https://doi.org/10.52131/joe.2023.0502.0132

*i*RASD Journal of Economics

Volume 5, Number 2, 2023, Pages 338 – 363

Journal Home Page:
https://journals.internationalrasd.org/index.php/joe

Oil Price Shocks Drive Corruption; A Bibliometric Analysis

Hammad Ashfaq[1], Mahwish Zafar[2], Bilal Zahid[3], Hafiz Muhammad Rizwan Khan[4]

[1] M.Phil. Scholar, Superior University Lahore, Pakistan. Email: hammad_punjabianz@hotmail.com
[2] Associate Professor, Faculty of Business and Management Sciences, Superior University Lahore, Pakistan. Email: mahwish.zafar@superior.edu.pk
[3] M.Phil. Scholar, Superior University Lahore, Pakistan. Email: bilalzahid376@gmail.com
[4] M.Phil. Scholar, Superior University Lahore, Pakistan. Email: hafiarizwankhan@gmail.com

ARTICLE INFO

Article History:

Received: April 23, 2023
Revised: June 26, 2023
Accepted: June 26, 2023
Available Online: June 27, 2023

Keywords:

Oil prices
Corruption
Bibliometric Analysis
Scopus

JEL Classification Codes:

B22 E10 E31

Funding:

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

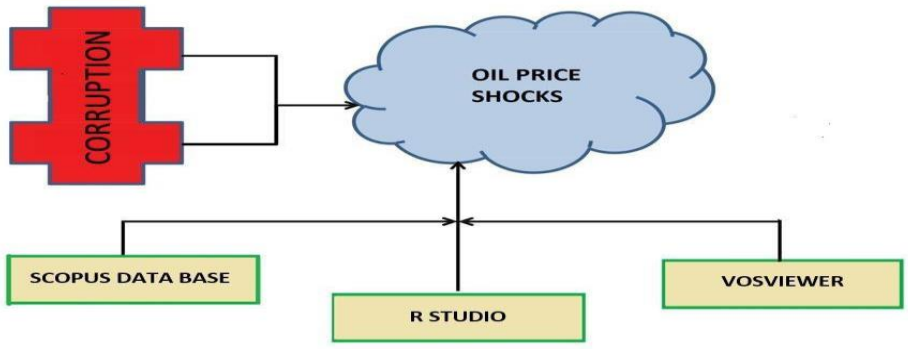
ABSTRACT

The world economy has a massive range of issues, including political instability, social unrest, unchecked corruption, unemployment, extreme poverty, etc. Developed countries have the resources to control it to some extent but it is difficult to remove all evils in the economy. The oil crisis has made things worse. This study proved that the stability of institutions was directly harmed by the relationship between oil prices and corruption. It has been explained how the oil crisis has changed societal structure by interfering with daily routines, academic calendars, health care facilities, transportation systems, and educational practices. For this, we use R studio productive techniques which include two types of methods first descriptive analysis like documents, and authors. Overview while another type contains structural analysis. The statistical software tool R-package and VOS viewer are used to do all of these operations. The findings show that effective government is a key tool for long-term economic success. In addition, oil prices have a favorable long- and short-term impact on economic growth. The research found little value in the findings that supported the short-term effects of governance and corruption control. This Study offers policy recommendations for creating long-term good governance that will assist national economic growth.

Corresponding Author's Email: hammad_punjabianz@hotmail.com

Citation: Ashfaq, H., Zafar, M., Zahid, B., & Khan, H. M. R. (2023). Oil Price Shocks Drive Corruption; A Bibliometric Analysis. *IRASD Journal of Economics*, *5*(2), 338–363. https://doi.org/10.52131/joe.2023.0502.0132

Graphical Abstract



1. Introduction

The topic of oil prices has consistently been prominent in global marketing. The oil market always performs a main leading position in the economy. Each economy faces development-related challenges because of oil price shocks due to international demonstrations like due to Russia and Ukraine war half of the world effect and the main commodity that creates all problems that are "Oil" and its availability because Russia is one of the main exporter of oil and due to war situation its supply was disturbed, with that other exporter country of oil increase the prices and earn high revenues then the importer countries are bound to increase oil prices and its shock creates negativity everywhere and many evils produce their identity corruption is one of them evil. Oil is therefore a major component of the economy and is used for transportation, manufacturing, and power generation (Hassan et al.; A. U. Shahid et al., 2022). Any change in the price of oil will have a substantial influence on the structure and policies of the economy because many developing countries rely on oil imports, like in Nigeria many times they are short of revenues due to low oil prices then their government decided to cut down expenditure to adjust to the oil price shocks and vice versa (Abu, David, Sakanko, & Amaechi, 2022; Awan, Rahman, Ali, & Zafar, 2023; Iyoko, 2020).Corruption is a problem that needs to be addressed in some capacity in an economy because it can delay growth and progress. Recently, Economists have looked into the connections between corruption, government, and economic growth (Chaudhary, Nasir, ur Rahman, & Sheikh, 2023; Li et al., 2022).

Additionally, we also saw that when oil tax revenues joined with regional government then huge profits and dividends create income inequality and it also gives an edge to the elite class group to make adjustments according to their requirements, and positive oil price shocks compact the labor income group and enhance the opportunities of another income group of persons that are linked with social evils mostly with corruption.Alexeev and Zakharov (2022); (Zahra, Nasir, Rahman, & Idress, 2023) Most of the time country's economy is compromised when there is a deep relation of elite class groups with government inequality of income that happened automatically due to this, it is quite easy for political leaders to create corruption in oil rents (Andersen, Johannesen, Lassen, & Paltseva, 2017; Asher & Novosad, 2023; Caselli & Michaels, 2013; Chaudhary et al., 2023; James & Rivera, 2022)**.**

1.1. Relationship Between Corruption and Oil Price

In addition to weakening trust, undermining democracy, and preventing economic growth, corruption causes inequality, poverty, social division, and environmental problems. Understanding how corruption operates and the institutions that promote it is necessary if we are to expose corruption and hold the dishonest accountable (Awan et al., 2023; Zahra et al., 2023).

Furthermore, Ahmad (2013) argue that decline in productivity has a direct impact on the unemployment rate, real wage rate, product selling price, level of consumption, investments, interest rate, and inflation rate. Using the Caspian oil and gas example, researchers examined the effect of corruption in the oil and gas sector on the country's economic growth and discovered that the internationalization of corruption had a negative influence on the sector's growth (Bhatti, Chaudhry, & Bashir, 2021; Donwa, Mgbame, & Julius, 2015; Pleines & Wöstheinrich, 2016). Growth and corruption live together in an economic system, and corruption becomes the primary factor that allows income groups to increase their income inequality. Corruption can occur in any setting where there is a propensity for one individual to take advantage of another. Political scholars and financial experts have examined the historical relationships between corruption, governance, and monetary development (Bilal, Shah, Rahman, & Jehangir, 2022; Shahid, Muhammed, Abbasi, Gurmani, & ur Rahman, 2022). By focusing on oil demand in comparison with oil supply it has been found economic instability prevails everywhere, the current study aimed to broaden the scope of earlier research. Assessing the long and short-term linkages

between oil production and its consequences on various industries across the country is the focus of practical attention.Shafique, Rahman, Khizar, and Zulfiqar (2021); Usman, Rahman, Shafique, Sadiq, and Idrees (2023) When we focus on the implication of oil import and its impact, then corruption captured everything due to the instability of the economy so significant barriers are always there like educational success, development, and institution quality are the root causes of inequality in the distribution of wealth. Corruption is a problem, and the high tax load is part of the problem (Amzad Hossain et al., 2022; Usman et al., 2023) . In this context of global trade, a significant number of examples of corruption have been documented. In all these situations when we talk about the term "nationalization" has been frequently associated with corruption when it comes to economic developments because public or state firms are the ones that support certain activities like giving clients jobs. Over the years, corruption patterns have evolved, and if it saturates an economy deeply, it cannot be avoided (Ali, ur Rahman, & Anser, 2020; Dawood, ur Rehman, Majeed, & Idress, 2023).

1.2 Objective of the Study

The primary goal of this study is to evaluate how fluctuations in oil prices affect corruption because of political unpredictability and instability, making it difficult to reduce price fluctuations and eliminate corruption. (Nik Adib et al., 2019; Paul, Sarkar, Rahman, & Khaleque, 2018). The government changes the price of oil frequently due to this, the minds of investors and the public become uncertain about the current situation. Specially in developing countries, some governments try to manage the price change of oil on weekly basis. Before government changes the price twice a month (after every week) frequent changes in price create corruption in every sector from top to bottom it all happens because we have political instability and economic instability as well. So, the findings show a frequent change in oil price in import countries creates doubts and uncertainty in the economy so, there is a need to Investigate it more in the same portion to identify the cause of corruption due to changes in oil price (Ali et al., 2020; Kenayathulla, Ahmad, & Idris, 2019). The bibliometric analysis provides the station to all the researchers and policy makers to take solution from this analysis because all oil price shocks and drive corruption have significant relationship between them which we show in literature review as well (Chaudhary et al., 2023; Hafiza et al., 2022; C. Shahid et al., 2022).

1.3 Contribution Towards Study

By filling in the following knowledge gaps, this work expands on what is already known:

1. While the impact of corruption on oil price shocks has been estimated by few researchers, the influences remain vague and require more investigation. To the best of our information, there are only two studies Mlaabdal, Chygryn, Kwilinski, Muzychuk, and Akimov (2020) connected oil prices shocks and its effect all over the economy have been found in previous literature
2. The previous literature used common software and database like web of science, dimensions and used vos viewer and R Studio (Khan & Saif-ur-Rehman). These old databases have restricted the scope of this new technique and they have some drawbacks like these databases not use all language articles. In difference to the previous mechanism, this study works a novel database with new solutions, like Scopus database with all language article previous literature did not use it in oil price market dynamics with corruption.
3. The majority of current literature of bibliometric analysis only focus on oil price and its market with supply and demand but this research considers oil price shocks in a new framework by using vos-viewer, R studio collectively with Scopus data base to achieve robust results.

This study suggests multiple contributions to the literature. For this, bibliometric analysis was used in the paper because the bibliometric technique shows impactful results. It's just like "One Window Operation" Where the researcher can get information from top authors, top publications, and top citations of their relevant field in one article. In this paper, we use oil price

shocks to drive corruption where we find many research gaps like when oil prices change in developing and developed countries both are ready to face the music because first in developed countries Komal et al. (2023); Saleem et al. (2022), no doubt these types of countries have abundant resources for all the economy but oil commodities have less elastic demand so in a shortage situation all development became useless and it creates pressure on authorities and in this particular situation chances of the existence of corruption getting more and more whereas in underdeveloped countries where there is no resources are available due to political instability and it gives birth to corruption (Ilyas, Banaras, Javaid, & Rahman, 2023; Usman et al., 2023). So, the novelty of this paper is that in the current situation every country in the world wants a complete backup of oil then they have a chance to control the other countries' economy because half part of the world is in a war situation due to this oil trade already create mass for everyone. In this situation, some research questions arise:

RQ1) Why every exporter country of the oil market wants to create a monopoly RQ2) If exporter countries make a monopoly on oil, then who will become the first indicator in the importer country to demolish the economy is it corruption or bad governance? RQ3) Oil price market moves with the permission of highly developed countries why they needed to control it? RQ4) In this modern era, some countries where oil have massive in production but they still behind in development and growth process why? RQ5) In our study in Bibliometric analysis, where we give multiple articles and citation of different authors, all their contributions and efforts and research are come from western countries why Asian countries are still behind in important topic (Oil production)?

So, this study contributes in the form of bibliometric analysis where, 852 authors and 427 articles, 18299 references were used followed by the time period of 1990 to 2022 annual growth in this topic is 7.98%. this article is helpful for all the policymakers, business sectors, and governments because it identifies the main cause of oil price shocks and corruption in one article

The following sections make up the remaining text in this article. A review of the literature is presented in Section No. 2, and a discussion of the methodology which employs Bibliometric Analysis using R Studio and Vos viewer is presented in Section No. 3. Real findings are presented in tables and graphs in Sections 4 and 5, along with recommendations for the future and conclusions.

2. Literature Review

The systematic study of the literature has focused on the basic connection between fluctuations in oil prices and corruption. Nowadays oil prices in developing countries where oil is imported, play a key decider role in whether the economy moves forward or it came back, in a country like Pakistan everything will go well but with the appearance of oil otherwise situation becomes uncertain and economic instability will prevail everywhere. When we talk about income and exchange rate fluctuation policy, the price of oil could have an effect on the economy.Tancho and Jermsittiparsert (2020) In another paper Mahmood (2021) noted that the impact of governance and control of corruption will enhance the economic growth in Saudi Arabia for this, they use data between 1996 to 2019. The limitation or research gap is that short-run measurements would affect the economy badly so researchers suggested that quality of governance and full control of corruption can make theVan Eck and Waltman (2010); Van Eck and Waltman (2011) economy on the right path. We all know Pakistan's economy is heavily dependent on oil because oil is one of the basic needs. The current study's motive is to look at the connection between oil prices and corruption Ahmad (2013) also focuses on oil prices and changes in oil prices create unemployment because industrial and agricultural production effects due to oil prices variation cost of production increases and the unemployment rate increases. He used the wage efficiency model and took data from 1990 to 2010 in months. The finding of this paper shows that oil prices cause a clear change in the real interest rate and unemployment rate

in Pakistan so the researcher suggested that oil prices could be improved for future forecasting in long run. Madathil, Palaniyappa Shanmugam, and Thippillikat (2022) examined that oil-produced countries have control over corruption due to government strong policy on crude oil prices using the time period from 2002 to 2017. The findings show that due to the instability of government corruption automatically increases and many other evils disturb the flow of crude oil production. Furthermore, the study finds that oil produced countries should adopt aggressive policies to overcome corruption (Bai, Jayachandran, Malesky, & Olken, 2013; Rahman, Chaudhry, Meo, Sheikh, & Idrees, 2022; Zhu, Fang, Rahman, & Khan, 2023). The study looks at the strong link between poverty and corruption, especially in emerging nations. Similarly, Onakoya and Folorunsho (2015) also finds that kind research where corruption flourish very fast due to weak economic system and they used 18 selected African countries where it happens frequently, some of the countries are, Cameroon, Niger, Mali, Burkina Faso, Ghana, Kenya etc.

Furthermore, Ali and Solarin (2020) using the GMM technique and panel data from 59 countries throughout the years 1996 to 2016. According to the research, there is a direct correlation between military spending and corruption, and in regions where corruption is more common, military spending tends to increase. Same Farzanegan (2017) also studied the impact of oil rents on military expenditure the researcher also agreed that there is a significant dependency in military expenditure with level of corruption in MENA region with the time period of 1984-2014. Abu et al. (2022) For this, a period of 2000 to 2017 has been taken, and the findings and results demonstrate a large positive effect of oil output on corruption. In Brazil, every time an election year arrives, there is a clear and strong association between oil price flow and corruption. Moreover, the flow of corruption is higher after elections whether it is boom period or depression. Additionally, Aslaksen (2007) investigate the study of impact of availability of natural resources become the cause of corruption in 149 countries followed by the time period of 1970-2006 (Rahman et al., 2022). The finding and results show that energy rent is connected with corruption and it is also found that level of oil quantity and oil capital are directly related with corruption in the country it doesn't matter whether the country have democratic system or not (Hanif, Nawaz, Hussain, & Bhatti, 2022; Liu, Sadiq, Ali, & Kumail, 2022).

3. Methodology

By statistically evaluating literature review and recognizing a number of research papers published and their impact on the citation, the bibliometric techniques are used to evaluate the efficient growth of the economy. Researchers who want to look at the progress of science in the economy may find this kind of study useful since bibliometric analysis might reveal novel publication strategies and new modes of inquiry. Bibliometric can be defined as the quantitative approach to citation analysis and content evaluation for academic publications, books, and scholars.

3.1. Data Association and Cross-Section

The authors of this work have created the renowned academic search database Scopus, which enables users to learn about the broad overview of global research output in a variety of study fields, including administration, Economics, business, finance, accounting, and more precisely the social sciences field. The Scopus database was used for this study because, when Scopus and Web of Science were compared, it was discovered that Scopus had more journal coverage than Web of Science.Mongeon and Paul-Hus (2016) The Scopus database, an abstract and indexing database, is created by Elsevier Co. This database, offers access to STM (Science, Technology, and Mathematics) journal articles and the references used in those publications, encompassing 14,234 STM and social science titles from 4,209 publishers, is the largest single abstract and indexing database ever developed. (Burnham, 2006). Scopus incorporated the terms "Oil Prices" OR "Price" AND "Corruption" in the title search when looking for articles. The time period for the search is 1990 through 2022. Research papers made up the remaining

publications, yielding a total of 806 articles for bibliometric analysis. (Chaudhary et al., 2023; Usman et al., 2023).

3.2. Bibliometric Mapping

Bibliometric maps can be made, viewed, and studied using the computer program VOS viewer. It provides big bibliometric maps in a clear manner, with an emphasis on the map's graphical representation. The VOS viewer can be used to analyses bibliometric network data to look into various relationships, such as co-authorship and citation relationships between academics, institutions, and countries. Bibliometric mapping is employed to look at the sector's structure and dynamics in order to gain important insights about Oil pricing and Corruption (Dawood et al., 2023; Shahzadi, Sheikh, Sadiq, & Rahman, 2023).

3.3. Research Design

A statistical historical analysis of publications growing in the field from 1990 to 2022 is done to manage the expansion of the research of oil prices and corruption. The topic of oil prices and corruption can be found in business, management, economics, and accounting literature, according to the accumulation of references across time. Because of this, we are able to identify the key business trends and understand how the debate around corruption and oil rates changed over the last 30 years. R Studio and scientific mapping programmed VOS viewer are used to accomplish this. Clustering and visualization techniques are used since this programmed enables the completion of several analyses.

Table 1
Key Details About Data Analysis

DESCRIPTIONS	RESULTS
MAIN INFORMATION ABOUT DATA	
Timespan	1990:2022
Sources (Journals, Books, etc.)	326
Documents	427
Annual Growth Rate %	7.98
Document Average Age	8.17
Average citations per doc	13.13
References	18299
DOCUMENT CONTENTS	
Keywords Plus (ID)	938
Author's Keywords (DE)	1236
AUTHORS	
Authors	852
Authors of single-authored docs	158
AUTHORS COLLABORATION	
Single-authored docs	164
Co-Authors per Doc	2.08
International co-authorships %	26
DOCUMENT TYPES	
Article	427

Figure 1: All Information About Data

Aria and Cuccurullo (2017); Börner, Chen, and Boyack (2003); Cobo, López-Herrera, Herrera-Viedma, and Herrera (2011) To build bibliometric networks, each is subjected to the typical full counting procedure. When analyzing the references, applying diversity of strategies and five vital processes. And name of this plotting procedure remained.

PHASE 1 ANCIENT GROWTH	A thorough inspection in titles, summaries, and keywords used to describe the historical evolution of the primary concepts contained in publications on oil prices and corruption.
PHASE 2 CO-CITATION STUDY	Highest foundations with their references for information of oil and its prices and corruption are listed in depth.
PHASE 3 CO-AUTHORSHIP ANALYSIS	A network analysis of worldwide collaborations between authors on theme of corruption & oil prices.
PHASE 4 KNOWLEDGE BASE STRUCTURE AND INTELLECTUAL PROPERTY	Bibliometric networks have been developed using co-citation exploration with co-word study to gauge the structure of the intellectual knowledge base.
PHASE 5 PRIOR TIME AND KEYWORDS ANALYSIS	Keyword co-occurrence analysis is segmented by publishing time zone to display evolution of keywords throughout the specified time period.

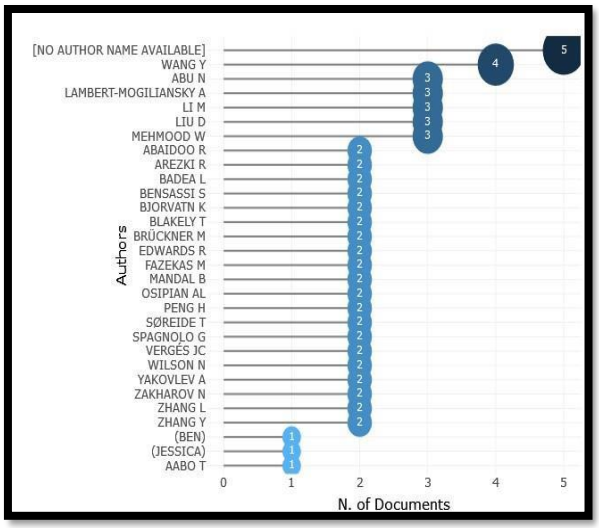
4. Results & Discussion

4.1. Authors co-citation Study

First of all, look at Table 2 we take most productive authors who has multiple contributions in different field of the economy. For this we show articles and their fractionalization and then citation and their average with authors. Furthermore, we also give ranking according to their articles and citations. In Figure 1 and Table 2, shows top twenty foremost authors in the field of Oil price and corruption. A detailed assessment presented in Table 2 expose that most productive authors are Wang Y with 4 published articles and its articles fractionalization is 1.83 with citation of 123 and then it followed by Lambert-Mogiliansky A, Li M., Liu D., Mehmood W and Abu N. with 3 published articles with 116, 15,15,8,7 citations respectively. Spagnolo G. also has an important contribution towards publication with 2 articles followed by 82 citations. Figure 1(B) also presents the most dynamic authors in Vos viewer. In all these authors Wang Y. work is most effective and detailed article that's why he had maximum citations with 123 on oil prices and other fields of the economy.

Table 2
For Top Most Authors Co-Citation

RANKING	AUTHORS	ARTICLES	ARTICLES FRACTIONALIZED	CITATIONS	CITATION/ARTICLES
1	WANG Y.	4	1.83	123	123/4=15.7
2	LAMBERT-MOGILIANSKY A.	3	1.33	116	116/3=38.6
3	LI M.	3	0.83	15	15/3=5
4	LIU D.	3	0.83	15	15/3=15
5	MEHMOOD W.	3	0.65	8	8/3=2.6
6	ABU N.	3	1.25	7	7/3=2.3
7	SPAGNOLO G.	2	0.75	82	82/2=41
8	AREZKI R.	2	1.00	81	81/2=40.5
9	BLAKELY T.	2	0.50	77	77/2=38.5
10	EDWARDS R.	2	0.50	77	77/2=38.5
11	WILSON N.	2	0.50	77	77/2=38.5
12	ZHANG Y.	2	0.50	65	65/2=32.5
13	SØREIDE T.	2	1.00	60	60/2=30
14	YAKOVLEV A.	2	0.58	29	29/2=14.5
15	OSIPIAN A.L.	2	2.00	24	24/2=12
16	BRÜCKNER M.	2	0.83	17	17/2=8.5
17	BENSASSI S.	2	0.75	9	9/2=4.5
18	ZHANG L.	2	0.50	7	7/2=3.5
19	ZAKHAROV N.	2	1.5	6	6/2=3
20	BADEA L.	2	0.75	5	5/2=2.5



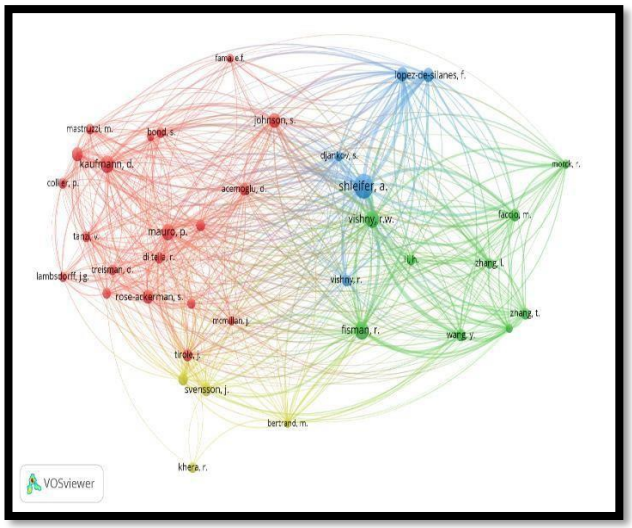


Figure 2(A): Figure for top most authors Co-citation **Figure 2(B): Figure for top most authors Co-citation**

4.2. Descriptive Analyses by Years

Since there were few research publications produced during this time period on this particular topic, the research study on how variations in the oil rates effects corruption began in 1990 and uses data from that year. After the year 2000, and particularly after the 9/11 terrorist attacks, more studies were conducted, especially because the global oil market began to vary rapidly. When the financial crisis of 2008 hit, other studies on various topics were also initiated. As you see in Figure 2 shows the ups and downs of the annual evolution in oil price market which shows their articles and citations trending and has a significant increase can be seeing after 2010. In late 90s a very few articles were available because of lack of resources and technology which clearly shows decreasing situation in this era. In Figure A which holds citations which were more flexible than Figure B because in Figure A has a huge citation year especially during 2002 to 2006 and then after 2015 but in Figure B shows increasing with steady and slow speed because with the passage of time more researchers are engaged in the oil price market to investigate that why corruption happens when oil prices changes. Furthermore, in this study we take 30

years' data from 1990 to 2022 (1993 and 1995 data are missing) to identify the main reason of oil price shocks and its implications that creates corruptions in like Pakistan. So its descriptive analysis gives us the variations between the years that when authors published articles and give its citations.

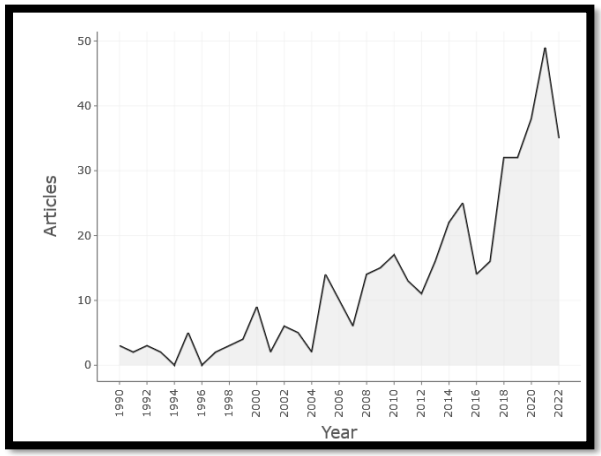


Figure 3(A): Analyses of Citations

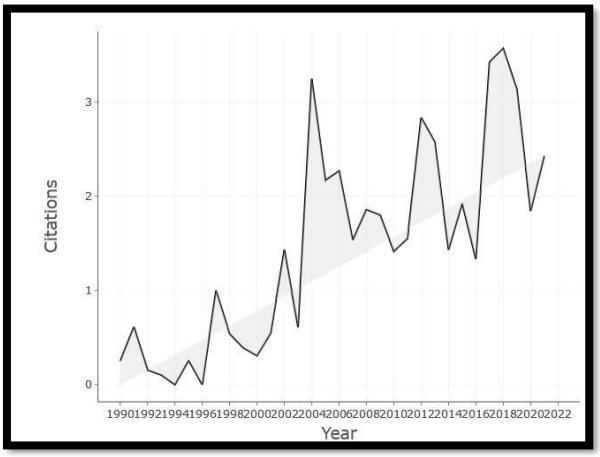


Figure 3(B): Analyses Articles by Years

4.3. Descriptive Analyses

We obtained the data for Table 3 from the Scopus data source and ran the data through the R studio software. The findings indicate diverse nations have varying numbers of articles that how variations in Oil prices cause economic corruption. As we see in the table USA is on top with 61articles along with SCP 47 & MCP 14 and its frequency would be 0.143 after that it followed by United Kingdom which have 24 articles on oil price shocks and its SCP 12 & MCP 12 as well with the frequency of 0.056. China also have a significant result in publishing the articles with 19 and SCP 8 & MCP 11 its frequency shows 0.044. In Figure 4 (A) & (B) shows the results very efficiently like in figure 4 (A) shows 2 colors sharing with MCP & SCP and we take number of documents on X axis and Countries on Y axis. In figure 4(B) shows different styles of countries publishing articles as we seen in this graph it shows multiple waves and its connectivity with different countries and it we make it on Vos viewer and figure 4 (A) make it on Biblioshiny.

Table 03
Top Most Countries Articles

COUNTRY	ARTICLES	SCP	MCP	FREQUENCY	MCP RATIO
USA	61	47	14	0.143	0.23
UNITED KINGDOM	24	12	12	0.056	0.5
CHINA	19	8	11	0.044	0.579
INDIA	15	14	1	0.035	0.067
SPAIN	13	10	3	0.03	0.231
GERMANY	11	8	3	0.026	0.273
AUSTRALIA	10	7	3	0.023	0.3
NIGERIA	9	6	3	0.021	0.333
FRANCE	7	6	1	0.016	0.143

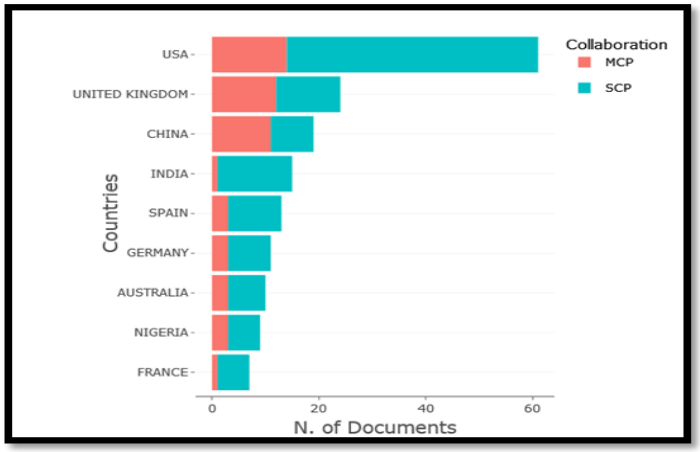


Figure 4(A): Top Most Countries Articles

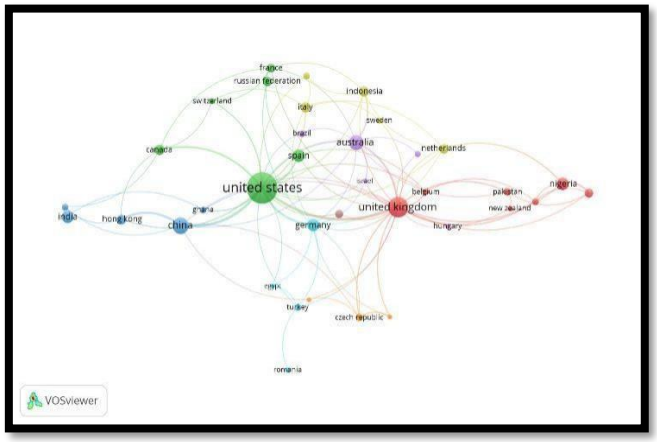


Figure 4(B): Top Most Countries Articles

4.4. Descriptive Analyses

Table 4 with figure 5(A) & (B) shows different citations of top most countries and it also shows average article citations like in this particular table USA on top on citation and article publishing as well USA with total 1072 citations along average article citations 17.57 and it followed by United Kingdom it shows 589 citations, its average would be 24.54. Like, in this descriptive analysis we have a lot of countries which has many citations but we take top ten countries with total citations of around 2500 on oil price shocks which derived corruption. In Figure5 (A) & (B) shows different software results like A figure shows biblioshiny results which shows that USA on top with 1072 citation and New Zealand on last in this figure with 77 citations but now in current world economy conditions oil market is the main element so many researchers are engaged in different articles and cite the publication with different countries as we seen in this figure. Figure (B) shows Vos viewer which shows connectivity of different countries with mapping.

Table 4

Top Most Countries Citation

COUNTRY	TOTAL CITATION	AVERAGE ARTICLE CITATIONS
USA	1072	17.57
UNITED KINGDOM	589	24.54
FRANCE	318	45.43
HONG KONG	302	60.4
CHINA	290	15.26
SPAIN	228	17.54
AUSTRALIA	191	19.1
GERMANY	172	15.64
INDIA	97	6.47
NEW ZEALAND	77	38.5

5.

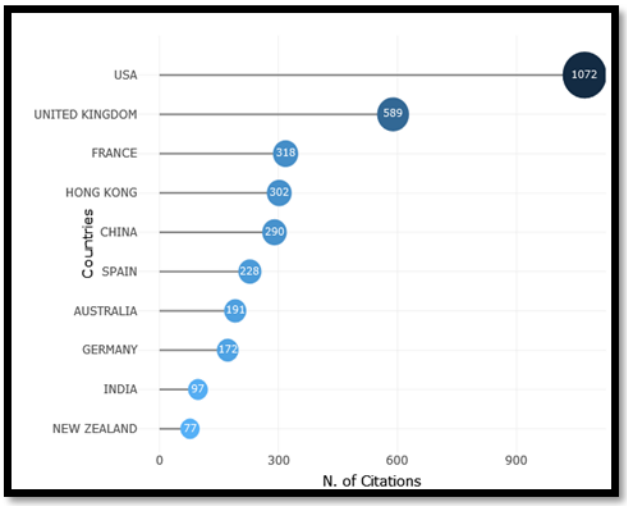


Figure 5(A): Top Most Countries Citation

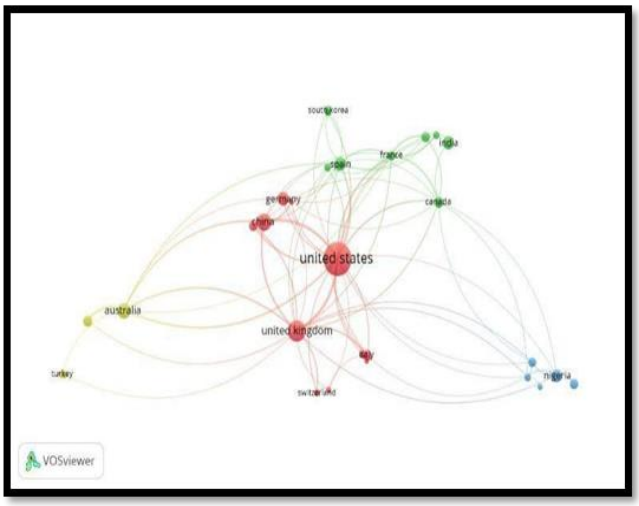


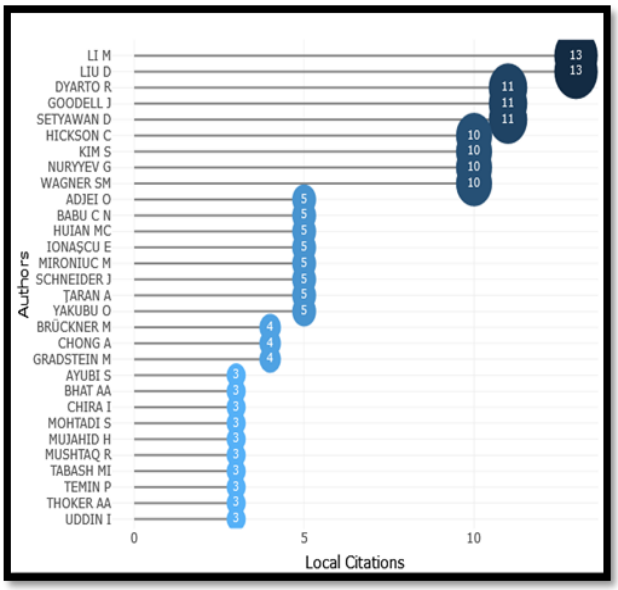
Figure 5(B): Top Most Countries Citation

4.5. Descriptive Analysis

Table 5
Top Most Authors Local Citations

AUTHORS	LOCAL CITATIONS
LI M	13
LIU D	13
DYARTO R	11
GOODELL J	11
SETYAWAN D	11
HICKSON C	10
KIM S	10
NURYYEV G	10
WAGNER SM	10
ADJEI O	5

Table 5 shows descriptive analyses on most top authors with local citations before that we study most citation on different country's authors as we see in this table LI.M. on top with 13 local citations this author already has many published articles but its citation on oil price were very significant after that LIU.D. also have 13 local citations LIU. D. and LI.M have combined citations on different articles as well and then dyarto r, goodellj, setyawan d, there are 11 local citations for all three. The results of local citations are also shown in figures 6 (A) and (B). Numerous writers are listed in Fig. A with their local citation counts, however the table only includes the top ten local cited authors. In contrast, Fig. B shows mappings of author local citations with connectivity and its connections, and there are more than 10 authors with the same local citation who are connected to one another.



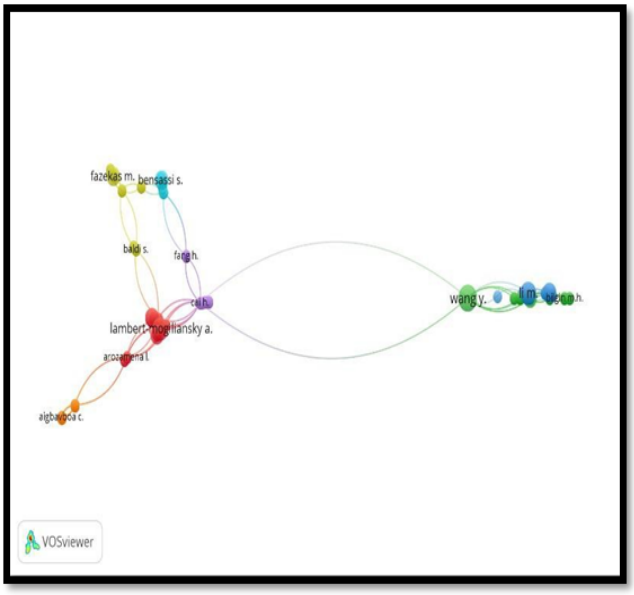


Figure 6(A): Top Most Authors Local Citations **Figure 6(B): Top Most Authors Local Citations**

4.6. Descriptive Analysis

Table 6 where descriptive analyses on top most relevant affiliation of articles among the oil prices research, the University Utara Malaysia is in top position with maximum 10 articles, followed by University of Otago with 8 articles, the Australian National University, the University of Ibadan, and Xi'an Jiaotong Usniversity with 6 articles each, Guangzhou University, Institute of Economics, International Institute for Applied Systems Analysis, Universidade Federal De Uberla, Ndia, and University of California with 5 articles each, and University of Otago with 6 articles. A more thorough review of the amount of citations and authors reveals where these universities have strong connections to one another in earlier tables. Figure 7 displays the name of the intuition on the left and the number of articles with University of Utara Malaysia at the top and 10 articles with pertinent affiliations on the right.

Table 6
Top-Ranked Affiliations with Articles

AFFILIATION	ARTICLES
UNIVERSITI UTARA MALAYSIA	10
UNIVERSITY OF OTAGO	8
AUSTRALIAN NATIONAL UNIVERSITY	6
UNIVERSITY OF IBADAN	6
XI'AN JIAOTONG UNIVERSITY	6
GUANGZHOU UNIVERSITY	5
INSTITUTE OF ECONOMICS	5
INTERNATIONAL INSTITUTE FOR APPLIED SYSTEMS ANALYSIS (IIASA)	5
UNIVERSIDADE FEDERAL DE UBERLÃ‚NDIA	5
UNIVERSITY OF CALIFORNIA	5

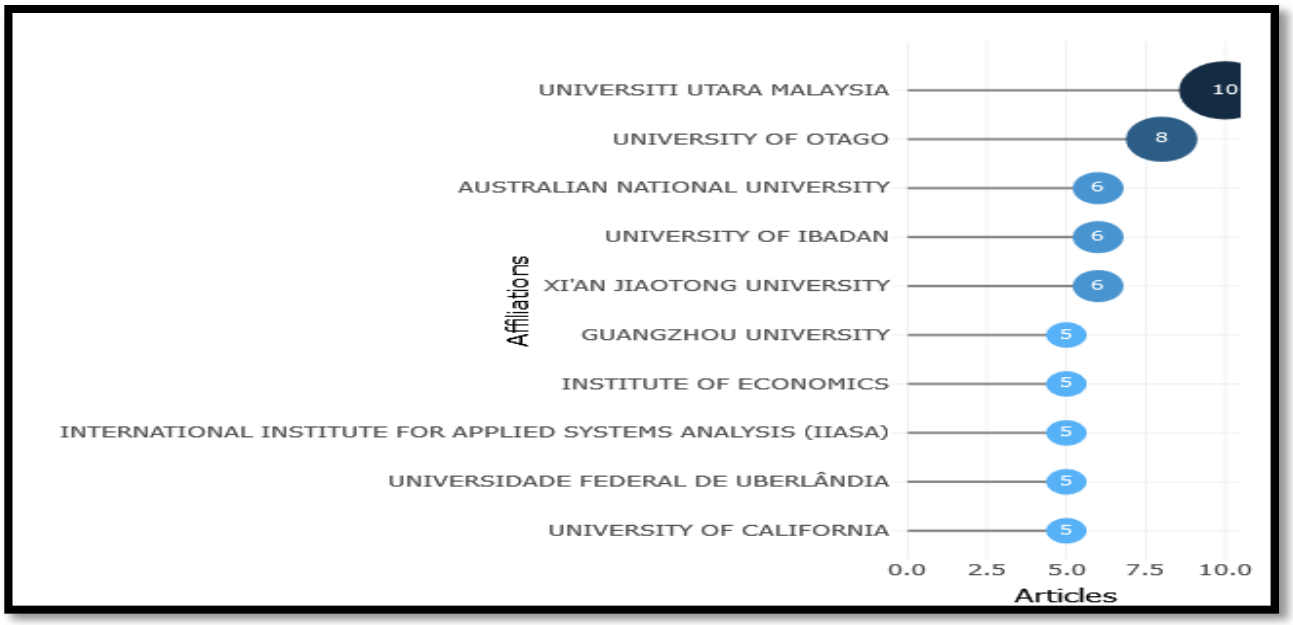


Figure 7: Top Most Relevant Affiliation of Articles

4.7. Descriptive Analysis

Table 7 shows descriptive analysis of the top keyword co-occurrences. A document of keyword co-occurrence is a visual graph that demonstrates the symmetry of the existence of a specific term. It is also known as a large wire connection between each other. In the grid, the term with the greater frequency also appears more frequently, and vice versa. The quick increase in keyword usage suggests novel research trends.

Table 7
Top Most Keyword Co-Occurrences

KEYWORD	OCCURRENCES	TOTAL LINK STRENGTH
Africa	5	18
Article	8	65
Asia	10	40
China	12	31
commerce	10	65
commercial phenomena	8	64
commodity price	6	17
competition (economics)	6	16
costs	10	32
crime	17	77
developing countries	10	53
developing country	5	24
developing world	8	27
eastern hemisphere	5	21
economic development	7	21
economic growth	9	45
economics	21	102

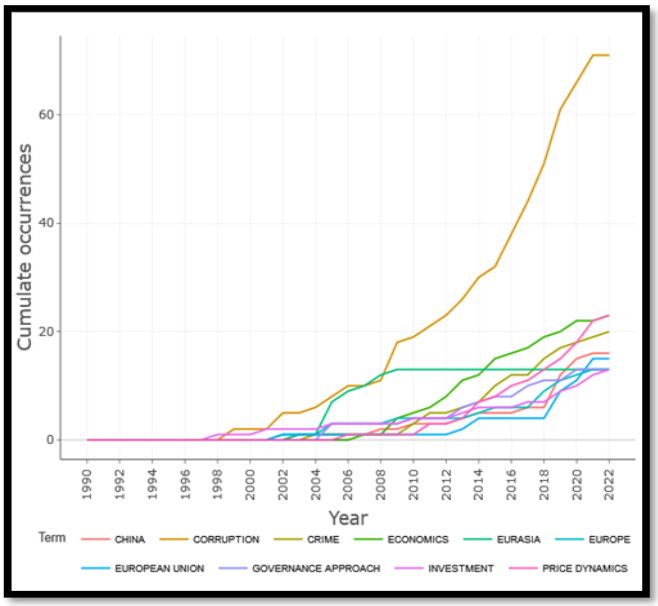


Figure 8(A): Top Most Co-Occurrence with Keywords

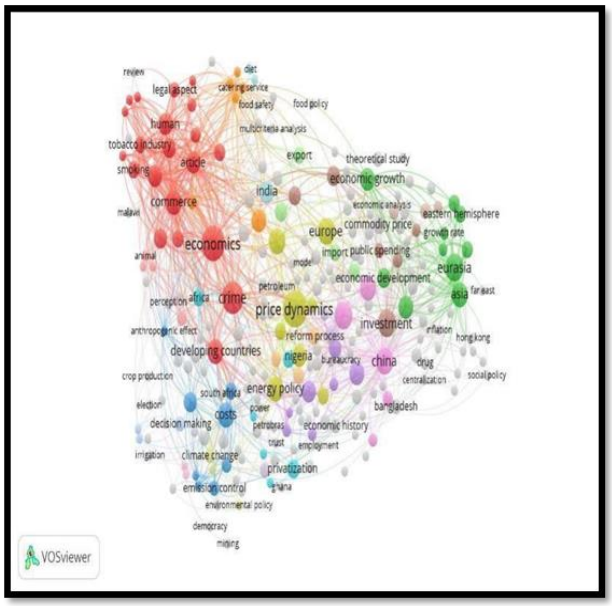


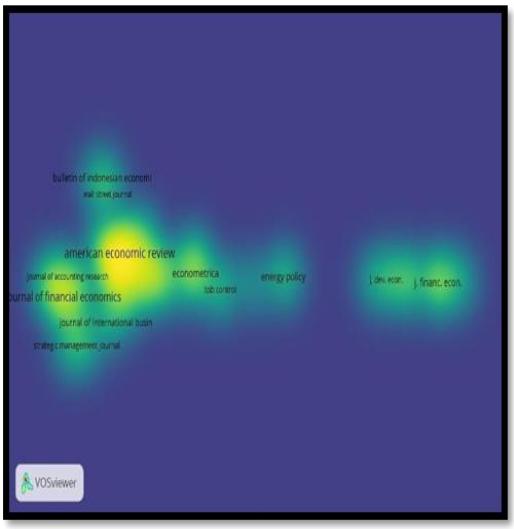
Figure 8(B): Top Most Co-Occurrence with Keywords

4.8. Descriptive Analysis

Table 8 impactful top sources journal published a lot of articles on oil prices for this we take journals which contain their articles and citations with total link strength in the table. The linkage and distribution of knowledge bases are reflected in this practice the Vos viewer source database for in Figure 9(A). One of the most influential and active journals for studying oil prices is Energy Policy, has 8 articles with 73 citations and a total linked strength of 364, as shown in Fig. 9. and Table 8, followed by Bulletin of Indonesian Economic Studies, which has 7 notable publications, World Development, European Journal of Political Economy, Rand Journal of Economics, and Tobacco Control, which each have 4 publications. Three articles were published in the Journal of Financial Economics, Applied Economics, each having a very strong comparison to the others. The annual trend of the top journals, as determined by the Scopus database, is shown in Fig. 9(B).

Table 8
Top Most Impactful Source

SOURCE	ARTICLES	CITATIONS	TOTAL LINK STRENGTH
Energy policy	8	73	364
Bulletin of Indonesian economic studies	7	51	32
World development	4	90	1044
European journal of political economy	4	54	949
Rand journal of economics	4	46	545
Tobacco control	4	32	7
Journal of financial economics	3	158	3538
Applied Economics	3	28	314



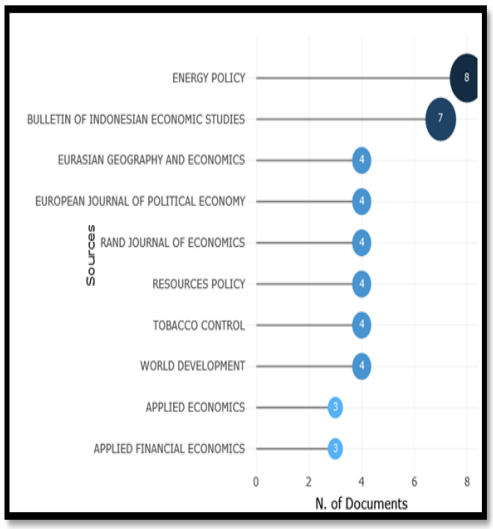


Figure 9(A): Top Most Impactful Source **Figure 9(B): Top Most Impactful Source**

4.9. Descriptive Analysis

Table 9 have analysis of most impactful co words trending which are used in oil price paper for this oil price word is on top with frequency of 409 along with economic word 286 frequency then price commodities have 277 frequencies. Furthermore, countries have a very significant results in this like 264 all these terms have created a word cloud in below-mentioned figure 11. The basic objective of the co-word analysis is to create attraction between conceptual structure and co-occurrence network. In figure 10 (A) shows a very strong and colorful picture of the co word analysis in descriptive method it contains different colors word most prominent would be "price" "economic" and "oil" etc. while on other side figure 11 (B) show Vos viewer creation of co-occurrence of keyword analysis.

Table 9
Top Most Impactful Words Trending

TERMS	FREQUENCY
Oil price	409
economic	286
Prices of Commodities	277
countries	264
government	238
political	231
public	231
paper	228
study	228

Figure 10(A): Top Most Impactful Words Trending

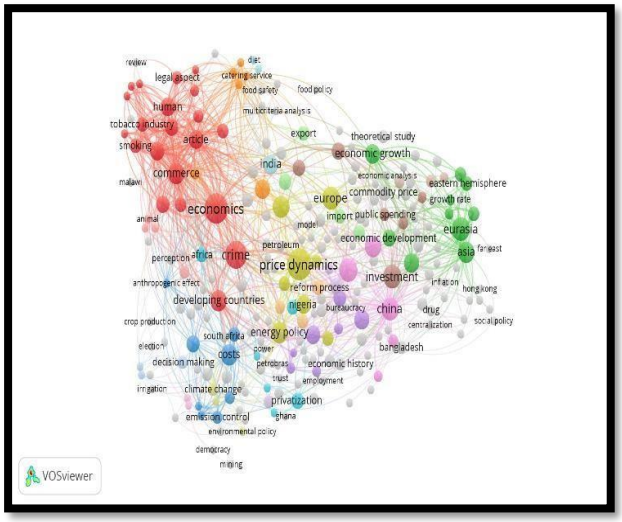


Figure 10(B): Top Most Impactful Words Trending

Table 10
Word Tree Map

TERMS	FREQUENCY
corruption	71
economics	23
price dynamics	23
crime	20
china	16
European union	15
Europe	13
governance approach	13
investment	13
poverty	12

The word tree map in R studio is displayed in Figure 11. It is a highly distinctive and varied data set that provides a variety of information around data displays various frequencies and their percentage contributions. The data, which is shown in Figure 11 as covered squares using a tree map, reveals major relations that were used in articles. The colour scheme & size dimension help to show association and significance. The grouping of probable phrases that allude to oil price shocks is shown by the tree map.

Figure 11: Figure for Word Tree Map

4.10. Three Field Plots

To evaluate the association between causes on (left side), keywords on (right side), and nations on (middle), we utilized a three-field plot, also referred to as the Sankey diagram (middle). The three-field graphic shows the flow trend into multiple entities. In a three-field plot, widths of the boxes and arrows correspond to the quantities and numbers they represent. (Soundararajan, Ho, & Su, 2014) The keyword-identified topic is best illustrated by the three-field layout. The authority widths foremost from keywords like "oil price," "corruption," and "economic growth" in Fig. 12 are the biggest signs that several journals countries utilize these expressions in papers.

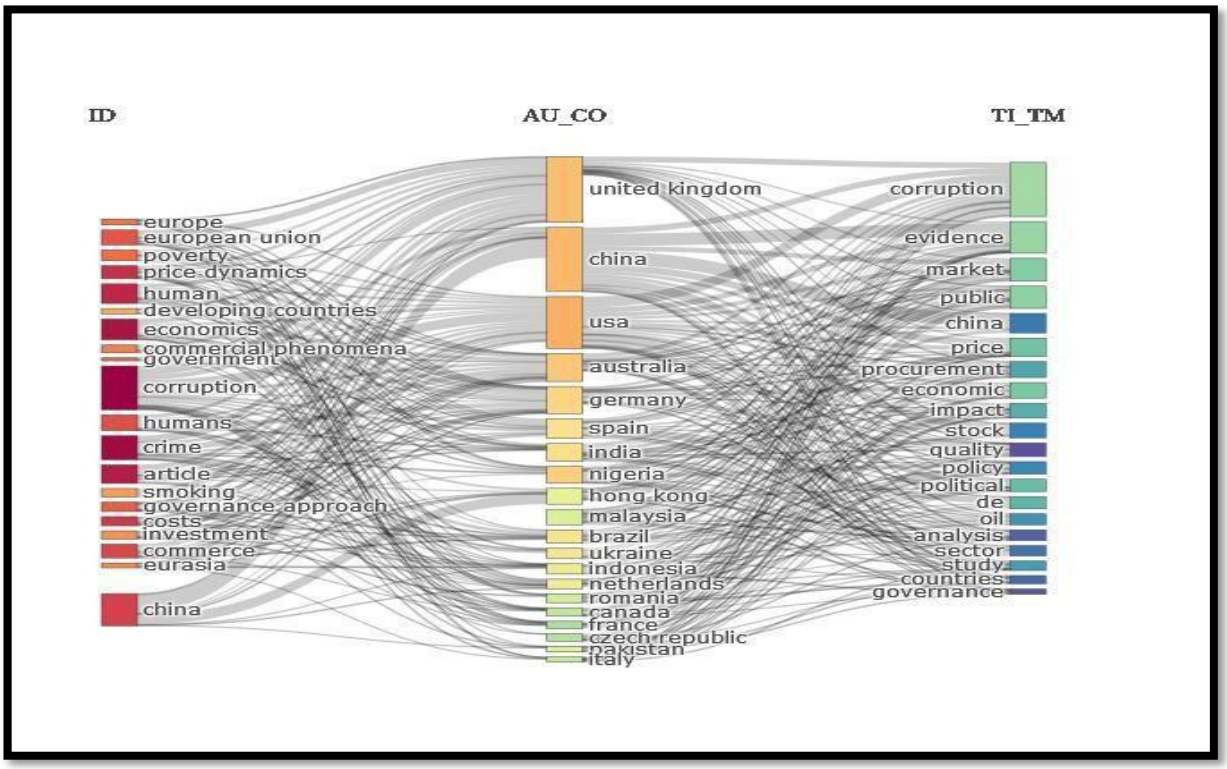


Figure 12: Three Field Plots

5. Conceptual Structure Analysis

Table 11
For Conceptual Structure

Node	Cluster	Betweenness	Closeness	PageRank
Environmental economics	1	48	0.007	0.011
Deforestation	1	0	0.005	0.007
Corruption	2	457.135	0.014	0.090
Price dynamics	2	43.543	0.0113	0.035
China	2	5.369	0.009	0.015
European union	2	4.896	0.010	0.017
Europe	2	46.001	0.010	0.025
Governance approach	2	18.949	0.01	0.019
Investment	2	13.158	0.009	0.016
Energy policy	2	7.921	0.009	0.015

Because conceptual structure is a key component of the bibliography, Table 11 represents the most significant part of this essay. To illustrate the conceptual structure of the framework, we used the term co-occurrence. Using a conceptual structure map produced by dimensionality reduction, we conducted a multiple correspondence analysis (MCA) on the keywords (Demiroz & Haase, 2019). Different types of mapping can be shaped using the conceptual framework:

5.1 Factorial Method

Because it gives us word mapping, Topic dendrograms, and the majority of contributing papers, the conceptual structure study's most significant section is used in this particular factorial technique. Figures D, E, and F display a factorial method. The distribution of the facts along the dimensions and their relative positions are used to interpret the results; the more closely the words are depicted on the map, the more similar is their distribution (Aria & Cuccurullo, 2017).

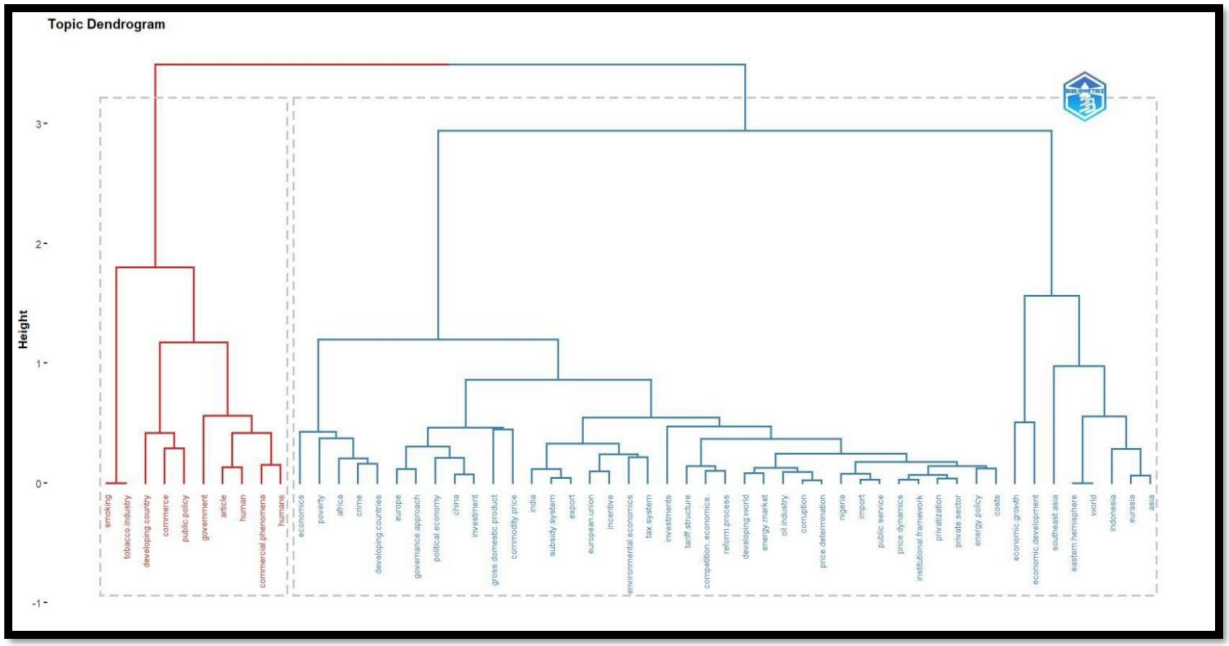
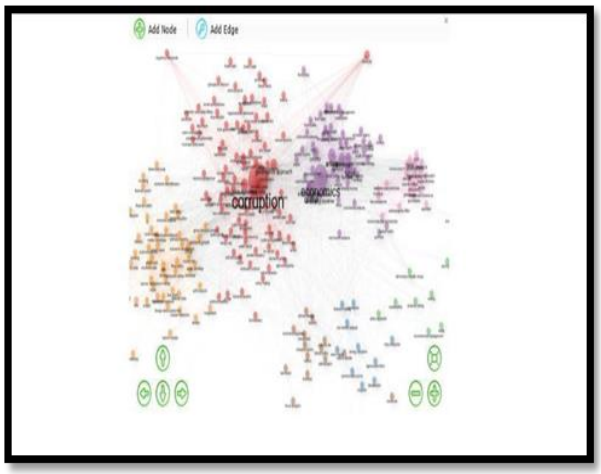
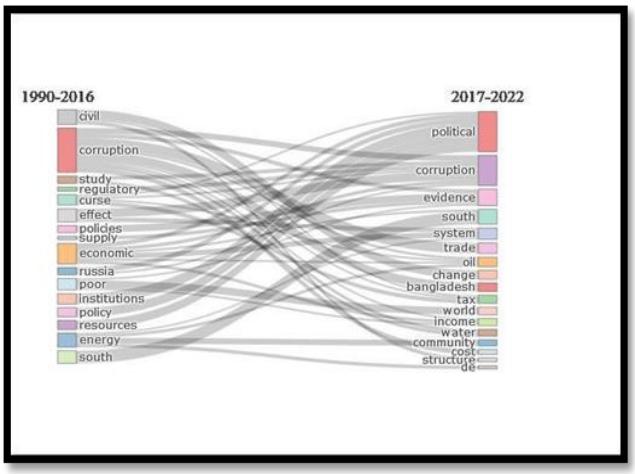
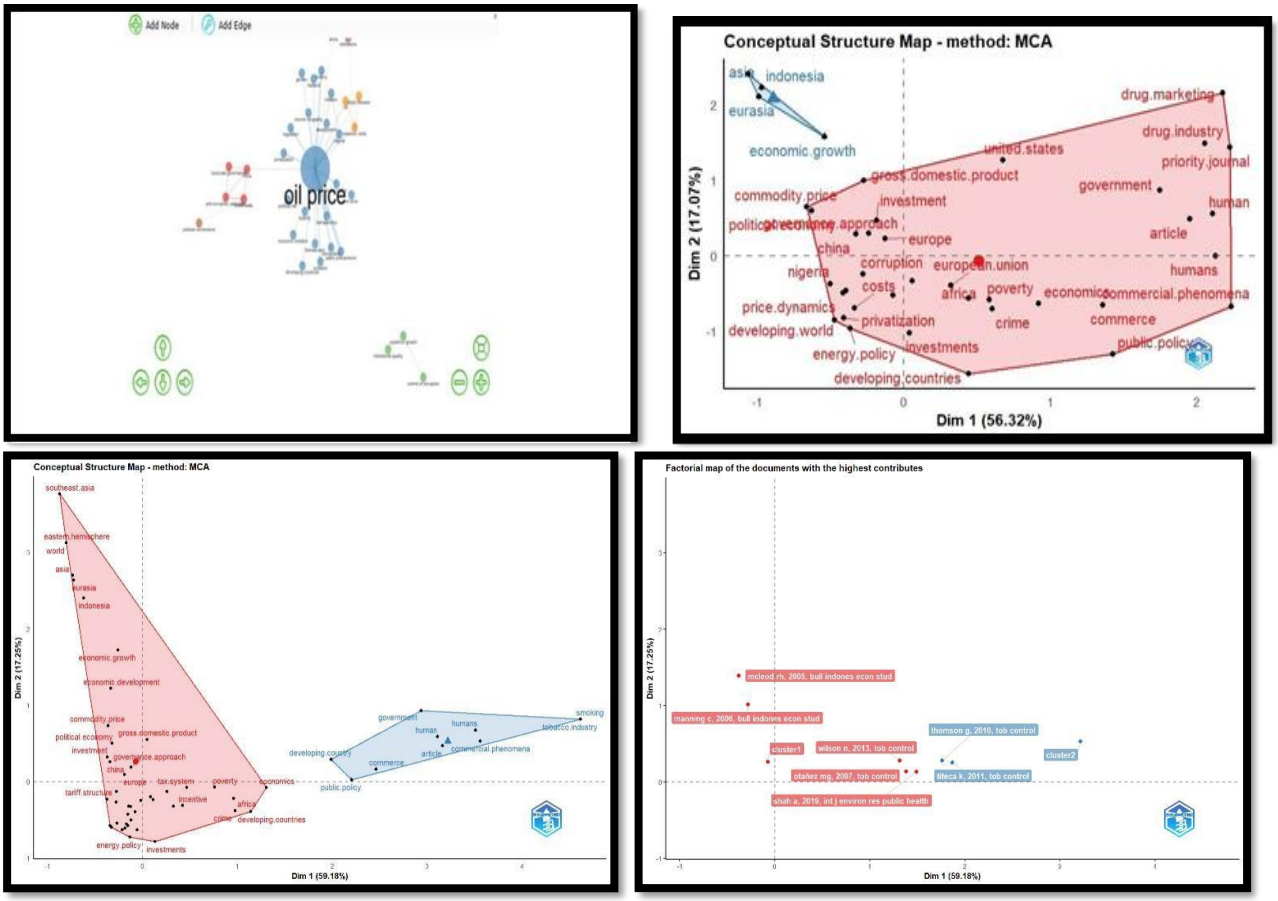


Figure 13: Conceptual Structure (Topic Dendrogram)







5.2. Intellectual Structure Analysis

Table 12
Intellectual Structure

Node	Cluster	Betweenness	Closeness	Pagerank
Mauro p. 1995	1	665.323	0.0203	0.232
Rose-Ackerman s. 1999	1	0.123	0.056	0.126
Klitgaard r. 1988	1	0.453	0.081	0.123
Treisman d. 2000	1	27.786	0.068	0.252
Ades a. 1999	1	6.432	0.004	0.039
Rose-Ackerman s. 1978	1	0.786	0.012	0.021
Becker g.s. 1968	1	2.012	0.076	0.111
Brunetti a. 2003	1	0.555	0.312	0.041
Fisman r. 2002	1	0.897	0.043	0.053
Leff n. 1964	1	0.676	0.024	0.065

Table 12 shows different authors in the intellectual structure where cluster, Betweenness, closeness, and page rank tell about the contribution of authors in oil price shocks on corruption. The intellectual structure also has two kinds one is co-citation and the other one is historiography both we are shown in the below mentioned figures A and B.Fig A represents degree plot graph of intellectual structure which shows negative slope curve and fig B shows connectivity mapping where different authors co citation mapping is given.

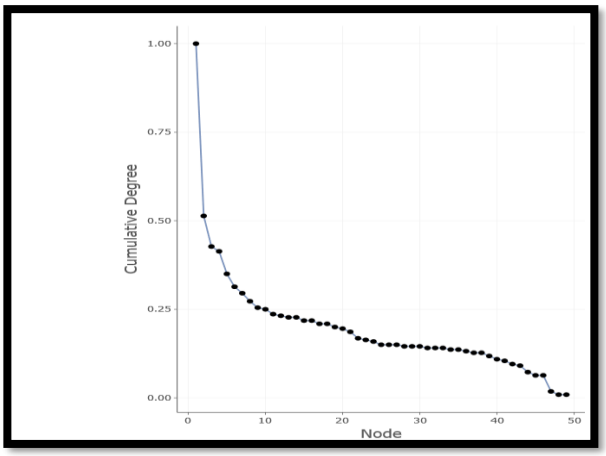


Figure 14(A): Intellectual Structure With Cumulative Degree

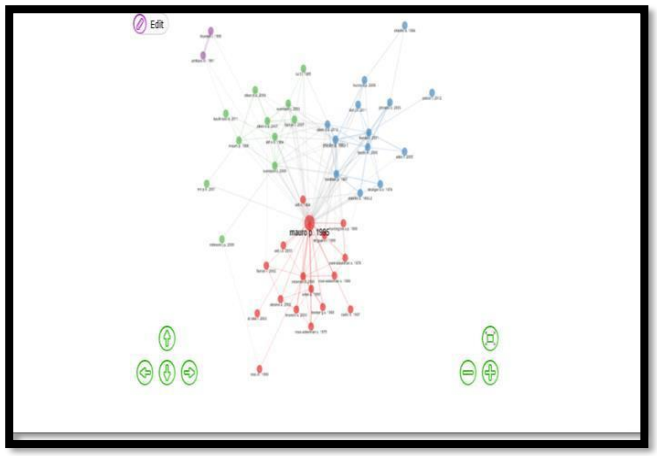


Figure 14(A): Intellectual Structure With Cumulative Degree

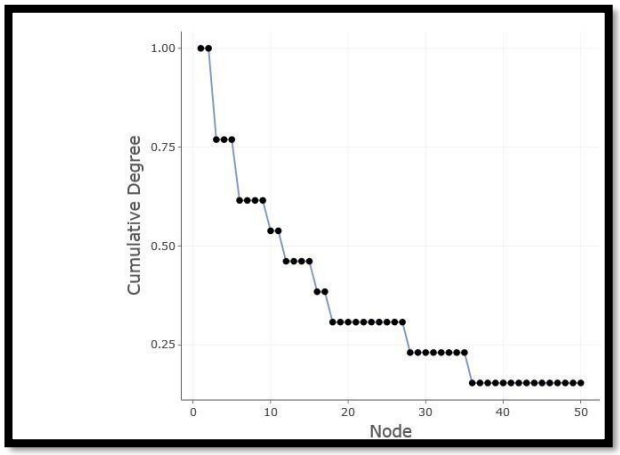


Figure 14(C): Intellectual Structure With Cumulative Degree

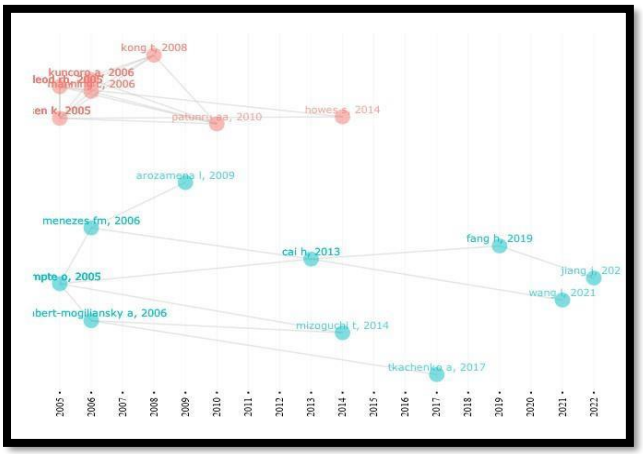


Figure 14(D): Intellectual Structure With Cumulative Degree

5.3. Social Structure Collaboration Network

Table 13
Social Structure

Node	Cluster	Betweenness	Closeness	Pagerank
Abaidoo r	1	1	0.1	0.031
Agyapong ea	1	0	0.122	0.098
Agyapong ek	1	0	0.422	0.122
Bjorvatn k	2	0	12	0.451
SÃ¸reide t	2	0	12	0.09
Li m	3	0	0.54	0.011
Liu d	3	0	0.09	0.023
Peng h	3	0		0.011
Zhang l	3	0	0.453	0.067
Bakely t	4	0	0.1	0.077

Table 14 represents social structure mapping in which we take node where Abaidoo r were most important author followed by 1 cluster. Furthermore, bakely t has significant cluster 4. Figure 15 shows connectivity of different authors with their published documents.

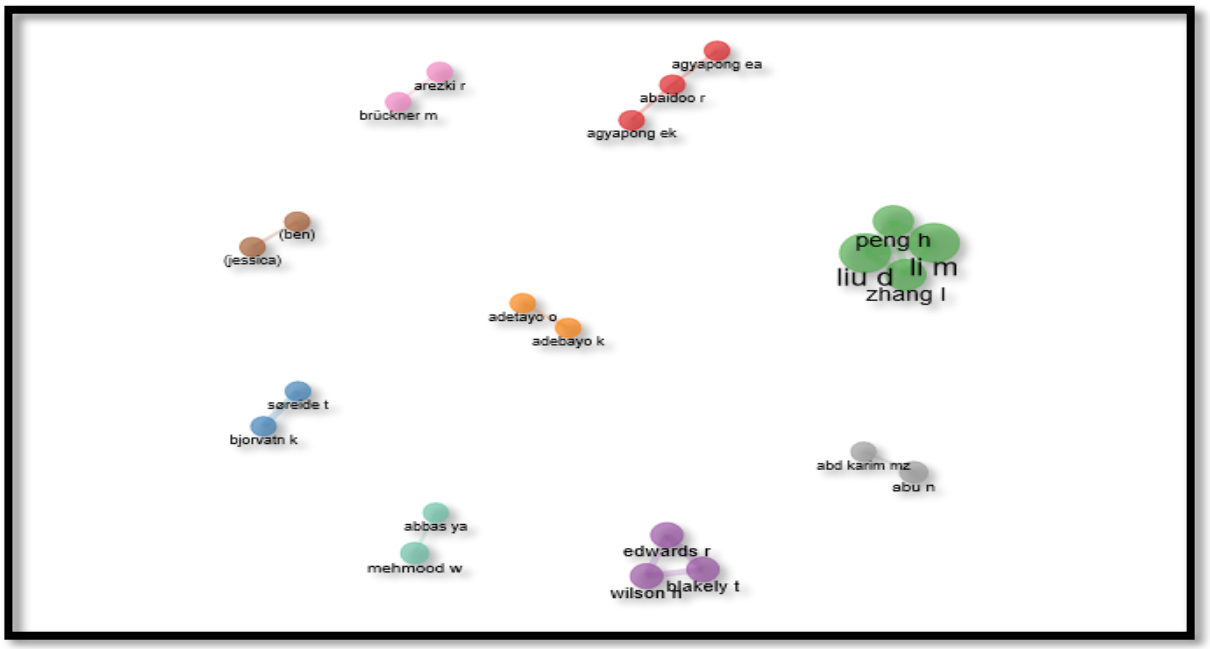


Figure 15: Social Structure Collaboration Network

5.4. Collaboration World Map

Table 14
World Map

From	To	Frequency
USA	CHINA	10
USA	UNITED KINGDOM	7
CHINA	HONG KONG	6
AUSTRALIA	INDONESIA	4
USA	AUSTRALIA	4
USA	CANADA	4
NIGERIA	MALAYSIA	3
USA	SPAIN	3

Table 14 shows second kind of social structure collaboration world map in which we take data from biblioshiny where we have a lot of countries data and its frequencies but we take most important collaboration between countries first of all we take USA & China followed by frequency of 10 both countries have many collaborations world mapping network then USA & UK also have strong frequency with 7, China and Hong kong have 6 frequencies. Moreover, in Figure 16 we take graph from R studio and Vosviewer both shows the connectivity level between the countries.

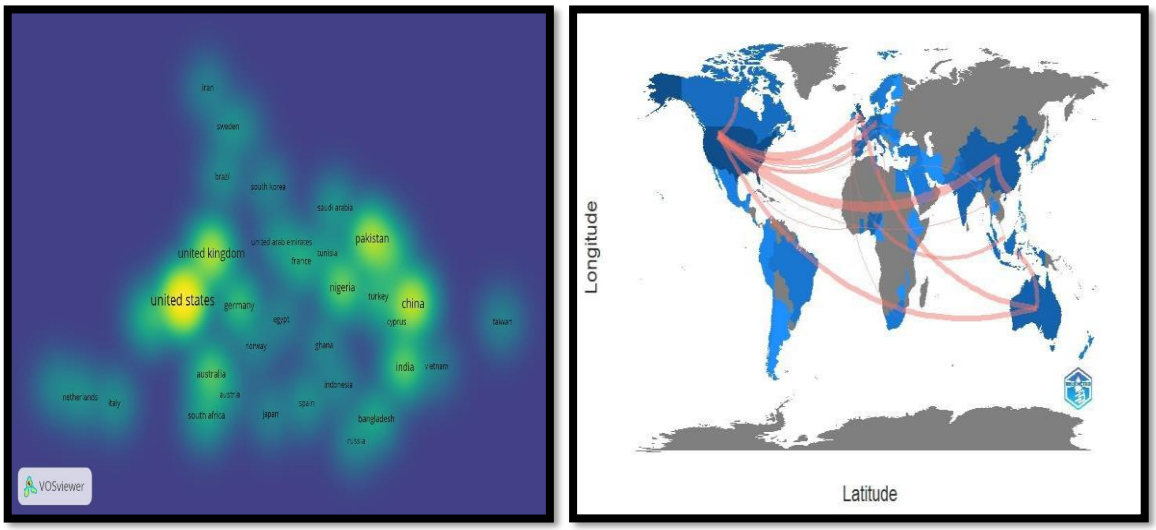


Figure 16(A): Collaboration World Map Figure 16(B): Collaboration World Map

5.5. Findings & Important Research Queries

The present section emphasizes the RQs' findings and offers ideas for additional research to fill in research gaps in the body of existing literature. Information regarding publishing trends on how oil price shocks drive corruption is provided by the descriptive analysis and conceptual analysis. (Research Query 1). Energy policy has published most research articles. (Research Query 2), who examined "how oil prices shocks drive corruption" in the world. An important portion of studies has analyzed the ability of oil price actions which produce corruption in every unstable economy such as the Pakistan, India, and Srilanka etc. Additionally, our study shows that a small number of papers have formed current research. (Research Query 3), In our research LI M has authored the most cited research publication, followed by LIU D and DYARTO R and Understanding the rationale behind important research projects is made easier by keyword analysis. (Research Query 4), oil price are the most repeated keywords in the existing literature. Furthermore, corruption is most important word which show maximum tree map. (Research Query 5) The highest level of scientific collaboration is between the United States, the United Kingdom, France, and Hong Kong. (Research Query 6). We can better grasp the intellectual structure of the body of literature by using co-citation (co-citation and content analysis) and co-occurrence networks. (Research Query 7) Additionally, we use content analysis to spot different key groups in our publications. (Research Query 8) To attract more academic attention and get around the drawbacks of the current theoretical and empirical framework, more research is required.

6. Future Direction and Policy Implication

We may infer that a number of reasons hamper the current research and that future research can address these limitations after a full systematic and bibliometric analysis. The current study's scope and reach were restricted to its constituent parts and methods. First, we only included the one Scopus database in our collection of literature, excluding Dimensions, Web Science, and other pertinent databases. We predict that the inclusion of new databases will strengthen the results of upcoming research. Second, we didn't include publications in the languages of the Asia-Pacific region and some other African regions. By adding studies conducted in different languages, we would encourage academics to broaden their horizons. This would also enable us to develop local policy frameworks. Third, to get beyond the constraints in the existing literature, future research must focus on creating a solid theoretical framework .Fourth, as we all know that oil production is the key factor for growth in modern era, but with the variation in price of oil and its impact that create corruption in mostly underdeveloped countries because they have weak

economic policies so through this study and this bibliometric technique still there is a need to investigate further that why in under developed countries and some developed countries have not control on corruption through change in oil price.

6.1. Conclusions

Oil price shocks decide some countries' economic situation where maximum products are dependent on oil import because they don't have enough resources to fulfill their requirements on their own besides this political instability and huge uncertainty in major sectors of the country create corruption and this evil becomes the main hurdle to the country's growth. Our analysis, which was based on the total number of published publications about oil price shocks as a cause of corruption that were found in the Scopus database, is now complete. The VOS viewer program was used to analyze the data and construct bibliometric maps of academic papers on oil price shocks. VOS viewer can be used to conduct a variety of research, including those involving authors and documents, network collaboration, co-occurrence, correlations, and journal citation. A total of 806 research articles were published between 1990 and 2022.

Moreover, the results of oil price shocks are establishing positivity both in the long and short run of the economy. The findings also show that short-term adjustments in oil price shocks which drive corruption create a pathetic situation in the country. Hence, it is advised that the current administration should be powerful enough to improve the political situation to end corruption and impeach anyone involved in bribery, blackmailing, theft, or any others ham activity, regardless of their affiliation with a particular religious group or tribe. People are generally forced to trust in honesty to maintain the political field, therefore stable economies with strong administration and high educational levels refrain from corruption. Gaining control of excellent governance is also urgently needed. The duties of a government official should be performed with honesty, sincerity, dedication, responsibility, fiscal duty, openness and respect for the law.

Author contribution

Hammad Ashfa: introduction section, Initial draft preparation, and original draft
Mahwish Zafar: interpretation of findings original draft and supervision
Bilal Zahid: Literature review and methodology, Analysis and explanation results
Hafiz M. Rizwan Khan: conceptualization framework

Conflict of Interests/Disclosures

The authors declared no potential conflicts of interest w.r.t the research, authorship and/or publication of this article.

References

Abu, N., David, J., Sakanko, M. A., & Amaechi, B.-O. O. (2022). Oil price and public expenditure relationship in Nigeria: Does the level of corruption matter? *Economic Studies, 31*(3).

Ahmad, F. (2013). The effect of oil prices on unemployment: Evidence from Pakistan. *Business and Economics research journal, 4*(1), 43.

Alexeev, M., & Zakharov, N. (2022). Who profits from windfalls in oil tax revenue? Inequality, protests, and the role of corruption. *Journal of Economic Behavior & Organization, 197*, 472-492. doi:https://doi.org/10.1016/j.jebo.2022.03.010

Ali, H. E., & Solarin, S. A. (2020). Military spending, corruption, and the welfare consequences. *Defence and peace economics, 31*(6), 677-691. doi:https://doi.org/10.1080/10242694.2019.1567181

Ali, S., ur Rahman, S., & Anser, M. K. (2020). Stem Cell Tourism and International Trade of Unapproved Stem Cell Interventions. *Annals of Social Sciences and Perspective, 1*(2), 79-90.

Amzad Hossain, M., Hassan, M., Mehedi, I. M., Rahman, M., Zahura, F. T., & Sheikh, M. R. I. (2022). Output fluctuations minimization of wind integrated hybrid power system using electronic coordinated control of governor and blade. *Journal of Renewable and Sustainable Energy, 14*(2). doi:https://doi.org/10.1063/5.0080743

Andersen, J. J., Johannesen, N., Lassen, D. D., & Paltseva, E. (2017). Petro rents, political institutions, and hidden wealth: Evidence from offshore bank accounts. *Journal of the European Economic Association, 15*(4), 818-860. doi:https://doi.org/10.1093/jeea/jvw019

Aria, M., & Cuccurullo, C. (2017). bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of informetrics, 11*(4), 959-975. doi:bibliometrix: An R-tool for comprehensive science mapping analysis

Asher, S., & Novosad, P. (2023). Rent-seeking and criminal politicians: Evidence from mining booms. *Review of Economics and Statistics, 105*(1), 20-39. doi:https://doi.org/10.1162/rest_a_01064

Aslaksen, S. (2007). Corruption and oil: Evidence from panel data. *Unpublished Manuscript*.

Awan, A., Rahman, S. U., Ali, M., & Zafar, M. (2023). Institutional Performance and Tourism Arrival Nexus in BRICS Countries: Evidence from Nonlinear ARDL Cointegration Approach. *iRASD Journal of Economics, 5*(1), 127-139. doi:https://doi.org/10.52131/joe.2023.0501.0116

Bai, J., Jayachandran, S., Malesky, E. J., & Olken, B. A. (2013). *Does economic growth reduce corruption? Theory and evidence from Vietnam*. Retrieved from

Bhatti, M. A., Chaudhry, I. S., & Bashir, F. (2021). Financial globalization, output gap and foreign output gap on inflation: Evidenced from developing economies. *Journal of Accounting and Finance in Emerging Economies, 7*(2), 419-433. doi:https://doi.org/10.26710/jafee.v7i2.1773

Bilal, S. M., Shah, S. Z. A., Rahman, S. U., & Jehangir, F. N. (2022). Impact of Resource Rents and Institutional Quality on Economic Growth: An Approach of Panel Threshold Analysis. *Competitive Education Research Journal, 3*(2), 195-208.

Börner, K., Chen, C., & Boyack, K. W. (2003). Visualizing knowledge domains. *Annual review of information science and technology, 37*(1), 179-255.

Burnham, J. F. (2006). Scopus database: a review. *Biomedical digital libraries, 3*(1), 1-8. doi:https://doi.org/10.1186/1742-5581-3-1

Caselli, F., & Michaels, G. (2013). Do oil windfalls improve living standards? Evidence from Brazil. *American Economic Journal: Applied Economics, 5*(1), 208-238. doi:https://doi.org/10.1257/app.5.1.208

Chaudhary, S., Nasir, N., ur Rahman, S., & Sheikh, S. M. (2023). Impact of Work Load and Stress in Call Center Employees: Evidence from Call Center Employees. *Pakistan Journal of Humanities and Social Sciences, 11*(1), 160-171. doi:https://doi.org/10.52131/pjhss.2023.1101.0338

Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E., & Herrera, F. (2011). Science mapping software tools: Review, analysis, and cooperative study among tools. *Journal of the American Society for information Science and Technology, 62*(7), 1382-1402. doi:https://doi.org/10.1002/asi.21525

Dawood, M., ur Rehman, S., Majeed, U., & Idress, S. (2023). Contribution the Effect of Corporate Governance on Firm Performance in Pakistan. *Review of Education, Administration & Law, 6*(1), 51-62. doi:https://doi.org/10.47067/real.v6i1.304

Demiroz, F., & Haase, T. W. (2019). The concept of resilience: a bibliometric analysis of the emergency and disaster management literature. *Local government studies, 45*(3), 308-327. doi:https://doi.org/10.1080/03003930.2018.1541796

Donwa, P., Mgbame, C., & Julius, O. (2015). Corruption in the oil and gas industry: Implication for economic growth. *European Scientific Journal, 11*(22).

Farzanegan, M. R. (2017). The impact of oil rents on military spending: Does corruption matter?

Hafiza, N. S., Manzoor, M., Fatima, K., Sheikh, S. M., Rahman, S. U., & Qureshi, G. K. (2022). MOTIVES OF CUSTOMER'S E-LOYALTY TOWARDS E-BANKING SERVICES: A STUDY IN PAKISTAN. *PalArch's Journal of Archaeology of Egypt/Egyptology, 19*(3), 1599-1620.

Hanif, S., Nawaz, A., Hussain, A., & Bhatti, M. A. (2022). Linking non renewable energy, renewable energy, globalization and CO2 emission under EKC hypothesis: evidence from ASEAN-6 countries through advance panel estimation. *Pakistan Journal of Humanities and Social Sciences, 10*(1), 391–402-391–402. doi:https://doi.org/10.52131/pjhss.2022.1001.0204

Hassan, H., Hussain, M., Hussain, S., Rizvi, S. G. A., Qureshi, G. K., Zaman, M. W. U., . . . Shahzadi, H. N. AN EXPLORATORY STUDY: HOW DOES RELIGION RELATE TO NON-PERFORMING LOANS IN THE CONTEXT OF COMMERCIAL BANKS OF PAKISTAN.

Ilyas, A., Banaras, A., Javaid, Z., & Rahman, S. U. (2023). Effect of Foreign Direct Investment and Trade Openness on the Poverty Alleviation in Burundi–Sub African Country: ARDL (Co-integration) Approach. *Pakistan Journal of Humanities and Social Sciences, 11*(1), 555-565. doi:https://doi.org/10.52131/pjhss.2023.1101.0373

Iyoko, E. (2020). Oil price shocks and their impact on capital expenditure in Nigeria. *Acta Universitatis Danubius. Œconomica, 16*(2), 227-238.

James, A., & Rivera, N. M. (2022). Oil, politics, and "corrupt bastards". *Journal of Environmental Economics and Management, 111*, 102599.

Kenayathulla, H. B., Ahmad, N. A., & Idris, A. R. (2019). Gaps between competence and importance of employability skills: evidence from Malaysia. *Higher Education Evaluation and Development, 13*(2), 97-112. doi:https://doi.org/10.1108/HEED-08-2019-0039

Komal, N., Mansoor, M. A., Mazhar, M., Sohail, M., Malik, Z., & Anis-ur-Rehman, M. (2023). Effect of (Sm, In) Doping on the Electrical and Thermal Properties of Sb2Te3 Microstructures. *ACS omega, 8*(11), 9797-9806. doi:https://doi.org/10.1021/acsomega.2c05859

Li, D., Bai, Y., Yu, P., Meo, M. S., Anees, A., & Rahman, S. U. (2022). Does institutional quality matter for environmental sustainability? *Frontiers in Environmental Science, 10*, 966762. doi:https://doi.org/10.3389/fenvs.2022.966762

Liu, Y., Sadiq, F., Ali, W., & Kumail, T. (2022). Does tourism development, energy consumption, trade openness and economic growth matters for ecological footprint: Testing the Environmental Kuznets Curve and pollution haven hypothesis for Pakistan. *Energy, 245*, 123208.

Madathil, J. C., Palaniyappa Shanmugam, V., & Thippillikat, A. (2022). Crude oil price and government effectiveness: The determinants of corruption in oil abundant states. *Journal of Public Affairs, 22*, e2767. doi:https://doi.org/10.1002/pa.2767

Mahmood, H. (2021). Oil prices, control of corruption, governance, and economic growth nexus in Saudi Arabia. *International Journal of Energy Economics and Policy*.

Mlaabdal, S., Chygryn, O., Kwilinski, A., Muzychuk, O., & Akimov, O. (2020). Economic Growth and Oil Industry Development: Assessment of the Interaction of National Economy Indicators.

Mongeon, P., & Paul-Hus, A. (2016). The journal coverage of Web of Science and Scopus: a comparative analysis. *Scientometrics, 106*, 213-228. doi:https://doi.org/10.1007/s11192-015-1765-5

Nik Adib, N. A., Ibrahim, M. I., Ab Rahman, A., Bakar, R. S., Yahaya, N. A., Hussin, S., & Wan Mansor, W. N. A. (2019). Perceived stress among caregivers of children with autism spectrum disorder: A state-wide study. *International journal of environmental research and public health, 16*(8), 1468. doi:https://doi.org/10.3390/ijerph16081468

Onakoya, A. B., & Folorunsho, I. I. (2015). Corruption and economic growth nexus: the Nigerian parody. *Yobe Journal of Economics, 2*(2), 177-192.

Paul, A. K., Sarkar, A. K., Rahman, A. B. S., & Khaleque, A. (2018). Twin core photonic crystal fiber plasmonic refractive index sensor. *IEEE Sensors Journal, 18*(14), 5761-5769. doi:https://doi.org/10.1109/JSEN.2018.2841035

Pleines, H., & Wöstheinrich, R. (2016). The international–domestic nexus in anti-corruption policy making: The case of Caspian oil and gas states. *Europe-Asia Studies, 68*(2), 291-311. doi:https://doi.org/10.1080/09668136.2015.1126232

Rahman, S. u., Chaudhry, I. S., Meo, M. S., Sheikh, S. M., & Idrees, S. (2022). Asymmetric effect of FDI and public expenditure on population health: New evidence from Pakistan based on non-linear ARDL. *Environmental Science and Pollution Research*, 1-16. doi:https://doi.org/10.1007/s11356-021-17525-z

Saleem, Z., Haseeb, A., Godman, B., Batool, N., Altaf, U., Ahsan, U., . . . Farrukh, M. J. (2022). Point prevalence survey of antimicrobial use during the COVID-19 pandemic among different hospitals in Pakistan: Findings and implications. *Antibiotics, 12*(1), 70. doi:https://doi.org/10.3390/antibiotics12010070

Shafique, M., Rahman, S., Khizar, S., & Zulfiqar, M. (2021). How does Poverty, Foreign Direct Investment, and Unemployment affect Economic Growth: Evidence from Pakistan cointegration ARDL Approach. *International Journal of Research in Economics and Commerce, 2*(1), 14-23.

Shahid, A. U., Ghaffar, M., Rahman, S. U., Ali, M., Baig, M. A., & Idrees, S. (2022). EXPLORING THE IMPACT OF TOTAL QUALITY MANAGEMENT MEDIATION BETWEEN GREEN SUPPLY CHAIN METHOD AND PERFORMANCE". *PalArch's Journal of Archaeology of Egypt/Egyptology, 19*(4), 1252-1270.

Shahid, C., Muhammed, G. A., Abbasi, I. A., Gurmani, M. T., & ur Rahman, S. (2022). Attitudes Of Undergraduates And Teachers Towards Evolving Autonomous Learning L2 In Higher Education. *Journal of Positive School Psychology, 6*(11), 527-544.

Shahzadi, H. N., Sheikh, S. M., Sadiq, A., & Rahman, S. U. (2023). Effect of Financial Development, Economic Growth on Environment Pollution: Evidence from G-7 based ARDL Cointegration Approach. *Pakistan Journal of Humanities and Social Sciences, 11*(1), 68–79-68–79. doi:https://doi.org/10.52131/pjhss.2023.1101.0330

Tancho, N., & Jermsittiparsert, K. (2020). THE RELATIONSHIP BETWEEN OIL PRICES AND THE REAL EFFECTIVE EXCHANGE RATE IN THAILAND. *Journal of Security & Sustainability Issues, 10*(2).

Usman, M., Rahman, S. U., Shafique, M. R., Sadiq, A., & Idrees, S. (2023). Renewable Energy, Trade and Economic Growth on Nitrous Oxide Emission in G-7 Countries Using Panel ARDL Approach. *Journal of Social Sciences Review, 3*(2), 131-143. doi:https://doi.org/10.54183/jssr.v3i2.219

Van Eck, N., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *scientometrics, 84*(2), 523-538. doi:https://doi.org/10.1007/s11192-009-0146-3

Van Eck, N. J., & Waltman, L. (2011). Text mining and visualization using VOSviewer. *arXiv preprint arXiv:1109.2058*. doi:https://doi.org/10.48550/arXiv.1109.2058

Zahra, A., Nasir, N., Rahman, S. U., & Idress, S. (2023). Impact of Exchange Rate, and Foreign Direct Investment on External Debt: Evidence from Pakistan Using ARDL Cointegration Approach. *IRASD Journal of Economics, 5*(1), 52-62. doi:https://doi.org/10.52131/joe.2023.0501.0110

Zhu, L., Fang, W., Rahman, S. U., & Khan, A. I. (2023). How solar-based renewable energy contributes to CO2 emissions abatement? Sustainable environment policy implications for solar industry. *Energy & Environment, 34*(2), 359-378. doi:https://doi.org/10.1177/0958305X211061886