

# ARTIKEL 2

*by* FAKULTAS EKONOMI UNG

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**Submission date:** 05-Mar-2023 10:57PM (UTC-0600)

**Submission ID:** 1991581790

**File name:** artikel\_scopus\_3.pdf (1.13M)

**Word count:** 7109

**Character count:** 39836

**1**  
SYSTEMATIC REVIEW

# Entrepreneurial leadership and global management of COVID-19: A bibliometric study [version 1; peer review: awaiting peer review]

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**V1** **1** **First published:** 09 Jan 2023, 12:31  
<https://doi.org/10.12688/f1000research.109340.1>  
**Latest published:** 09 Jan 2023, 12:31  
<https://doi.org/10.12688/f1000research.109340.1>

**3**  
**Open Peer Review**

**Approval Status** AWAITING PEER REVIEW

Any reports and responses or comments on the article can be found at the end of the article.

**1**  
**Abstract****Background**

The coronavirus disease 2019 (COVID-19) pandemic has caused uncertainty in many economic sectors. An entrepreneurial leadership style can become an alternative method of leadership for facing uncertainty.

**Methods**

This study uses secondary data from the Scopus website as samples. The samples are papers from Indonesia, China, and the USA. Data were collected through the Scopus website, using keywords entrepreneurial and leadership, saved into a CSV file, and processed using VOSviewer. The findings were analyzed using a systematic search.

**Results**

Entrepreneurial leadership as a topic was more prevalent in China than Indonesia and the USA. There were 101 papers from Chinese authors, 28 from Indonesian authors, and 575 from USA authors. However, there was no topic of entrepreneurial leadership connected to the strings of the topic of COVID-19. This study also found that inclusive leadership was used in China and local government leadership was used by the USA government to anticipate the impact of COVID-19.

**Conclusions**

Entrepreneurial leadership was not used for COVID-19 pandemic

1  
1 management in USA, China, and Indonesia as a research trend.

#### Keywords

COVID-19, economic growth, leadership, Scopus, topic.

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**Author roles:** Mendo AY: Project Administration, Resources; Singh SK: Funding Acquisition; Yantu I: Conceptualization; Hineo R: Formal Analysis; Hakri Bokingo A: Supervision; Febriani Dunga E: Investigation; Juanna A: Supervision; Kusuma Wardhana A: Writing – Original Draft Preparation, Writing – Review & Editing; Niroula B: Formal Analysis, Writing – Review & Editing; Win T: Data Collection, Validation

**Competing interests:** No competing interests were disclosed.

**Grant information:** The author(s) declared that no grants were involved in supporting this work.

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**How to cite this article:** Mendo AY, Singh SK, Yantu I *et al.* **Entrepreneurial leaders and global management of COVID-19: A bibliometric study [version 1; peer review: awaiting peer review]** F1000Research 2023, 12:31 <https://doi.org/10.12688/f1000research.109340.1>

**First published:** 09 Jan 2023, 12:31 <https://doi.org/10.12688/f1000research.109340.1>

## Introduction

Entrepreneurial leadership is a new concept of leadership that can leverage the potential of the human resources in the company (Strubler and Redekop, 2010). Moreover, entrepreneurial leadership is said to be more suitable than other types of leadership in facing the uncertainty of the business world. An entrepreneur is a leader for themselves and their company. Leadership is the activity of persuading people to work together in achieving a goal; the desire to achieve a impactful communication that results in influencing the actions of others.

Based on a study by Okudan and Rzasa, entrepreneurial leadership emerged as a unique type of leadership in response to the development of small and medium-sized enterprises (SMEs) rather than big companies (Okudan and Rzasa, 2006), because this type of leadership believed that SMEs were the most dynamic type of business in the ever-changing market trends. Moreover, SMEs have to adapt to the fast-paced, competitive business environment which was common in the fourth industrial revolution (Saunila, 2014).

Since 2020, the global economy has suffered because of the coronavirus disease 2019 (COVID-19) pandemic. Many economic sectors have been affected and could not maintain their daily progress as a result of declining demand for their products. As a result, there have been waves of unemployment, company bankruptcies, and economic recessions have occurred in several countries (Nag and Puniani, 2021). The global market has recently become unstable and uncertainty surrounding the economic condition has increased with the pandemic (Filipe, 2021).

Leadership has become key for companies and institutions to survive the uncertainty of changing economic conditions. Entrepreneurial leadership, which has claimed to be able to leverage the potential of each human resource, could become the solution to the uncertainty of business, such as lack of demand in retail business as a result of lockdown and physical distancing. A study by Akter stated that there was uncertainty around the rapid decline in product demand, limitations in the workspace as a result of social distancing, problems with supply chains as a result of full and partial lockdowns, as well as declining productivity as a result of disease which could infect the human resources (Akter, 2020). Maintaining the health of human resources during the COVID-19 pandemic has become the main concern of entrepreneurial leadership, because without human resources, the production process in a company will be impeded (Septiariani, Filianti, and Suprayogi, 2020).

Besides human resources, research and development have also been needed to create more innovation. Innovation has been needed during the pandemic to create more opportunities for institutions, along with the creation of new products to improve their revenue (Galanou and Farrag, 2015). Research and development (R&D) produced innovations for industries, so that it could become an inseparable part of the business world. A study by Mendenhall *et al.* stated that R&D has an important role in increasing firm value because it is an intangible asset that has a focus on technology and science. Startups and new firms in the fourth industrial revolution have to utilize any form of digital technology to create their own market opportunity, so that they can expand their business fast. R&D investments were made to deal with high uncertainty of product demand where innovation is needed (Mendenhall *et al.*, 2017).

As a policy maker, governments should give more support to the research and development activities in society (Naz, 2019). Moreover, during the COVID-19 pandemic, the implementation of limited physical contact and lockdown should be accompanied by research and development activities to help companies, especially SMEs, to create more opportunities that can save them (Nag and Puniani, 2021).

A paper in an academic journal published by a reputable publisher, for example, Springer, is one of the results of research and development activities. International standardized publications can demonstrate many insights and innovations in any sector (Afeyan and Cooney, 2020). Government and industrial sectors could rely on the publications to gain insight to help them to create innovations for their product or service (Farrukh *et al.*, 2021).

This study was different from Mendenhall *et al.*'s (2017) previous study which emphasized the importance of R&D in a business and Akter's (2020) about the importance of leadership in growing a business and creating a strong organization. This study emphasized the leadership type used by the government of China, United States of America, and Indonesia in managing COVID-19 impact. Based on the research above, this study aims to observe if the topics related to the COVID-19 pandemic in China, USA, and Indonesia had a correlation to entrepreneurial leadership and what sub-topics lie behind these correlations.

## Literature review

### Scopus as the measurement for internationally published papers

Publication in a journal is a requirement for academics to build their careers (Veer, Khiste, and Deshmukh, 2018). To "publish or perish" means that if an academician doesn't publish a paper, he/she would not be known in academic society.

However, publications can also provide guidance to the industrial sector and to bureaucrats to further develop their products and services. Because publications with many publishers are a record of the latest research findings and processes, repository users can utilize publications and integrate the insight into their own research papers (Barus and Mungkasi, 2019).

Each journal is ranked based on quality. One of the most well-known indexing institutions for many journals at the international level is Scopus. Scopus has grown over the last decade because of the public openness of its data (Anna, 2018). Users can search for information related to the journals and the papers that have been indexed by Scopus under Scopus Preview. But, if they want more detailed information about papers and affiliation, they can pay a subscription fee to Elsevier. Moreover, through publications, reports of research can be preserved and used for sustainable research activities (Abukhait, Bani-Melhem, and Zeffane, 2019).

### Entrepreneurial leadership during COVID-19

When COVID-19 hit the world, it caused disruption to many countries, and the disruption also affected the global economy. The effect of the COVID-19 pandemic has forced many governments to implement full lockdowns, partial lockdowns, and place limits on social activity in public and private spaces. The effect of limiting the movement of society, has caused the purchasing power in society to decrease too. Purchasing power in this case means the capability of society to buy products based on their economic power. Purchasing power is also the ability of the consumers to buy the goods they need and this always fluctuates based on some factors, which are the index of consumer's belief in a product, the index of the economy's expectation, and the condition of the real economy (Tsai, Tao, and Yuadi, 2019). People's purchasing power is closely related to demand. The index of consumer belief was how far the consumers want to consume more of certain product, for example consuming more chicken from KFC because of its tastiness. The index of economy expectation was the expectation of economic growth, both by industry and society. The condition of real economy was the current condition of the economy. Those three factors could lower or increase the purchasing power of society. The lower the purchasing power, the less people can afford to buy products at high prices and demand for products at low prices increases (Golar *et al.*, 2020).

The decrease of purchasing power since the beginning of the pandemic has led to volatility, uncertainty, complexity, and ambiguity in the business world, known as VUCA. Volatility refers to the unpredictable changes in a society which could affect the business result. Uncertainty refers to the inability to predict the present situation and the future, because of tough competition. Complexity refers to the many factors that could disrupt the business world and they were interconnected to each other. Ambiguity refers to lack of clarity from people and organizations to make sure that the business plan could be guaranteed for expecting result (Sukoco, Suprayogi, and Hidayati, 2018) VUCA is the term used by Warren Bennis and Burt Nanus to explain an uncertain economy where it is difficult for business owners to anticipate the future during the pandemic, the business world has struggled to predict opportunities for good business. Moreover, strategies that were used effectively before the COVID-19 pandemic were not effective anymore because the situation was completely different (Johansen and Euchner, 2013).

Entrepreneurial leadership could match the VUCA condition, because this type of leadership allows employees to be in charge of their own job responsibilities with minimum supervision, to give them more freedom in working. Moreover, entrepreneurial leadership emphasizes the role of employees as the core of the company and encourages them to contribute to decision-making for the company or institution, instead of leaders controlling decision-making (Renko, 2017).

## Methods

### Study design

This study used secondary data in its analysis, obtained from the Scopus database. Scopus gives robust information related to publications via a paid subscription service, or Scopus Preview can be used for free although it has limited functions. Scopus meta data of all papers that have been published by journals indexed by Scopus can only be accessed through subscription. Data such as number of citations, author's name and affiliation, name of journal, h-index of journals and papers, content of papers such as title and abstract, as well as how many journal issues are published every year, in all topics or in a specific topic. This study used purposive sampling in gathering data from Scopus.

### Data collection

In this study, samples were publications written by authors in China, Indonesia, and the USA. The time frame was 2020-2021 and only papers using English language were selected as samples. The studies selected were also limited to "medicine", "business", "management" and "social science". The data were collected on 25 August 2021 through Scopus using "advanced search". From "advanced search", the query formula was entered to retrieve relevant results.

The formula was "TITLE-ABS-KEY ((ENTREPRENEUR\*) AND (LEADERSHIP) (COVID) AND (CHINA/INDONESIA/USA))". "TITLE-ABS-KEY" means that any topic related to "entrepreneurial leadership" and "covid" would be searched only at the sections of "title", "abstract", and "keywords" in any paper (Sa'ed and Al-Jabi, 2020). This study found out that there were 86 papers written by Chinese authors that covered the relevant topics, 27 by Indonesian authors, and 999 by American authors. These papers were all analyzed in this research, and none were excluded. The samples ranged from January 2020 to 25<sup>th</sup> August 2021.

**Data analysis**

Data were collected from papers indexed in Scopus by using keywords in search feature. Those keywords were "TITLE-ABS-KEY ((ENTREPRENEUR\*) AND (LEADERSHIP) AND (CHINA/INDONESIA/USA))", by selected purposed criteria: "citation information", "bibliographic information", and "abstract & keywords". These details were exported into comma separated value file format (CSV), so that the data could be analyzed by bibliometric software. The CSV file was analyzed using VOSviewer<sup>®</sup> software version 1.6.16, as this version was able to identify research trends as well as connections between the research topics and previous publications. VOSviewer was used to identify which topics were closely related to COVID-19 and leadership. VOSviewer could manifest the relationship between topics into connected circles (Mafruchati and Makuwira, 2021).

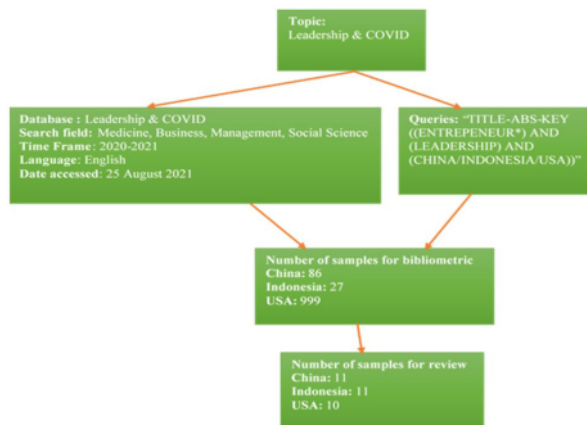
A literature review was also conducted to analyze the findings of the papers that were related to the topic of this study. There were three papers from China, four from Indonesia, and two from the USA. The literature review was documented in tables including topic and findings of the papers. According to Dahlawi et al. (2021), a literature review should, at minimum, have a sample of ten papers before conducting analysis using those papers.

The comma separated file (CSV) that was downloaded from Scopus by using keywords "leadership" and "covid", was then extracted into an Excel file (xls) using bibioshy from R studio. The papers included were those with abstracts that discussed "leadership" and "covid" (Shi and Li, 2019). The screening results only included papers with abstracts that had results related to leadership and COVID-19 management. According to Toorajipour et al. (2021), to get the result of the research question, at least 10 papers have to be used for literature review and study used 11 papers from Chinese and Indonesian authors, and 10 from USA authors.

**1 Results and discussion**

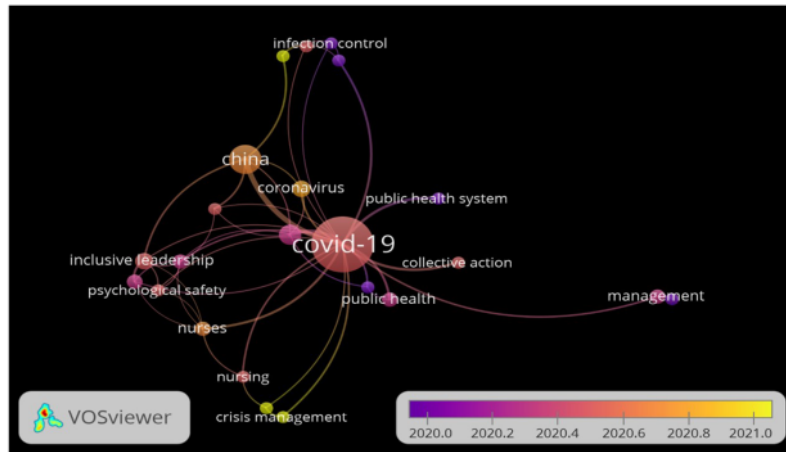
**Research trends around leadership in China during COVID-19**

There were 101 papers written by Chinese authors. The characteristics of these papers were more focused on health management than leadership Figure 2 shows that the keyword "COVID-19" was connected to the keywords "inclusive leadership". There were 101 papers which contained the keyword COVID-19, which we found by searching that keyword in the CSV file. There were three papers that stated that inclusive leadership was used by the Chinese government to manage impact of COVID-19. The keyword "COVID-19" was also connected to some keywords such as "public health", "crisis management", "nursing", "collective action", and "psychological safety", which were related to the medical action associated with the COVID-19 pandemic. Interestingly, only the keyword "crisis management" appeared in papers from



**4 Figure 1. Flow diagram of bibliometric analysis.**





**1** Figure 2. Correlations between leadership and COVID-19 in China based on keywords.

**1** Table 1. Findings of correlations between 'leadership' and 'COVID' based on abstracts written by Chinese authors using a systematic search.

Topic	Finding
Leadership	Inclusive leadership improved career sustainability. Serial mediating effect of inclusive leadership could identify key factors of career sustainability for individual employees.
Public health	Less preparation toward public health, insufficient guidance for clinical trials, and lack of cooperation between disciplinary/authority sectors that was unprofessional caused dissemination of COVID-19 virus spread fast in short time in China.
Psychological safety	People returned to work in the office during pandemic having high awareness toward health protocols. The level of education and place of work were key in influencing people to follow health protocols.

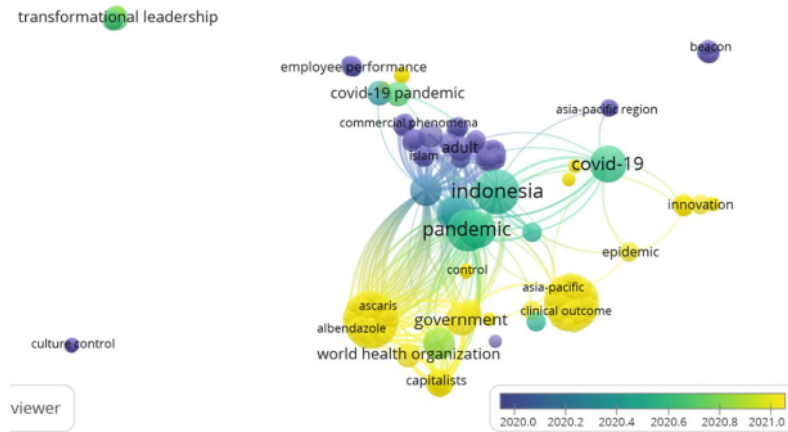
**1** 2021, which is marked with the yellow colored dots. Moreover, as Figure 2 shows, there was no entrepreneurial topic at all that was closely related to the topic of COVID-19. Figure 2 above shows the list of keywords which appeared in papers published between 2020-2021, as well as the timeline of the keywords, represented by the colored bar in the bottom right of the image. The full dataset can be found under *Underlying data*.

**1** Based on Table 1, inclusive leadership could improve career sustainability. This is surprising because China had the second-highest GDP after the USA in 2020 and did not emphasize entrepreneurial leadership, but inclusive leadership during the pandemic (Ahmed et al., 2021). Table 1 also shows that the government of China should have paid more attention to public health, so that the medical action could be implemented in a quick response after the pandemic started to spread. Lack of governmental awareness toward public health would cause loss of life and would burden the government with more expenses in order to care for infected patients (Shah et al., 2020).

**1** Surprisingly, based on Table 1, people who have been able to work in the office had the self-awareness to follow health protocols. People that want to return to their workplace need the safety guaranteed by the government and institutions that the area will be free from virus dissemination, safe to work in using standardized health protocol, and assurance that their workload won't make them sick, because sickness could make them more vulnerable to infection (Miftahussurur et al., 2022). Moreover, people want to make sure that when they return to work, their workplace is free from any contagious disease. As a result, people prefer working from home because it is safer (Mafruchati, 2020).

**Research trends around leadership in Indonesia during COVID-19**

Figure 3 shows that there was no correlation between topics related to COVID-19 and leadership in Indonesia. There was a topic of *transformational leadership*, but no string was attached from this dot to dots for major topics such as "pandemic", "Indonesia", or "covid-19". Research trends in 2021 focus more on the management of the pandemic or medical topics such as *Indonesian* and *pandemic*, *ascaris*, *albendazole*, *World Health Organization (WHO)*, and



**Figure 3. Correlations between leadership and COVID-19 in publications from Indonesia.**

**Table 2. Findings of correlations between 'leadership' and 'covid' based on abstracts written by Indonesian authors identified using a systematic search.**

Topic	Finding
Innovation	Remote working behavior with digital technology facilitates leaders to increase innovation in the workforce.
Capitalist	Central government take priority of regulation over economic and political interest, rather than the implementation of full health protocols. The budgeting policy by the central government also hinders regional governments in acting independently.
Employee performance	Negative emotions due to working from home can escalate and affect employee performance. The psychological well-being of employees is strongly impacted as a result of working from home.
Commercial phenomena	The supply chain around the world is disrupted because of the lockdown implementation along with the implemented health protocols. As a result, the number of available jobs were reduced in Indonesia as a result of many companies and firms suffering profit loss and sometimes bankruptcy.

epidemic. But there was a recent topic that is also connected to topics of *Indonesian* and *pandemic* which is *capitalists*. There was also the topic of *innovation* which is related to one of the key factors in entrepreneurial leadership. Other topics that may be related to leadership are *employee performance* and *commercial phenomena*.

shown in Table 2, the topic “innovation” found that remote work behavior can increase innovation. Rizou *et al.* (2020) stated that digital technology could facilitate leaders to encourage innovation. Digital technology equipped with the latest artificial intelligence could lead to finding more innovation and revolutionary ideas, but this does have a high monetary cost (Ratnasari *et al.*, 2020).

Additionally, using a virtual meeting place can help to cut costs during the pandemic, because companies can save on the operational cost for preparing and using a physical room. However, working from home for long periods of time could lead to increased stress for the employees, because employees cannot interact face-to-face with each other, which creates a lack of emotional interaction (Liao and Huang, 2016). Humans are social creatures that need to communicate physically to stabilize their mental health. Lack of social interaction could led to stress (Pei, Gunawan, and Jen, 2014). Working from home also impedes the ability to rest, because companies and institutions think that employees are available to work anytime, causing employees increased stress (Miguel-Puga *et al.*, 2020).

Under entrepreneurial leadership, the leader of the company or institution should attempt to understand the effects of the pandemic better and try to minimize the employees’ workload accordingly. Stress from a high workload can affect the immune system’s function and lead to a sudden drop in immunity against COVID-19 (Shammi *et al.*, 2020). A leader



should prioritize the work according to the vision of the company and adjust the working system to suit the current situation (Strubler and Redekop, 2010).

But in the case of Indonesia, the implementation of health procedures and an economic plan to combat COVID-19 were not entirely successful. Indonesian authority was impeded by many capital interests revolving around the management of the COVID-19 pandemic (Megatsari *et al.*, 2020). Rather than spending the government funds through expansionary fiscal policy to increase public health conditions and facilities, many politicians used these funds entrusted by the government for their personal interests, for example for gaining political votes (Mietzner, 2020).

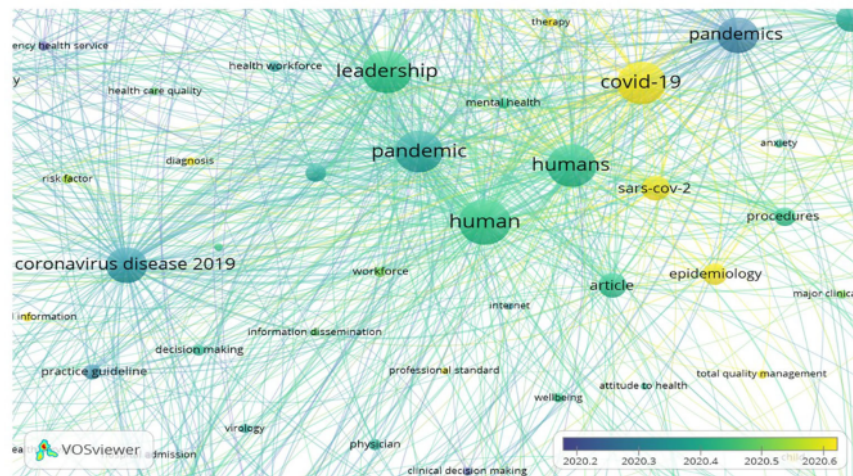
The Indonesian government has benefitted from the increase in remote work and has capitalized on the essential sectors that have been vital in handling pandemics, such as increasing the cost of swabs and PCR tests, and has been weak in enacting laws against those who have engaged in *covid management* (Djalante *et al.*, 2020). These sectors included those testing tools for COVID-19 and those providing social aid in the form of groceries and funds. For example the case of Juliari Batubara, the former Indonesia Minister of Social Affairs, who was arrested due to corruption regarding social aid during the COVID-19 pandemic, in what was the worst case of uncontrolled management of essential sectors during COVID-19 (Caesar and Naibaho, 2021).

Table 2 also shows that the supply chain has been disrupted during the pandemic, which could affect the national economy. While remote working can substitute for face-to-face meetings, it cannot be used to resolve supply chain distributions caused by transportation. In entrepreneurial leadership, a leader should recognize that a difficult situation can become an opportunity (Renko *et al.*, 2015). The government should have established proper regulations when anticipating the difficulties in distributing the supply chain during the pandemic. The lack of supply chains for necessities such as food materials will create price bubbling in the market, which could have detrimental effects and cause consumers to suffer (Muzakki, 2020).

**Research trends around leadership in the USA during COVID-19**

Figure 4 shows that there was a connection between the topic of COVID-19 and leadership. Another topic that might be related to leadership was “human” as the driver of leadership. Humans were the ones who implemented the leadership system and how good or bad the results are is based on how well humans implemented their leadership for the sake of the public’s interest (Mendenhall *et al.*, 2017).

1 There was also a topic of workforce, but the size was too small and too far from COVID-19 dot, so it was less significant in correlation with topics of “leadership” or “covid”. There was also no entrepreneurial leadership related to COVID-19; in fact, there was no topic of entrepreneurial leadership at all. It can be concluded that entrepreneurial leadership has not become popular enough to be used as a topic for research related to COVID-19.



1 **Figure 4. Correlations between leadership and COVID-19 in publications from the USA.**

**1** **Table 3. Findings of correlations between 'leadership' and 'covid' based on abstracts written by US authors identified using a systematic search.**

Topic	Finding
Leadership	Local government leadership's communication has reduced the level of stress and burnout of emergency workers effectively.
Human	Understanding the mobility patterns of society, especially the direction they are going was the key to stopping the spread of COVID-19. Mobility is influenced by socioeconomic factors. Lockdown should be implemented after the mobility pattern of society in China has been mapped.
Internet	Internet was inseparable for the activities of American people during the lockdown because internet was regarded as primary needs for people who did work from home during lockdown. Moreover, leaders from public service also rely heavily on the web based platform to provide the public service to society that they could not do face to face because of the government restriction to follow health protocol.

**1** Table 3 shows that based on the topic of "human", the research explained that in order to stop the spread of COVID-19 across the USA, understanding the mobility pattern of humans is key. Leaders of local and central governments in the USA have to understand humans' mobility patterns, which are influenced by socio-economic patterns. Effective leadership involves analyzing the current condition of society and taking action. This plays a crucial role in understanding the mobility pattern. Good leaders have to know the people they will lead in order to decide the most effective way of leading them. Otherwise, friction and disagreement would be created among society (Rachmat *et al.*, 2018). Based on Table 3, socio-economic factors also had to be considered before implementing the lockdown. Without considering the socioeconomic factors behind the mobility patterns of society, it would be difficult to completely map the pattern. Socio-economic factors always affect humans decisions, especially those related to their primary needs (Lahcen *et al.*, 2020).

**1** Table 3 also showed that effective communication from the local government can reduce the stress levels of health workers. A study by Esmer and Faruk stated that the goal of entrepreneurial leadership is to inspire employees with the vision that they can work together. In the COVID-19 pandemic, it is essential for both employees and their leader to share the same vision, which is to overcome the virus and reduce the number of deaths and active cases of COVID-19 in society (Hossain, 2020).

Figure 4 also showed that there were other COVID-19 related keywords in several papers which were published in the early months of 2020. Those keywords were also related to leadership, which were "decision making" and "information dissemination". Decision-making should be determined carefully by leaders (Rume and Islam, 2020) because flawed decision-making by the government can further the spread of COVID-19 and has resulted in a great number of people dying (Sharma *et al.*, 2021). If the government does not provide a good example to society, especially to health workers in regards to implementing COVID-19 measures, the rate of positive cases will be difficult to reduce (Bender, 2020).

A study by Kula *et al.* (2021) stated that bureaucracy has to be directed by an entrepreneurial leader so that each employee's potential can be awakened. That leader must have the ability to strategize in difficult situations such as preventing COVID-19, as well as revitalizing the local economy. COVID-19 was a serious problem for humanity which could demolish economy growth because of the restriction to gather on the public and meet with someone to prevent virus dissemination. As a result, the supply chain of the goods would be disrupted and led to the profit loss of many companies, led to the recession. Leader of each country should have strong intuition of entrepreneurial skill to overcome this pitiful situation. He/she should not only care for the entrepreneurs of the big companies, but also SMEs (Vanderford and Marcinkowski, 2015). The COVID-19 pandemic has brought misery to many sectors in Indonesia, and the government should identify any opportunity to regain economic prosperity. Leaders also have to be prepared for the risks that may come as a result of their actions (Febriyanti, Ratnasari, and Wardhana, 2022).

### Conclusion

Based on the results above, there is no single relationship between entrepreneurial leadership and COVID-19 as research topics in papers indexed in Scopus. For the topic of *entrepreneurial leadership*, China has more updated papers about entrepreneurial leadership than Indonesia, while the USA did not have an exact topic of entrepreneurial leadership. Instead, the USA combined the topics of "*leadership*" and "*humans*". No entrepreneurial leadership keyword was found in the published papers by US authors.

The results above also show that the topic of *innovation* was related to the topics of *leadership* and *COVID-19* in Indonesia. China emphasized more on the topic of *ethics*, which is related to the topics of *leadership* and *COVID-19*. For the USA, they emphasized the topic of *human* which was related to the topics of *leadership* and *COVID-19*.

Results of the literature review also showed that inclusive leadership was used by the Chinese government according to the samples. Papers written by USA authors showed that local government leadership was used for COVID-19 pandemic management. Meanwhile, no leadership topic in papers were written by Indonesian authors as samples of this study. In general, leadership was more common in topics of papers written by Chinese and American authors.

This study was limited to papers on the topic of leadership available from the Scopus website written by Chinese, Indonesian, and American authors. Moreover, the systematic search as a supplement method only explained the papers that contained *leadership* and *covid* topics in their abstract. The papers in this study's sample that were identified using this systematic search method are also very limited in number, and further studies are needed to explore more about the excluded papers. This study also recommends that further research should include more sources such as Web of Science, PubMed, or Google Scholar to provide more potential content and to enrich findings related to entrepreneurial leadership during the COVID-19 pandemic.

### Data availability

#### Underlying data

Zenodo: Entrepreneurial Leadership toward Global Management of COVID-19, Is it always being used during Pandemic? A Bibliometric Study. <https://doi.org/10.5281/zenodo.6050768> (Mendo *et al.*, 2022).

This project contains the following underlying data:

- China keyword.png [keywords of papers written by Chinese authors and correlation between them after analyzed using Vosviewer]
- China COVID Topics.csv [topics of papers written by Chinese authors and correlation between them after analyzed using Vosviewer]
- Indonesia COVID Topics.csv [topics of papers written by Indonesian authors and correlation between them after analyzed using Vosviewer]
- Indonesia keywords.png [keywords of papers written by Indonesian authors and correlation between them after analyzed using Vosviewer]
- USA COVID Topics.csv [topics of papers written by USA authors and correlation between them after analyzed using Vosviewer]
- USA keywords.png [keywords of papers written by USA authors and correlation between them after analyzed using Vosviewer]

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