



American Journal of Environmental Economics (AJEE)

ISSN: 2833-7905 (ONLINE)

VOLUME 4 ISSUE 1 (2025)



PUBLISHED BY
E-PALLI PUBLISHERS, DELAWARE, USA

Financial Contagion: The Corona Threat to the Global Economy

Ram Shepherd Bheenaveni^{1*}, Srinivas Katherasala², Vikas Daravath³, Shireesha Methri¹

Article Information

Received: February 05, 2025**Accepted:** March 08, 2025**Published:** March 25, 2025

Keywords

COVID-19 Lockdown, Economic Crisis, Economical Interventions, Financial Contagion, Global Economy

ABSTRACT

The unprecedented spread of the COVID-19 pandemic compelled humankind to practice the social distance and lockdown of all sorts of business resulted not only in the global financial downturn but also brought unprecedented uncertainty ever seen in history. The different economical interventions are being widely discussed across the world to accelerate the safer economic system to diminish and control the current financial contagion. Policymakers have evolved different ideas and thoughts to protect the global economy from tackling various human and global crises. The study adopted an exploratory-cum-descriptive research design. Qualitative questions were addressed through discourse analysis, while quantitative data was analyzed and presented using simple statistical methods. With this background, this paper will emphasize the ramifications and ratifications of financial contagion that took place due to the coronavirus lockdown worldwide. It also throws insights into some of the initiatives taken up by the world's voluntary associations, institutions, and governments to curtail the financial contagion of the current global lockdown crisis.

INTRODUCTION

The coronavirus disease (COVID-19) pandemic was noticed in late December 2019 in Wuhan, the capital of Hubei province in China (Yu *et al.*, 2021). According to the world meter data as of 2022 May 22nd 2020 globally 5,197,863 people have been infected and the total number of deaths from the disease now stands at 5,681,747. The World Health Organisation (WHO) announced the Public Health Emergency of International Concern and considered the pandemic as 'the Public Enemy No. 1' (Bheenaveni, 2020), and has been releasing daily reports, guidelines to the governments (WHO, 2020).

To break the chain of infection and slow down the spread of the virus, most of the countries announced a serious and intensive lockdown. Social distance and self-quarantine have been strictly imposed on the people to prevent the exponential curve of contagious disease; thus, lockdown has been seen across the world (Li *et al.*, 2020). The Coronavirus pandemic lockdown is first and foremost a humanitarian crisis and shows a direct impact on human health, social welfare, has a dramatic impact on economic activity, and also leading financial contagion (Abodunrin *et al.*, 2020). In this chaotic situation, many businesses have been forced to reduce their everyday business operations or shut down the firm for a while causing an increasing number of employees to lose their jobs (Rai *et al.*, 2021). It has drastically hit both the service sector and manufacturing sectors, thereby, world trade volume could once again plunge this year. The world economy is now entering into recession in 2020, succeeding decade-low growth of -3.9% in 2020.

In this context, the present paper is aimed to examine how the corona lockdown led to financial contagion into major sectors of the world economy, and how the efforts

and interventions of governments will curtail the financial crisis to save their economy by implementing these initiatives from present and future sudden stir: 1. Monetary policy, 2. Fiscal policy implications, 3. The people-centric economy-oriented, 4. Universal basic income concept, 5. Supply chain management, and 6. Innovative financial services have to be considered. And, it is also aimed to examine the policy implications to curtail the Corona Financial Contagion in Global Economy.

MATERIALS AND METHODS

To address the research questions, an exploratory-cum-descriptive research design was adopted for this review paper. This approach was chosen to explore and describe the conceptual issues and the specific situation of financial contagion in the global economy triggered by the unprecedented onslaught of COVID-19. The exploratory aspect of the research design aimed to investigate and clarify the conceptual questions framed for the study. This involved identifying and examining various aspects and dimensions of financial contagion during the pandemic. The descriptive aspect, on the other hand, focused on detailing the actual state of the financial sector during the COVID-19 crisis, providing a comprehensive account of how the pandemic affected financial markets and institutions globally.

To achieve these objectives, the study employed a combination of discourse analysis, content analysis, and dialectical analysis. Discourse analysis was used to scrutinize the language and communication patterns related to financial contagion during the pandemic. Content analysis helped in systematically examining the existing literature and media reports to identify recurring themes and trends. Dialectical analysis facilitated the

¹ Department of Sociology, Osmania University, Hyderabad – 500007, TS, India

² Department of Social Work, Osmania University, Hyderabad – 500007, TS, India

³ Department of Commerce, Osmania University, Hyderabad – 500007, TS, India

* Corresponding author's e-mail: bheenaveni@osmania.ac.in

exploration of contradictory viewpoints and the synthesis of different perspectives to gain a deeper understanding of the phenomenon.

It is important to note that the scope of this study is confined to the financial sector of the global economy during the COVID-19 period. Therefore, while the findings provide valuable insights into the financial impact of the pandemic, they may not be generalizable to other sectors or to financial conditions outside the specified timeframe. The unique context of the COVID-19 crisis means that the results are specific to this period and may not apply universally to other instances of financial contagion.

RESULTS AND DISCUSSIONS

At first, the term financial contagion was introduced in 1997 during the currency crisis in East Asia to Russia and Brazil and it is the spread of an economic crisis from one market to another market. Financial contagions are naturally related to the diffusion of economic booms and occur both at the national and international levels (Ssenyonga, 2021). In history, many financial contagions happened, but the great depression and the financial recession were severe. The great depression crisis that began in 1929 and lasted in 1939 caused unemployment and acute deflation in most of the country of worldwide. The reasons for the 1929 financial contagion were considerable monumental deteriorations in spending, banking panics, and bank failures in the United States. Excessive stock market speculations in the United States, maintenance of the international gold standard create several problems to the smoot-Hawley tariff act and protectionist trade policies taken in the United States (Pells 2020). In the year 2008, the Great Recession was participated in the US and lasted until 2009 resulting in the longest and deepest financial contagion in many countries. The reasons for 2008 financial contagions were a mortgage, subprime mortgage, subprime lending, and austerity. The outcomes of the financial contagion were millions of people lost houses, jobs, and their savings; it leads an increase in deep poverty (Rasul *et al.*, 2021).

All functional spheres in the world have dramatically been changed within a short period from January 2020 as the Coronavirus Pandemic has taken an overwhelming number of human lives. All over the world, Countries hurriedly implemented compulsory quarantines and social distancing practices to curb the corona pandemic, world is being made lockdown by this chaotic situation and was pushed to the brink of a financial contagion which is more severe than the previous 2008 and 1929 recessions. This is the first human crisis, in all regards, happening in the world and it was ever witnessed before in the history of humankind (Chirisa *et al.*, 2021; Mirbabaie *et al.*, 2020; Papadimos *et al.*, 2020; Sivasundaram, 2020).

The impact of corona lockdown on large-scale economics causes a sudden rise in non-performing assets in the banking sector. Private sector banks get the highest hit and face maximum financial contagion exposure during

this lockdown. Non-performing assets rose from loans issued to small and medium scale enterprises (SMEs), the tourism industry across the globe itself experienced a loss of \$200 billion due to the travel restrictions (Grech *et al.*, 2020). The temporary ban on aviation leads to a \$ 113 billion loss to the aviation industry (Xuan *et al.*, 2021). As per the GTBA report, the business travel sector will lose \$820 billion in revenue (Phil Chibuikem, 2022a). To curb the spread of the coronavirus rapid shutdowns in towns and cities have been taken the restaurants and hotels into sudden shock. Across the globe, the hotel industry witnessed cancellations of booking worth billions of dollars, and this industry pursued a \$ 150 billion bailout (Chenli *et al.*, 2022). Estimates explain that around 24.3 million jobs related to the hotel industry across the world have evaporated, and 3.9 million in the United States alone (Nhamo *et al.*, 2020). The current pandemic has drastically hit Event Management Sector financially and experienced a huge number of cancellations that cost 400 million Euros. More than \$ 1 billion worth of losses were met by the E3 and SXSW tech events due to heavy cancellations. Meanwhile, the global film industry faced a great loss worth \$5 billion. The film and entertainment industry in Italy alone has seen losses estimated to run into the millions of euros (Phil Chibuikem, 2022b), and these were estimated 7.2 million euros in the theatre sector, 7.3 million euros in the film screening sector, 2.5 million euros in the dance activities sector, 4.1 million euros in the live music sector and 1.8 million euros in the exhibition sector (Luonila *et al.*, 2021).

The lockdown of COVID-19 carried a severe deterioration in the size of bank transactions, a drastic fall in card payments, and a decline in the usage of ATMs, POS terminals globally (Kapur *et al.*, 2020). It resulted in the least fees collected by banks as part of operating revenue costs and effected negatively on banks' profits (Rachel, 2020). According to S&P Dow Jones Indices, the most discernible consequence of the lockdown crisis on financial markets is the \$6 trillion loss in the global stock markets as its 500 indices fell from 3.373 to 2.409 points which constitutes 28% negative change. Similarly, the FTSE 250 index fell from 21,866 to 12,830 indicating a 41.3% of downfall, and the Nikkei fell from 23,479 to 16,552 which change to 29%. In the meantime, the major international banks have experienced a huge fall in their share price, the Citi group's share price fell from \$ 78.22 to \$ 39.64 which is the change of 49%, the share price of JP Morgan Chase fell by from \$137.49 to \$ 85.30 by 38% negative change, and the share price of Barclays fell by from 181.32 to 86.45 euros by 52% of downfall (Kourtit & Nijkamp, 2023; Xu *et al.*, 2020).

Irrespective of their position in the size hierarchy of the companies, whether it is a small and medium business or large invested business entity, are taking a big blow from the corona lockdown (Lobanova & Aminov, 2021). The sectors which are expected to take the hardest hits include aviation, hospitality, transportation, retail, entertainment, financial sector, and so on put immediate pressure on

companies' profits along with downside impact on their ability to borrow money and keep their operations complete. This sort of unpleasant situation causes both demand and supply-side surprises. Because of lockdown, consumers are staying at home leads to a sudden shock towards the demand side, and a shock on the counterpart of supply-side was also inevitable as the factories are shut down globally caused supply chain problem (Qunhui, 2021).

According to International Labour Organization (ILO), both unemployment and underemployment including the people in low-paid jobs, women, and migrants too were impacted heavily due to the corona lockdown. In 2019, the baseline of global unemployment was 188 million, and it rises to 24.7 million due to the current pandemic. By the end of 2020, heavy losses from USD 860 billion to USD 3.4 trillion will be met by the workers in terms of their incomes, this pushes around 35 million additional people into acute poverty globally. Consequently, unprecedented and drastic falls in terms of consumption of goods and services will hit the global business and economy as well (Yu *et al.*, 2022).

Table 1: Latest Growth Estimations and Projections of Global Economic Outlook

Real GDP, Annual Percentage Change	2019	2020	2021
Global Output	2.9	-3.0	5.8
Advanced Economies	1.7	-6.1	4.5
Emerging Markets and Developing Economies	3.7	-1.0	6.6
Low Income Developing Countries	5.1	0.4	5.6

(Source: International Monetary Fund (IMF), *World Economic Outlook*, April 2020)

It is clear from the data mentioned above that the recession invariably affected the economics of both the advanced, developing, and underdeveloped countries due to the long stay of corona lockdown. - 6.1% growth rate is projected for advanced economies for 2020 while it is -1.0% for emerging market and developing economies. However, this results in a longer duration of contagion which much worsens the financial transactions, and further heavily breakdowns the global supply chains. In such cases, the Global GDP may fall to -3% (Rao *et al.*, 2021).

Policy Implications To Curtail The Corona Financial Contagion In Global Economy

The coronavirus pushed the world to the edge of financial contagion is more severe than in the previous 1930 and 2008. The depth and duration of financial contagion depend on the economic interventions are discussed below;

Monetary policy measures by central banks of governments granting principal or interest moratorium

to debtors affected by corona lockdown, regulatory forbearance to banks, and liquidity provision of central banks to financial markets, purchase of bonds and securities by the central banks that were dropping in value and interest rates, sustained flow of credit to be continued to small, micro and medium industries, banks, public health sector, individuals and essential businesses. Fiscal measures by the Governments fetch and facilitate a viable number of federal stimulus packages for different service sectors and industries that were mostly affected by the corona lockdown, provision of income support for individuals, payments as part of social welfare to be continued to support each household throughout the containment period to abate tenacious wounds that could emerge from subdued investment in this severe downturn (Amadeo & Brock, 2022).

People-centric economy concept: Globally money is the primary mode of financial exchange, and it is essential for work payments. The concept of a People-Centric Economy considers how essential work is important for the development of the world's socio-economic status (SES) and it is also equally important for the individuals who perform work for their growth at the individual level. However, meaningful work is sustaining the world economy and fulfilling the individual needs, thereby, the payment for the work allows people to support their families to participate in the economy rather than encouraging them to spend more. Nature of work that promotes the health and overall wellbeing of people and could help to boost up the productivity and strengthen the economy too (Moşteanu, 2020).

Universal Basic income concept: In the lockdown of the coronavirus pandemic, nearly 30% unemployment rate has been witnessed and this new great recession demands several income supplementing programs. This situation made it desirable to consider the Universal basic income concept given by Martin Luther King Jr in 1967 to provide everyone with a minimum living wage whether they were employed or not would abolish poverty. With the help of Universal basic income, people can escape from the poverty trap. This unconditional income would enable workers to stabilize their economic condition during sudden economic crisis periods and to reduce income inequalities as well (Hasmath, 2015).

Global Supply Chain Management

This sudden stir requires immediate and appropriate action diagonally from the end-to-end supply chain to deal with the issues and challenges in order to create sheer transparency on multitier supply chains, and to determine the origin of supply by identifying the alternative sources, to estimate available inventory along with the value chains including spare parts and after-sales stocks for the optimum utilization as a medium to keep production running and enable delivery to customers, assess realistic final-customer demand and respond to the shortage buying behaviour of customers.

Optimizing the production and distribution capacity to

ensure employee safety, such as by providing individual safety equipment, appointing the protective and preventive communication teams to share infection-risk levels, and examining the work-from-home options. Identifying the secured logistics, estimating, and accelerating their capacities wherever possible, and making them flexible and movable for transportation, arranging and managing the cash for operations to conduct the stress tests to find out the issues that hinder the supply chain and cause a financial downfall (Biswas & Das, 2020).

Innovative financial services are necessary for financial institutions and people, and this innovation can boost financial institutions. This financial service would be helpful to individuals, households, and unorganized small vendors to face sudden economic crises. Progress of financial services in banking institutions, insurance institutions, non-banking financial services, and microfinance institutions required a new regulatory framework, and this progress is an essential element for economic growth (Murad & Idewe, 2017).

Managerial Implications

The present study focuses on the financial contagion through corona lockdown and policy implications to curtail the COVID-19 financial contagion in Global Economy. Despite the availability of several economy-saving initiatives being implemented by the governments globally, many countries worldwide do not attain the maximum benefits to the people in this kind of sudden economic crisis due to a lack of funds to implement newly designed economic policies. In consonance with the present chaotic situation and economic vulnerability, this paper has highlighted how the coronavirus lockdown led to financial contagion into major sectors of the global economy, and how governments will curtail the financial crisis to save their economy by taking and implementing special economic interventions to accelerate the large scale monetary and fiscal packages to increase in access and to offer the concessional financing to the needy, to initiate the people-centric economy to protect public life as well as the economy, adaptation, and implementation of the Universal Basic Income will be taken into the consideration to protect unemployed and underemployed, to remove supply chain barriers to boost world trade, to implement innovative financial services to build more sustainable future. Eventually, measures of this kind should complement the national and international future financial contagions.

CONCLUSIONS

The lockdown of the coronavirus pandemic and the financial contagion to the global economy caused the global recession in 2020. Social distancing policies and lockdown restrictions to mitigate and militate the coronavirus outbreak trigger an economic crisis. Policymakers, particularly the economists, in many countries were/are under tremendous pressure to respond and address the economic crisis brought by the

lockdown. These longest lockdown restrictions hurt the global economy through a reduction in various levels of general economic transactions leading to financial contagion on the stock market, financial institution, travel industry, hospitality industry, event industry, film industry, labour market, and so forth. This sort of recession, since not happened in past, made it a difficult choice for policymakers whether to save the economy first before protecting the people or to protect the people first before saving the economy. Across the world, many countries have brought and implemented special policies with a volume of intensives and concessions to curtail financial contagion on different sectors, and in different regions but these policies were insufficient or premature, and sometimes contradict with each other in some areas, nevertheless, this human and economic crisis needs lots of brainstorming and new economic policies to mitigate the present economic crisis and in the coming near future.

REFERENCES

- Abodunrin, O., Oloye, G., & Adesola, B. (2020). Coronavirus pandemic and its implication on global economy. *International Journal of Arts, Languages and Business Studies*, 4(0), 13–23. <https://www.ijalbs.gojamss.net/index.php/IJALBS/article/view/2>
- Amadeo, K., & Brock, T. . J. (2022, August 7). *What Is Universal Basic Income?* <https://www.thebalancemoney.com/universal-basic-income-4160668>
- Bheenaveni, R. S. (2020). India's indigenous idea of herd immunity: The solution for COVID-19? *Traditional Medicine Research*, 5(4), 182–187. <https://doi.org/10.12032/TMR20200519181>
- Biswas, T. K., & Das, M. C. (2020). Selection of the barriers of supply chain management in Indian manufacturing sectors due to COVID-19 impacts. *Operational Research in Engineering Sciences: Theory and Applications*, 3(3), 1–12. <https://doi.org/10.31181/ORESTA2030301B>
- Chenli, M., Bannerman, S., & Abrokwah, E. (2022). Reviewing the global economic impacts and mitigating measures of COVID-19. *Total Quality Management & Business Excellence*, 33(13–14), 1573–1587. <https://doi.org/10.1080/14783363.2021.1981130>
- Chirisa, I., Mavhima, B., Nyevera, T., Chigudu, A., Makocheke, A., Matai, J., Masunda, T., Chandaengerwa, E. K., Machingura, F., Moyo, S., Chirisa, H., Mhloyi, M., Murwira, A., Mhandara, L., Katsande, R., Muchena, K., Manjeya, E., Nyika, T., & Mundau, L. (2021). The impact and implications of COVID-19: Reflections on the Zimbabwean society. *Social Sciences & Humanities Open*, 4(1), 100183. <https://doi.org/10.1016/J.SSAHO.2021.100183>
- Grech, V., Grech, P., & Fabri, S. (2020). A risk balancing act - Tourism competition using health leverage in the COVID-19 era. *International Journal of Risk and Safety in Medicine*, 31(3), 121–130. <https://doi.org/10.3233/>

- JRS-200042
- Hasmath, R. (2015). Inclusive growth, development and welfare policy: A critical assessment. *Inclusive Growth, Development and Welfare Policy: A Critical Assessment*, 1–293. <https://doi.org/10.4324/9781315732626>
- Kapur, M., Anand, T., & Banerjee, A. (2020). *A Review of COVID-19 and Its Waterfall Effect on the Changed World*. SSRN Electronic Journal. <https://doi.org/10.2139/SSRN.3688847>
- Kourtit, K., & Nijkamp, P. (2023). In Search of an Integrated Corona Knowledge Ecosystem for Actionable Health Policy – A Mind Mapping Voyage and an Exploratory Decomposition in Spatial Pandemetrics. *Transylvanian Review of Administrative Sciences*, 19(69), 64–88. <https://doi.org/10.24193/tras.69E.4>
- Li, H., Liu, S. M., Yu, X. H., Tang, S. L., & Tang, C. K. (2020). Coronavirus disease 2019 (COVID-19): current status and future perspectives. *International Journal of Antimicrobial Agents*, 55(5), 105951. <https://doi.org/10.1016/J.IJANTIMICAG.2020.105951>
- Lobanova, Y., & Aminov, I. (2021). Financial and legal measures to support small and medium-sized businesses in the context of pandemic turbulence. *SHS Web of Conferences*, 128, 06006. <https://doi.org/10.1051/SHSCONF/202112806006>
- Luonila, M., Renko, V., Jakonen, O., Karttunen, S., & Kanerva, A. (2021). The COVID-19 pandemic and cultural industries in the EU and in the United Kingdom: A perfect storm 1. *Cultural Industries and the COVID-19 Pandemic*, 11–26. <https://doi.org/10.4324/9781003128274-3>
- Mirbabaie, M., Bunker, D., Stieglitz, S., Marx, J., & Ehnis, C. (2020). Social media in times of crisis: Learning from Hurricane Harvey for the coronavirus disease 2019 pandemic response. *Journal of Information Technology*, 35(3), 195–213. https://doi.org/10.1177/0268396220929258/ASSET/77E8B699-2682-46D0-A851-D25EA473413D/ASSETS/IMAGES/LARGE/10.1177_0268396220929258-FIG5.JPG
- Moşteanu, N. R. (2020). Green Sustainable Regional Development and Digital Era. *Green Buildings and Renewable Energy*, 181–197. https://doi.org/10.1007/978-3-030-30841-4_13
- Murad, A. B., & Idewe, I. E. O. (2017). The impact of microfinance institution in economic growth of a country: Nigeria in focus. *International Journal of Development and Management Review*, 12(1), 1–17. <https://www.ajol.info/index.php/ijdmr/article/view/157831>
- Nhamo, G., Dube, K., & Chikodzi, D. (2020). COVID-19 and the Stock Market: Impacts on Tourism-Related Companies. *Counting the Cost of COVID-19 on the Global Tourism Industry*, 297–318. https://doi.org/10.1007/978-3-030-56231-1_13
- Papadimos, T., Soghoian, S., Nanayakkara, P., Singh, S., Miller, A., Saddikuti, V., Jayatilake, A., Dubhashi, S., Firstenberg, M., Dutta, V., Chauhan, V., Sharma, P., Galwankar, S., Garg, M., Taylor, N., & Stawicki, S. P. (2020). COVID-19 blind spots: A consensus statement on the importance of competent political leadership and the need for public health cognizance. *Journal of Global Infectious Diseases*, 12(4), 167–190. https://doi.org/10.4103/JGID.JGID_397_20
- Phil Chibuikem, O. (2022a). *COVID 19 impact on the global economy*. ScienceOpen Preprints. <https://doi.org/10.14293/S2199-1006.1.SOR-PPENFMX.V1>
- Phil Chibuikem, O. (2022b). *COVID 19 impact on the global economy*. ScienceOpen Preprints. <https://doi.org/10.14293/S2199-1006.1.SOR-PPENFMX.V1>
- Qunhui, H. (2021). Impact of the COVID-19 pandemic on the supply side and countermeasures. *Economics of the Pandemic: Weathering the Storm and Restoring Growth*, 160–183. <https://doi.org/10.4324/9781003184447-8/IMPACT-COVID-19-PANDEMIC-SUPPLY-SIDE-COUNTERMEASURES-HUANG-QUNHUI>
- Rachel, C. (2020, May 16). Card payments in March fall 24% in 2 months - Times of India. *Times of India*. <https://timesofindia.indiatimes.com/business/india-business/card-payments-in-march-fall-24-in-2-months/articleshow/75767296.cms>
- Rai, S. S., Rai, S., & Singh, N. K. (2021). Organizational resilience and social-economic sustainability: COVID-19 perspective. *Environment, Development and Sustainability*, 23(8), 12006–12023. <https://doi.org/10.1007/S10668-020-01154-6/FIGURES/4>
- Rao, P., Goyal, N., Kumar, S., Hassan, M. K., & Shahimi, S. (2021). Vulnerability of financial markets in India: The contagious effect of COVID-19. *Research in International Business and Finance*, 58, 101462. <https://doi.org/10.1016/J.RIBAF.2021.101462>
- Rasul, G., Nepal, A. K., Hussain, A., Maharjan, A., Joshi, S., Lama, A., Gurung, P., Ahmad, F., Mishra, A., & Sharma, E. (2021). Socio-Economic Implications of COVID-19 Pandemic in South Asia: Emerging Risks and Growing Challenges. *Frontiers in Sociology*, 6, 629693. <https://doi.org/10.3389/FSOC.2021.629693/BIBTEX>
- Sivasundaram, S. (2020). The Human, The Animal and the Prehistory of COVID-19. *Past & Present*, 249(1), 295–316. <https://doi.org/10.1093/PASTJ/GTAA024>
- Ssenyonga, M. (2021). Imperatives for post COVID-19 recovery of Indonesia's education, labor, and SME sectors. *Cogent Economics & Finance*, 9(1). <https://doi.org/10.1080/23322039.2021.1911439>
- Xu, Z., Elomri, A., Kerbache, L., & El Omri, A. (2020). Impacts of COVID-19 on Global Supply Chains: Facts and Perspectives. *IEEE Engineering Management Review*, 48(3), 153–166. <https://doi.org/10.1109/EMR.2020.3018420>
- Xuan, X., Khan, K., Su, C. W., Khurshid, A., Xuan, C., Khan, X., Su, K., Khurshid, C. W., & Sayarshad, R. (2021). Will COVID-19 Threaten the Survival of the Airline Industry? *Sustainability*, 13(21), 11666. <https://doi.org/10.3390/s132111666>

- doi.org/10.3390/SU132111666
- Yu, B., Chen, X., Rich, S., Mo, Q., & Yan, H. (2021). Dynamics of the coronavirus disease 2019 (COVID-19) epidemic in Wuhan City, Hubei Province and China: a second derivative analysis of the cumulative daily diagnosed cases during the first 85 days. *Global Health Journal*, 5(1), 4–11. <https://doi.org/10.1016/J.GLOHJ.2021.02.001>
- Yu, Z., Razzaq, A., Rehman, A., Shah, A., Jameel, K., & Mor, R. S. (2022). Disruption in global supply chain and socio-economic shocks: a lesson from COVID-19 for sustainable production and consumption. *Operations Management Research*, 15(1–2), 233–248. <https://doi.org/10.1007/S12063-021-00179-Y/FIGURES/9>