 (1)
7	Centre for Economic Policy Research, London, U.K.	1(4), 4(3), 9(1), 12(1)	9 (4)
8	University College London, U.K.	1(1), 10(1)	2 (2)
9	The University of Sydney, Australia	1(1), 2(2), 7(1), 10(3)	7 (4)
10	University of Melbourne, Australia	1(1), 8(1), 9(3)	5 (3)
11	Scientific Research Group in Egypt	3(18), 14(12)	30 (2)
12	London School of Economics and Political Science, U.K.	1(3), 4(1), 7(1)	5 (3)
14	Helwan University, Egypt	3(18), 11(12)	30 (2)

34 PROFILE OF TOP 15 MOST PRODUCTIVE AUTHORS

A total of 7111 authors participated in global research on this theme, of which 6254 authors published only one paper each, 630 authors 2 papers each, 116 authors 3 papers each, 51 authors 4 papers each and 59 authors more than 5 papers each. The top 15 most productive authors published 6 to 25 publications

per author and together account for 4.72% (146 papers) share and 9.10% (1037 citations) share in global publications and citations on this theme (Table 5). On further analysis, it was observed that:

- Six authors have contributed publications above the group average productivity (9.73): Aboul Ella Hassanien (25 papers), Ashraf Darwish (14 papers), Afees Adebare Salisu (13 papers), XuanVinh Vo, Elie Bouri and Muhammad Alshurideh (10 papers each);
- Eight authors have registered average citations per paper and relative citation index above their group average (7.10 and 1.92): S. Corbet (33.86 and 9.18), Renatas Kizys (14.83 and 4.02), Toan Luu Duc Huynh (13.44 and 3.64), Adam Zaremba (12.43 and 3.37), Afees Adebare Salisu (11.38 and 3.09), Sneha Gautam (.75 and 2.64), Nawazish Mirza (9.33 and 2.53) and Xuan Vinh Vo (7.4 and 2.01); and
- Ten authors registered international collaborative papers share above their group average (62.33): Elie Bouri, Muhammad Alshurideh, S. Corbet. Adam Zaremba, Zaghum Umar Zayed, RenatasKizys and Nawazish Mirza (100.0% each), XuanVinhVo(9 0 . 0 %), ToanLuuDuc Huynh (88.89%) and MariyaGubareva (66.67%) (Table 6).

Table 5: Top 15 Most Productive Authors

S.No.	Name of the author	Affiliation of the Author	TP	TC	CPP	ICP	%ICP	RCI	TCL
1	Aboul Ella Hassanien	Cairo University, Cairo, Egypt	25	3	0.12	3	12.00	0.03	61
2	Ashraf Darwish	Helwan University, Cairo, Egypt	14	1	0.07	0	0.00	0.02	26
3	AfeesAdebareSalisu	University of Ibadan, Ibadan, Nigeria	13	148	11.38	8	61.54	3.09	23
4	XuanVinh Vo	University of Economics, Ho Chi Minh City, Viet Nam	10	74	7.40	9	90.00	2.01	21
5	ElieBouri	Lebanese American University, Beirut, Lebanon	10	44	4.40	10	100.00	1.19	30
6	Muhammad Alshurideh	The University of Jordan, Amman, Jordan	10	0	0.00	10	100.00	0.00	31
7	ToanLuuDuc Huynh	WHU - Otto Beisheim School of Management, Vallendar, Germany	9	121	13.44	8	88.89	3.64	17
8	SnehaGautam	Karunya Institute of Technology and Sciences, Coimbatore, India	8	78	9.75	3	37.50	2.64	39

9	Vanessa Ratten	La Trobe University, Melbourne, Australia	8	43	5.38	3	37.50	1.46	11
10	S. Corbet	Dublin City University, Dublin, Ireland	7	237	33.86	7	100.00	9.18	21
11	Adam Zaremba	Poznań University of Economics and Business, Poznan, Poland	7	87	12.43	7	100.00	3.37	20
12	Zaghum Umar	Zayed University, Dubai, UAE	7	28	4.00	7	100.00	1.08	11
13	RenatasKizys	Southampton Business School, Southampton, U.K.	6	89	14.83	6	100.00	4.02	18
14	NawazishMirza	La Rochelle Business School, La Rochelle, France	6	56	9.33	6	100.00	2.53	17
15	MariyaGubareva	InstitutoPolitécnico de Lisboa, Lisbon, Portugal	6	28	4.67	4	66.67	1.26	4
	Total of top 15 authors		146	1037	7.10	91	62.33	1.92	350
	Global total		3092	11400	3.69				
	Share of top 15 authors in global total		4.72	9.10					
TP: Total Publications; TC: Total Citations; ACPP: Average Citations Per Paper; ICP: International Collaborative Publications; RCI=Relative Citation Index; TCL=Total collaborative linkages									

341 COLLABORATIVE LINKAGES AMONG TOP 15 AUTHORS

Except for six, all other 9 authors have one to one collaborative linkages among themselves. Their total collaborative linkages varied from 1 to 14, and individual author to author collaborative linkages varied from 1 to 14. The three authors with the largest collaborative linkages (14, 14 and 7) were A.E. Hassanien, A. Darwish and Z. Umar. At the author-to-author level, A.E. Hassanien and A. Darwish registered the highest number of collaborative linkages (14), followed by A. Zaremba and R. Kizys (5 linkages), etc. Figure 4 depicts the networks collaboration map of the 9 authors (Table 6).

Table 6: Collaborative Linkages among Top 15 Authors

S. No	Name of Author	Number of collaborative linkages with other authors	TCL (NOA)
1	A.E. Hassanien.	2(14)	14 (1(
2	A. Darwish	1(14)	14 (1)
3	A.A. Salisu	4(4)	4 (1)
4	X.V. Vo	3(4), 5(1)	5 (2)
5	E. Bouri	4(1)	1 (1)
11	A. Zaremba	12(2), 13(5)	7 (2)
12	Z. Umar	11(2), 13(1), 15(4)	7 (3)
13	R. Kizys	11(5), 12(1)	6 (2)
14	N. Mirza.	Nil	0
15	M. Gubareva	12(4)	4 (1)
TCL: Total collaborative linkages; NOA: Number of Authors			

Figure 2: Co-authorship network of Authors

35 TOP 15 MOST PRODUCTIVE JOURNALS

Out of 3092 publications, 2966 (95.92%) publications are published in 482 journals. Of the total 482 journals, 159 journals have published one paper each, 44 published 11-20 papers each, 23 published 21-50 papers each, 2 published 51-100 papers, and 2 published more than 100 papers each.Among the top 15 most productive journals, *Finance Research Letters* has published the highest number of papers (132), followed by *Economic and Political Weekly* (123 papers), *World Development* (98 papers),*Studies in Systems, Decision and Control* (91 papers), *Environment, Development and Sustainability* (50 papers) and *Documenti Geografici* (49 papers). *Emerging Markets Finance and Trade* has registered the highest citation per paper (20.62), followed by *Resources, Conservation and Recycling* (18.31), *Canadian Journal of Agricultural Economics* (16.76), *Finance Research Letters* (12.83), *Journal of Public Economics* (9.84) and *Environmental and Resource Economics* (7.85) (Table 7).

Table 7: Profile of Top 15 Most Productive Journals

S.No	Name of the Journal	TP	TC	CPP
1	Finance Research Letters	132	1693	12.83
2	Economic and Political Weekly	123	119	0.97
3	World Development	98	495	5.05
4	Studies In Systems, Decision and Control	91	7	0.08
5	Environment, Development and Sustainability	50	322	6.44
6	DocumentiGeografici	49	8	0.16
7	Emerging Markets Finance and Trade	47	969	20.62
8	International Journal of Sociology and Social Policy	45	99	2.20
9	Journal of Asian Finance, Economics and Business	44	125	2.84
10	Applied Economics Letters	41	71	1.73
11	Journal of Public Economics	37	364	9.84
12	Resources, Conservation and Recycling	36	659	18.31
13	Canadian Journal of Agricultural Economics	34	570	16.76
14	Economics Letters	34	46	1.35
15	Environmental and Resource Economics	33	259	7.85

TP: Total Publications; TC: Total Citations; CPP: Average Citations Per Paper

36 TOP 26 SIGNIFICANT KEYWORDS

The top 26 most significant keywords appearing in the global literature on the 'Impact of COVID-19 on the Economy' are listed in Table 8. These keywords support the authors' insight into the main content covered in the research papers and help the researchers to find the most relevant literature in the area of their interest. Keywords are also used to analyse the research trends in a particular theme. Hence, the study identified the top 26 highly used keywords that appeared in the literature most frequently and listed them in Table 8 according to the number of its appearance. The most significant keywords used were COVID-19 (1881), followed by Lockdown (93), crisis (57), Economic Impact (52), Stock Market (49), Unemployment (49), Poverty (40), Economic Growth (39) etc. Figure 3, Keyword co-occurrence Map is developed using VOSviewer visualisation software. The size of the circle is proportional to the frequency of its appearance as keywords in the literature understudy, and links between the keywords show co-occurrence of keywords in the literature. Figure 4 is the Word Cloud of Keyword co-occurrence developed using the Biblioshiny App on RStudio, where the size of the word represents the frequency of its appearance as the keyword in the literature under study.

Table 8: Top-26 Significant Keywords Appeared

S. No.	Name of the Keyword	Frequency	S. No.	Name of the Keyword	Frequency
1	COVID-19	1881	14	Employment	34
2	Lockdown	93	15	Financial Crisis	32
3	Social Distancing	57	16	Sustainability	31
4	Crisis	52	17	Fiscal Policy	30
5	Economic Impact	52	18	Inequality	30
6	Stock Market	49	19	Sustainable Development	29
7	Unemployment	49	20	Uncertainty	29
8	Disease Spread	47	21	Bitcoin	28
9	Poverty	40	22	Food Security	28
10	Economic Growth	39	23	Labor Market	28
11	Crisis Management	36	24	Resilience	28
12	Epidemiology	36	25	Artificial Intelligence	26
13	Economics	35	26	Entrepreneurship	26

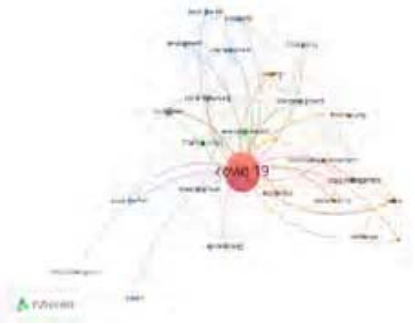

Figure 3: Mapping of Keyword Co-occurrence

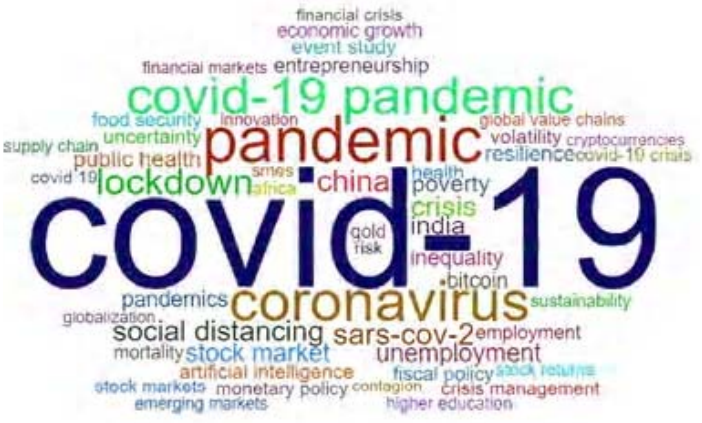

Figure 4: Word Cloud Keyword Co-occurrence

37 HIGH CITED PAPERS

Of the total 3092 global publications on 'Impact of COVID-19 on Economy', 16 papers (0.52% share) registered 100 to 321 citations per paper. These 16 papers together received a total of 2565 citations, averaging 160.31 citations per paper. The distribution of 16 highly cited papers is highly skewed: 11 papers each registered citations in the range 100-182, 5 papers in citation range 205-248, and one paper received 321 citations. Among the 16 highly cited papers (14 articles and 1 each as review and editorial, 5 involved zero collaboration, 4 national and 7 international collaborations.

Among 16 highly cited papers, the USA contributed the highest number of papers (4), followed by China (4 papers), Pakistan and the U.K. (3 papers each), Australia and Vietnam (2 papers each) and 1 paper each by 10 other countries. The 43 organisations and 53 authors participated in these 16 high cited papers. The 16 high cited papers are published in 12 journals, with 4 papers in *Finance Research Letters*, 3 papers in *Journal of Behavioral and Experimental Finance*, 2 papers in *Emerging Markets Finance & Trade* and 1 paper each in 7 other journals. Namely *Canadian Journal of Agricultural Economics, European Journal of Health Economics, International Review of Financial Analysis, Oxford Review of Economic Policy Resources, Conservation and Recycling, Research in International Business and Finance* and *Review of Asset Pricing Studies.*

4 CONCLUSION

The Covid-19 outbreak is a health emergency, which threatens not onlythe health system but also the economy of various countries. As a result, numerous studies were published on the impact of COVID-19 on various economic systems, and these papers provide various solutions to overcome the crisis. The present study examined 3092 global publications indexed in the Scopus database during 2020 –2021. The 3092 global publications on this topic involve 7111 authors from

2544 organisations spread across 127 countries. The 3092 publications on this theme received 11,400 citations, averaging 3.69 citations per publication. Only sixteen publications (0.52%) on this theme registered citations 100 to 321 and together received 2565 citations, averaging 160.31 citations per paper. Of the total publications, 1439 research publications have received one or more citations. The 16.79% (519) of the global publications on this theme received 3469 citations, averaging 6.68 citations per paper. The USA (77.59%), U.K. (11.32%) and India (9.61%) lead in terms of global contribution as against China (8.22 and 2.23), Canada (7.39 and 2.0), Australia (6.41 and 1.74) leading in terms of citation per paper and relative citation index.

In all, 2544 organisations and 7111 authors participated in global research on this theme, of which the top 15 most productive organisations together account for 10.41% and 4.72 shares and 14.11% and 9.10% share in global publications and citations on this theme. The most productive organisations were University of Oxford, U.K. (46 papers), University of Economics, Vietnam (29 papers), Cairo University, Egypt(26 papers) and National Bureau of Economic Research, U.K. (25 papers), etc. The most impactful organisations in terms of citations per paper and relative citation index wereUniversity of Economics, Vietnam (12.52 and 3.39), The University of Sydney, Australia (10.45 and 2.83), University College London, U.K. (8.55 and 2.32) and National Bureau of Economic Research, U.K. (8.44 and 2.29). The most productive authors wereAboul Ella Hassanien (25 papers), Ashraf Darwish (14 papers), AfeesAdebareSalisu (13 papers) and XuanVinh Vo (10 papers). The most impactful authors were S. Corbet (33.86 and 9.18), Renatas Kizys (1 4 . 8 3 and 4.02), Toan LuuDuc Huynh (13.44 and 3.64) and Adam Zaremba (12.43 and 3.37).

The most productive journals were Finance Research Letters (132 papers), Economic and Political Weekly (123 papers), World Development (98 papers) and Studies in Systems, Decision and Control (91 papers). The most impactful journals in terms of citations per paper were Emerging Markets Finance and Trade (20.62), Resources, Conservation and Recycling (18.31), Canadian Journal of Agricultural Economics (16.76) and Finance Research Letters (12.83).

The present study addresses the consequences of COVID-19 on the global economy, which helps the policy makers for evidence-based policymaking to overcome the COVID-19 economic crisis.

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APPENDIX-1

S.No	Name of the Authors	Title of the Paper	Souce	Citations
1	Zhang, D., Hu, M. and Ji, Q.	Financial markets under the global pandemic of COVID-19	Finance Research Letters, 2020, 36, art. no. 101528	321
2	Wang, P., Chen, K. Zhu, S., Wang, P. and Zhang, H.	Severe air pollution events not avoided by reduced anthropogenic activities during COVID-19 outbreak	Resources, Conservation and Recycling, 2020, 158, art. no. 104814	248
3	Goodell, J.W.	COVID-19 and finance: Agendas for future research	Finance Research Letters 2020, 35, art. no. 101512	240
4	Al-Awadhi, A.M., Alsaifi, K., Al-Awadhi, A. and Alhammadi, S	Death and contagious infectious diseases: Impact of the COVID-19 virus on stock market returns	2020) Journal of Behavioral and Experimental Finance 2020, 27, art. no. 100326	208
5	Sharif, A., Aloui, C. and Yarovaya, L	COVID-19 pandemic, oil prices, stock market, geopolitical risk and policy uncertainty nexus in the US economy: Fresh evidence from the wavelet-based approach	International Review of Financial Analysis 2020, 70, art. no. 101496	205
6	Hobbs, J.E.	Food supply chains during the COVID-19 pandemic	Canadian Journal of Agricultural Economics 2020, 68 (2), 171-176	182
7	Ashraf, B.N.	Stock markets' reaction to COVID-19: Cases or fatalities?	Research in International Business and Finance 2020, 54, art. no. 101249,	145
8	Phan, D.H.B. and, Narayan, P.K.	Country Responses and the Reaction of the Stock Market to COVID-19—a Preliminary Exposition	Emerging Markets Finance and Trade 2020, 56 (10), pp. 2138-2150	138
9	Corbet, S., Larkin, C. and Lucey, B.	The contagion effects of the COVID-19 pandemic: Evidence from gold and cryptocurrencies	Finance Research Letters 2020, 35, art. no. 101554	136
10	Ali, M., Alam, N. and Rizvi, S.A.R.	Coronavirus (COVID-19) — An epidemic or pandemic for financial markets	Journal of Behavioral and Experimental Finance 2020, 27, art. no. 100341.	128

Source: Scopus