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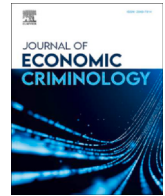
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Corruption in finance research: The state of art and future research agenda

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ABSTRACT

Corruption in finance is a relatively new topic which is gathering researcher's attention because of the increase in frauds and alike activities in the financial sector. The main aim of this article is to aid researchers to understand the overall trends, shifts and structure of corruption in finance research in one roof. The study uses bibliometric analysis and systematic literature review (SLR) to analyze corruption in finance research. The major findings of this study show that research activities in this domain has been growing substantially and major portion of publications are coming from the United States and United Kingdom. The field consists of five themes of research which are corruption in public finance, corruption in financial markets and financing activities, corruption in corporate governance, corruption in international business and corruption in financial technologies and terrorism. To the best of author's knowledge this is the first study to synthesize the corruption in finance research using integrated SLR and bibliometric approach. Finally, the study also suggests potential research directions which researchers can explore in the future studies and aid in advancement of the field.

1. Introduction

As described by Transparency International (TI), corruption refers to the abuse of (public) powers for personal benefits (Vargas-Hernández, 2009). Corruption happens worldwide, despite legislative and cultural barriers. The effects of organized crime, corruption and terrorism can be quite dangerous for the financial sector. Studies evidently establish that the financial sector is fundamental in shaping the growth of any society (Goldsmith, 1969; Levine, 2003; Rajan and Zingales, 1998). Corruption is one of the major barriers in the financial sector against rule of laws and human rights. It has become an issue of concern for the whole financial sector including financial markets, international finances, public finance, corporate finance, and personal finance as well. Corruption is the most persistent barrier to both economic growth and social development of any nation (Keefer and Knack, 1997; Li et al., 2000; MÈon and Sekkat, 2005; Mo, 2001). Moreover, corruption is related to the development of organized criminal activities (Hardouin,

2009). Corruption is extremely deleterious to certain countries, especially those which shows lower level of democracy, reducing economic growth and income distribution quite considerably (Gyimah-Brempong, 2002). Corruption in the financial ecosystem disturbs competition, hampers both local and foreign investments and diminishes the rate of growth. Such activities create impediments to the operations and growth of other businesses working under the rule of law. Organized crime and corruption have a crowding out effect. The situation is more alarming in emerging economy context because of job uncertainty, distrust and dissatisfaction is widely noticed between the staff and the employer (Aziz et al., 2007; Lim et al., 2023). Corruption among financial institutions results in weakening the credibility of the institutes and the market inside and out of country (Venard and Hanafi, 2008). It leads in decrease people's confidence on the institute and could make the firm decline. Corruption being a multidisciplinary subject is explored by scholars from various fields including the academic researchers of finance. The beginning of research in this domain could be

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traced in 1980 s but the academic research gained momentum from 1990 s as evident is Fig. 1. As the economic and financial ecosystem engaged with globalization, information technology (Lim, 2022), and the internet, the interest of academic researchers aligned with it and a considerable pool of literature accumulated thereafter. However, research is scattered, with papers discussing various topics in different contexts. Also, there appears to date to be no study providing an umbrella discussion or review to the issue of corruption in finance. There are only a handful of literature reviews concerning this domain which discusses some specific contexts. For instance, *Khelil et al. (2021)* provides a review of the empirical evidences on economic effects of political connections and political corruption on auditor behavior in the accounting and finance field. *Schnatterly et al. (2018)* reviews the literature and provides insights upon the antecedents of CEO wrongdoing. This makes it opportune to construct a critical review on the domain as a whole and this study aims to provide a comprehensive and in-depth review of the current state of corruption in finance research. As mentioned by *Lim (2022)* that is equally important to highlight a convincing case for addressing the existing gap. A review on corruption in finance shall help identify the critical trends and research constituents of the field. It shall also provide a comprehensive understanding of the intellectual structure in the field. This shall provide a one stop solution overview to the scholars of the field. Along with providing insights about the major players of the field the study also details about the various *themes* of research under corruption in finance domain. Also, the assessment of topic evolution and trending topics assisted in formulation of various endeavors of future research which will guide the scholars of the field and help in advancement of the corruption in finance research. Using an integrated approach of systematic literature review and bibliometric analysis, this paper aims to achieve the following objectives: Fig. 2.

- (1) Identifying top research constituents in corruption in finance research in terms of journals, authors and countries.
- (2) Mapping co-authorship relations and collaboration status among authors and countries.
- (3) Recording major influential articles in the corruption in finance research.
- (4) Exploring the thematic structure of research in corruption in finance.
- (5) Identifying major topics of research and charting the evolution of the field of corruption in finance research.
- (6) Providing hot topics and developing directions for future research.

With the above-mentioned motivations, this paper provides a comprehensive and umbrella overview of research in the corruption of finance field. Following *Mukherjee et al. (2022)*, this study accomplishes all five elements by which bibliometric research can lead to the

advancement of the theory in the first. First, the study provides objective discovery of knowledge clusters. Second, it tracks the evolution of the field by tracking the evolution of knowledge clusters. Third, it describes the networks in the field of research and maps the social structures helping in the development of the field which is fourth. Firth, it identifies the critical gaps in the literature and suggests future avenues of research. Thus, this study shall contribute to the theoretical advancement of the corruption in finance research.

The next section (Section 2) of the article describes the methodology opted in this study. Followed by it are the results of major research constituents, their trends and social networks in Section 3. Next, Section 4 presents the findings of discussion of the thematic structure and topic evolution followed by future research directions in Section 5.

2. Methodology

2.1. Corpus retrieval

A review should provide a holistic summary of the existing state of literature which is achieved and surrounded into a proper synthesis of the literature (*Kraus et al., 2022*). This begins with the development of a comprehensive search string for data retrieval. Through a detailed literature review and following earlier similar works like *Bahoo et al. (2019)*, corruption in terms of finance could be ascertained as a reflection of terms like bribery, fraud, financial crime, abuse, falsification, favoritism, manipulation, misrepresentation etc. The scope of this study includes two streams, i.e., corruption and finance. Thus, our search string has two parts. First, are the similar or synonyms of corruption in the field of finance and second is finance. The search string thus formed is ((Corruption OR bribe OR bribery OR abuse OR crime OR criminal OR degradation OR extortion OR falsification OR fraud OR graft OR manipulating OR manipulation OR misconduct OR misinterpretation OR wrongdoing) AND (finance)).

The study uses the Scopus database to retrieve the relevant corpus for corruption in finance research. With the aforementioned search string, Scopus initially provided 4806 results. The results were filtered using Scopus filters of subject area of economics, econometrics and finance. The filter to subject areas was important to ensure results to fit to the scope of the study, i.e. corruption in finance. The results had many publications relating to the subject areas of computer science, medicine, engineering, environmental science, arts and humanities etc. Therefore, the filter for subject area was kept to remove all studies not related to the scope of the study. This resulted to 921 articles reducing the initial corpus size substantially. Next, to assure quality of documents in the review, conference papers, editorials, erratum, conference reviews, retracted papers, notes, short surveys, and book chapters were excluded. All these documents do not go through proper peer-review process, thus ensuring the quality of documents only article and reviews

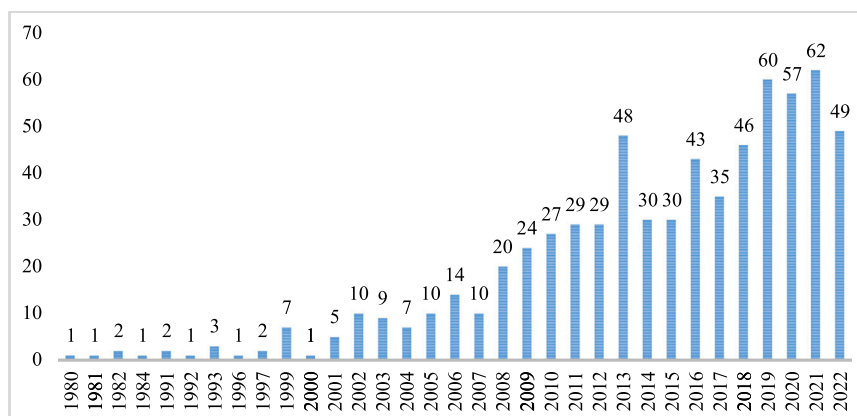


Fig. 1. Year-Wise publication, this figure presents the trend of year-wise publication on the topic corruption in finance.

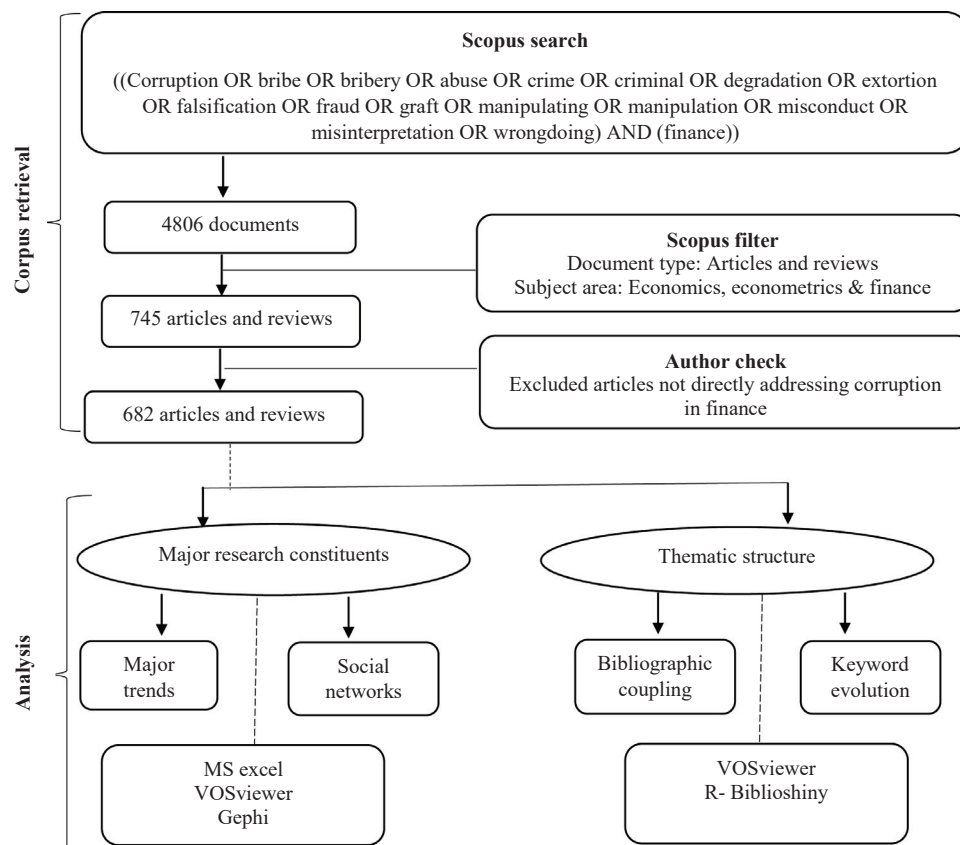


Fig. 2. Analytical structure of the article.

were retained for this study. This left us with 719 documents. Further, authors manually checked the title and abstract of the retrieved documents to establish the relevance of the article with the objective and theme of this study. This finally constructed a set of 682 documents for further analysis.

2.2. Method

In recent years bibliometrics have shown up as a popular and legitimate method of literature review consisting large corpus of literature with applications in a wide variety of scientific fields (Ramos-Rodríguez and Ruiz-Navarro, 2004; Ellegaard and Wallin, 2015; Donthu et al., 2021a; Long et al., 2022; Goodell et al., 2023; Singh et al., 2023; Varma et al., 2021). While handling the large size of bibliographic data, the method enables to minimize any potential bias (Donthu et al., 2021b). The method assists the observation of longitudinal descriptions of the extant literature (Donthu et al., 2021b). It further facilitates to find out the intellectual structure and emerging themes (Kumar et al., 2022a, 2022b; Tomar et al., 2021). Among the two parts of bibliometric method (Cobo et al., 2011), *performance analysis* deals with the performance of various research constituents in terms of their contribution in the field and thus fulfils the objective of identifying top research constituents and their trends in the field of study. Science mapping deals with citations, co-authorships and co-words in the publications and maps the network within the corpus using bibliometric tools like bibliographic coupling, co-citation, co-authorships, keyword co-occurrence etc.

Along with performance analysis, this study uses *bibliographic coupling* analysis (Donthu et al., 2021a) to explore the intellectual structure of corruption in finance research. Bibliographic coupling deals with the citations of the documents and assumes that if two documents cite one or more common literature they form bibliographic couples (Kessler,

1963). The higher the number of shared literatures, the higher will be the similarity between the two documents (Kessler, 1963; Weinberg, 1974). There is enough literature from variety of disciplines opting bibliographic coupling to explore the thematic structure of a topic and form clusters. Some examples in the field of management using bibliometric method to explore trends and intellectual structure of extant literature are (Vogel and Güttel, 2013; Merigó and Yang, 2017; Sureka et al., 2021; Tomar et al., 2021; Sigala et al., 2021). Thus, grounded on the citations, bibliographic coupling is used to identify various research themes in corruption in finance research.

Further, the study uses *keyword co-occurrence* analysis to explore the prominent topics and the emerging trends in the area. Author keywords are often important to the authors and they use them to express the central theme of the article (Pesta et al., 2018; Zou et al., 2018). Keyword co-occurrence analysis assumes that if two keywords appear together in more than one document, the documents tend to share some intellectual relationship (Callon et al., 1983; Castriotta et al., 2019). Thus, this article explores author keywords and their co-occurrences to understand the field of corruption in finance.

VOSviewer developed by Van Eck and Waltman in 2010 has two core functions, i.e., VOS mapping and VOS clustering. The software was used to construct the bibliometric/co-authorship networks among authors and countries. However, the visualization of the networks was done on Gephi because of its excellent filtering functions which helps to make the network cleaner and more readable. The bibliographic coupling clusters were also constructed in VOSviewer using the Newman and Girvan (2004) algorithm. The clustering is based on the modularity function introduced by Newman and Girvan (2004). For the keyword analysis, the study uses R bibliometrix or biblioshiny software package (Arria and Cuccurullo, 2017) as unlike other software, biblioshiny offers a functional, informative and comprehensible graphical representation of topic evolution.

Table 1
Major Publishing journals in corruption in finance.

Journal	T-P	ABS	ABDC	IF
Journal of Financial Crime	46	-	B	-
Journal of Money Laundering Control	40	-	C	-
Journal of Business Ethics	12	3	A	6.331
Managerial Finance	10	1	B	-
World Development	10	3	A	6.678
Journal of Financial Economics	8	4*	A*	6.988
The Journal of Finance	8	4*	A*	7.915
Mediterranean Journal of Social Sciences	8	-	-	-
European Journal of Political Economy	8	2	A	2.343
Ecological Economics	7	3	A	6.536
Economic Research- Ekonomska Istrazivanja	6	-	-	3.08
Economics Letters	6	3	A	1.469
Journal of Advanced Research in Law and Economics	5	-	-	-
Journal of Public Economics	5	3	A*	8.262
International Journal of Electronic Finance	5	3	C	-

Notes: TP = total publications, ABS = Association of Business School rating, ABDC = Australian Business Dean Council, IF = impact factor.

3. Major research constituents: trends and social networks

3.1. Journals

Table 1 presents the list of journals that publish most articles in the corruption in finance field. As the table shows, the *Journal of Financial Crime* is highest publishing journal in the field which has contributed 46 articles on the topic followed by the *Journal of Money Laundering Control*. Other prominent sources include the *Journal of Business Ethics*, *Managerial Finance* and *World Development*. The table also presents the metrics of journal quality like the Association of Business Schools' Academic Journal Guide (AJG) rating, Australian Business Deans Council (ABDC) ranking and impact factors of the journals. Note that all the highly publishing journals in the field acquire higher ratings and impact factor. The higher publications by such high-quality sources is an indication of the prominence of the corruption in finance as a research topic among both academia and industry. Also, the multiple subject categories to which the journals belong shows the multi-disciplinary nature of corruption in finance topic.

3.2. Authors and countries

Looking among the scholars in the field of corruption in finance research, Table 2 presents the most prolific authors publishing in the field. The most prolific author in the field is Douglas Cumming who has

Table 2
Most prolific scholars publishing on corruption in finance.

Author	Affiliation	Total publications	Total citations	Cites per publication	Link Strength
Cumming D.	Florida Atlantic University	12	477	39.75	25
Johan S.	Florida Atlantic University	6	313	44.71	12
Teichmann F.M.J.	Teichmann International AG	4	18	4.50	1
Demirgüç-Kunt A.	World Bank	3	793	264.33	6
Durana P.	University of Zilina	3	54	18.00	11
Hanousek J.	Charles University	3	12	4.00	6
Hou W.	University of Edinburgh	3	111	37.00	7
Jabbar S.F.A.	Universiti Kebangsaan Malaysia	3	10	3.33	0
Ma S.	Guangzhou University	3	17	5.67	6
Mcgee R.W.	Fayetteville State University	3	19	6.33	3
Ross A.M.	Florida Atlantic University	3	19	6.33	3
Valaskova K.	University of Zilina	3	139	46.33	11
Zhang L.	Macquarie University	3	50	16.67	7
Ayyagari M.	George Washington University	2	557	278.5	4
Maksimovic V.	University of Maryland	2	557	278.5	4

Note: Link strength represents the number of co-authorship links shared by the author with other authors publishing in the field corruption of finance.

published 12 articles and are cited 477 times. The author is followed by Sofia Johan and Fabian Teichmann. In terms of citations, Asli Demirgüç-Kunt has the highest total citations (793 cites) and 264.33 average cites per publication which is also highest among all scholars of the field. This makes her the most influence author in the area of corruption in finance research.

The co-authorship metrics of authors shows that Douglas Cumming has the highest link strength which shows that the author shares links with 12 other authors. Sofia Johan and Katarina Valaskova comes next with 12 and 11 links respectively. Fig. 3 shows the co-authorship network among authors of the field. As seen in the network, there are many major author groups actively working in the field. For example, author Cumming D and Johan S share strong co-authorship links along with Chen J, Hou W and Schweizer D.

Table 3 lists the countries most contributing to the corruption in finance research. As evident in the table authors from the United States contribute highest with 208 documents followed by United Kingdom with 105 documents. Note that authors from nearly 90 countries contribute to the corruption in finance research and the share of the United States and United Kingdom together accounts for nearly 45% of the total publications in the field. In terms of influence also United States and United Kingdom tops the list followed by Canada and Netherlands. This reflects the share and prominence of authors from both these countries in the corruption in finance research.

Fig. 4 presents the co-authorship network among countries contributing the corruption in finance research. Authors from United Kingdom, Canada, China and United States share strong co-authorship links. This group is even larger sharing ties with Germany, Netherlands, Ghana, India, Indonesia, Colombia etc. A strong link is evident between Germany and United Kingdom as well. The other group of collaborating countries includes Czech Republic, Poland, London, Malaysia, Iran, Nigeria etc.

3.3. Most cited articles

Table 4 lists the most influential works in the field of corruption in finance in terms of citations. The article Claessens et al. (2008), titled, "Political connections and preferential access to finance: The role of campaign contributions" is the most cited article in field with 742 citations. The article evaluated Brazilian firms and showed that firms that provided contributions to elected political parties had higher stock returns than firms that did not around the 1998 and 2002 elections. This article is followed by Shleifer and Wolfenzon (2002), titled, "Investor protection and equity markets" with 463 citations and Drazen and Eslava (2010), titled, "Formal versus informal finance: Evidence from China" with 300 citations. Shleifer and Wolfenzon (2002) presents insights on the relation between investor protection and corporate finance. Other most influential articles in the field

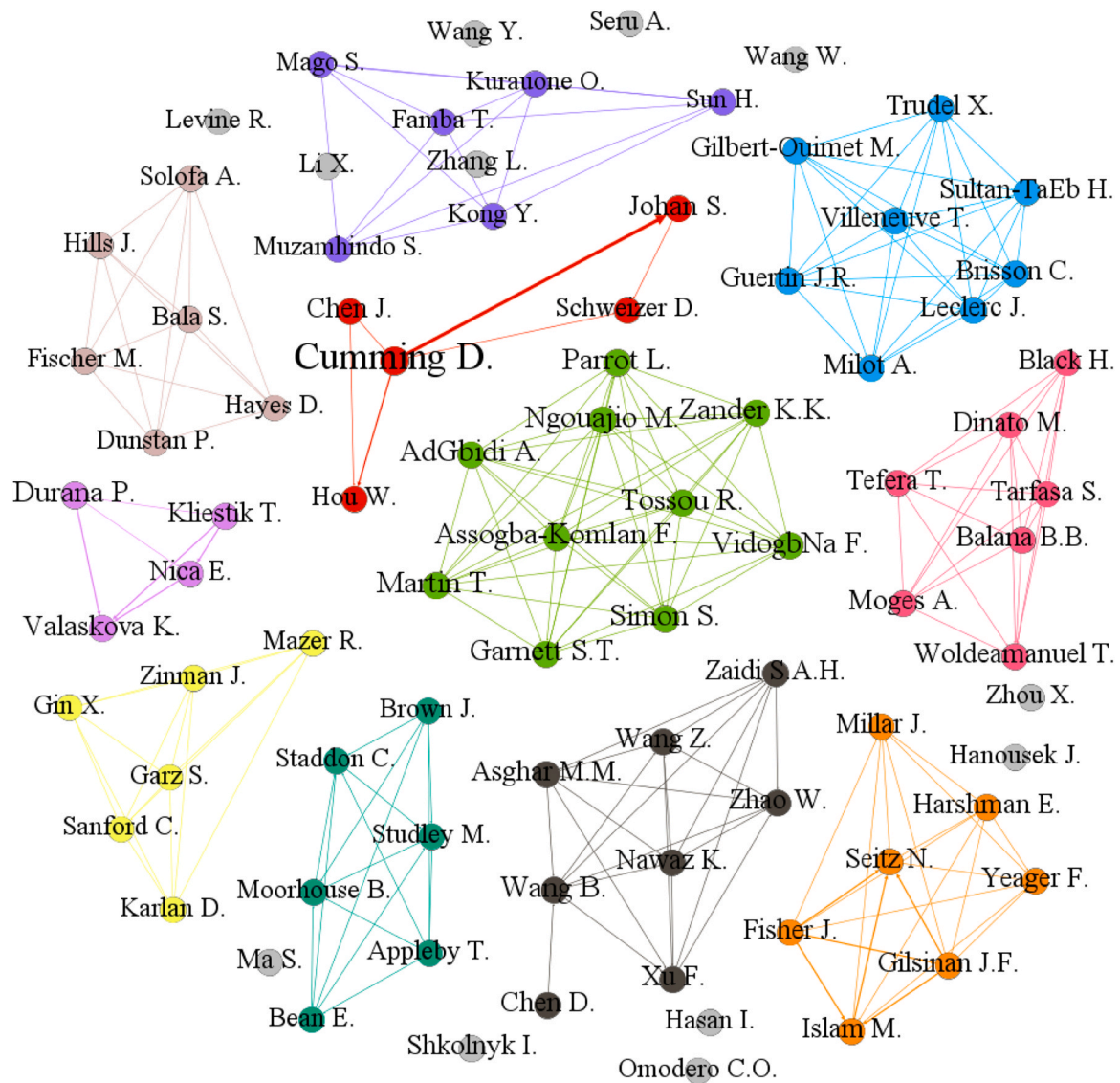


Fig. 3. Co-authorship network among authors publishing on the topic corruption in finance.

Table 3
Most prolific countries publishing on corruption in finance.

Country	Total publica- tions	Total cita- tions	Cites per Publica- tion	Link Streng- th
United States	208	8416	40.46	117
United Kingdom	105	2352	22.40	75
Canada	45	1900	42.22	45
China	42	913	21.74	35
Germany	35	463	13.23	35
Australia	34	926	27.24	24
France	31	433	13.97	25
South Africa	26	352	13.54	8
Italy	24	355	14.79	9
Netherlands	23	1425	61.96	22
India	20	229	11.45	5
Malaysia	18	103	5.72	8
Indonesia	17	114	6.71	5
New Zealand	12	153	12.75	9
Nigeria	12	41	3.42	4

Note: Link strength represents the number of co-authorship links shared by the country with other countries publishing in the field corruption of finance.

includes Edison et al. (2002); Beck et al. (2006); Estrin and Prevezer (2011); Karpoff and Lou (2010); Ayyagari et al. (2008); Fan et al. (2008); Bovenberg and van der Ploeg (1994); Del Monte and Papagni (2001); Cornett et al. (2010); Cumming et al. (2011) and Lund et al. (2017).

4. Thematic structure

4.1. Bibliographic coupling

The intellectual formation of corruption in finance corpus was explored using bibliographic coupling analysis. Bibliographic coupling is instrumental in mapping the intellectual formation of a research field (Sureka et al., 2021) and the method assists in identifying research themes and thematic shifts in the subject (Crane, 1972). Using VOSviewer, the bibliographic coupling analysis segregated the 689 documents into five major clusters and various groups consisting less than 10 documents. For further evaluation, the major five clusters were retained, as the other cluster were too small to find distinguish theme among them. The articles in each cluster were thoroughly reviewed to gain a theme-wise comprehensive overview of the corruption in finance corpus. Fig. 5 presents the yearly evolution of the five clusters. The

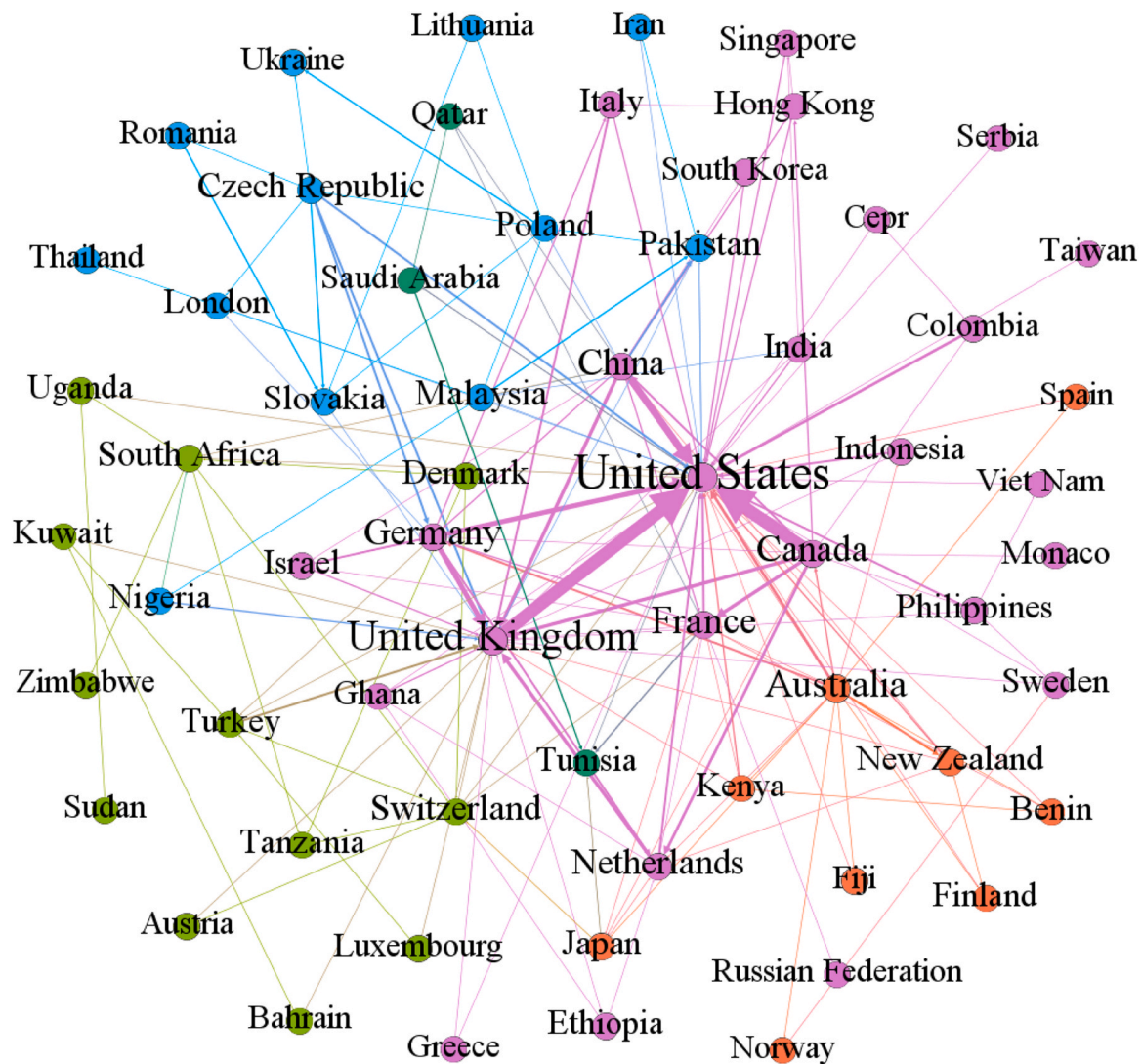


Fig. 4. Co-authorship network among countries publishing on the topic corruption in finance.

figures provides insights about the emergence and trends of development of different themes in the area. The following subsections provides a detailed overview of the five clusters.

Cluster 1: Public finance: Corruption in public finance and public governance.

The “Public finance cluster focuses on the corruption in public finance sector. It is the largest cluster in the domain consisting of 143 documents. It involves topics like corruption in finance due to public governance, public investments, labour market, public ventures, public expenditure policies, public service employment and public-private partnerships. It also discusses the other aspects of corruption in public finance like reduction in tax revenue, fiscal deficits, political stability and auditing in public finance. Drawing upon Fig. 5, the cluster appeared in 1990s with one publication in 1991 but developed during 2000s. The second article in the cluster appeared in 2001 and thereafter research in corruption in finance witnessed a consistent increase in publications. This highlights the increase in corruption in finance in practice and the increase of interest among scholars for this domain. The recent articles appearing in this cluster discusses issues like corruption in finance in terms of political clientelism, political machines, public expenditures, tax evasion and increased taxation, finance security, shadow economy, state debt and transparency (Cendale et al.,

2022; Sedgo and Omgba, 2022; Kuraone et al., 2021; Shkolnyk et al., 2020).

Cluster 2: Financial market: Corruption in stock market: traders, investors, brokers and firms.

The “financial market” cluster is the second largest cluster with 130 articles and has the oldest origin in the field of corruption in finance. The cluster primarily deals with the corruption associated to the financing activity of a firm and trading and investment activities in financial markets. The cluster has two broad sub-themes. First one is associated with the corruption in trading and investment activities in the financial market. Second is associated with the corruption among firms while acquiring equity and debt finances from stock exchanges, banks, financial institutions etc. The major issues discussed in the former sub-theme are exchange of trading rules, insider trading, misconduct, investor protection, lack of information transparency, corporate abuse, hedge funds, financial adviser misconduct, stock manipulation ramping tricks, corruption in lending and illegal finance and bank lending Aitken et al., (2015, 2015, 2008). The cluster has its origin in early 1981 but developed in 1990s. The cluster has an average of 1.6 articles till 2007. From 2008, a surprising increase in the publications can be observed with an average of 7.5 articles every year. The possible reason could be 2008–2009

Table 4
Most influential articles on corruption in finance.

Authors	Year	Title	Journal	TC	C/Y
Dellavigna S.	2008	Political connections and preferential access to finance: The role of campaign contributions	Journal of Financial Economics	742	53.00
Claessens S., Feijen E., Laeven L.	2002	Investor protection and equity markets	Journal of Financial Economics	463	23.15
Dyck A., Morse A., Zingales L.	2010	Electoral manipulation via voter-friendly spending: Theory and evidence	Journal of Development Economics	300	25.00
Tamrazian A., Bhaskara Rao B.	2002	International financial integration and economic growth	Journal of International Money and Finance	278	13.90
Shleifer A., Wolfenzon D.	2006	Bank supervision and corruption in lending	Journal of Monetary Economics	236	14.75
Ayyagari M., Demirgüç-Kunt A., Maksimovic V.	2011	The role of informal institutions in corporate governance: Brazil, Russia, India, and China compared	Asia Pacific Journal of Management	227	20.64
Drazen A., Eslava M.	2010	Short sellers and financial misconduct	Journal of Finance	213	17.75
Edison H.J., Levine R., Ricci L., Słøk T.	2008	How important are financing constraints? The role of finance in the business environment	World Bank Economic Review	180	12.86
Beck T., Demirgüç-Kunt A., Levine R.	2008	Public governance and corporate finance: Evidence from corruption cases	Journal of Comparative Economics	179	12.79
Estrin S., Prevezer M.	1994	Environmental policy, public finance and the labour market in a second-best world	Journal of Public Economics	168	6.00
Karpoff J.M., Lou X.	2001	Public expenditure, corruption, and economic growth: The case of Italy	European Journal of Political Economy	155	7.38
Ayyagari M., Demirgüç-Kunt A., Maksimovic V.	2010	The impact of state ownership on performance differences in privately-owned versus state-owned banks: An international comparison	Journal of Financial Intermediation	147	12.25
Fan J.P.H., Rui O.M., Zhao M.	2016	Keys to successful blue carbon projects: Lessons learned from global case studies	Marine Policy	144	24.00
Bovenberg A.L., van der Ploeg F.	2011	Exchange trading rules and stock market liquidity	Journal of Financial Economics	143	13.00
Del Monte A., Papagni E.	2017	Promising Change, Delivering Continuity: REDD + as Conservation Fad	World Development	128	25.60
Cornett M.M., Guo L., Khaksari S., Tehranian H.	2010	Corporate fraud and business conditions: Evidence from IPOs	Journal of Finance	126	10.50
Wylie L., Sutton-Grier A.E., Moore A.	2017	Country-specific determinants of cross-border mergers and acquisitions: A comprehensive review and future research directions	Journal of World Business	125	25.00
Cunning D., Johan S., Li D.	2013	Subjective knowledge in consumer financial decisions	Journal of Marketing Research	123	13.67
Lund J.F., Sunguša E., Mabele M.B., Scheba A.	2008	Earnings management and earnings quality	Journal of Accounting and Economics	122	8.71
Wang T.Y., Winton A., Yu X.	2019	Institutions and Entrepreneurship Quality	Entrepreneurship: Theory and Practice	119	39.67
Xie E., Reddy K.S., Liang J.	2012	Financing firms in India	Journal of Financial Intermediation	119	11.90
Hadar L., Sood S., Fox C.R.	1992	Futures Manipulation with "Cash Settlement"	The Journal of Finance	119	3.97
Lo K.	2009	Corruption, political connections, and municipal finance	Review of Financial Studies	114	8.77
Chowdhury F., Audretsch D.B., Belitski M.	2013	A synthesis of fraud-related research	Auditing	109	12.11
Allen F., Chakrabarti R., De S., Qian J.Q.J., Qian M.	2007	Start up costs, limited enforcement, and the hidden economy	European Economic Review	106	7.07

Note: TC = total publications, C/Y = average citations per year.

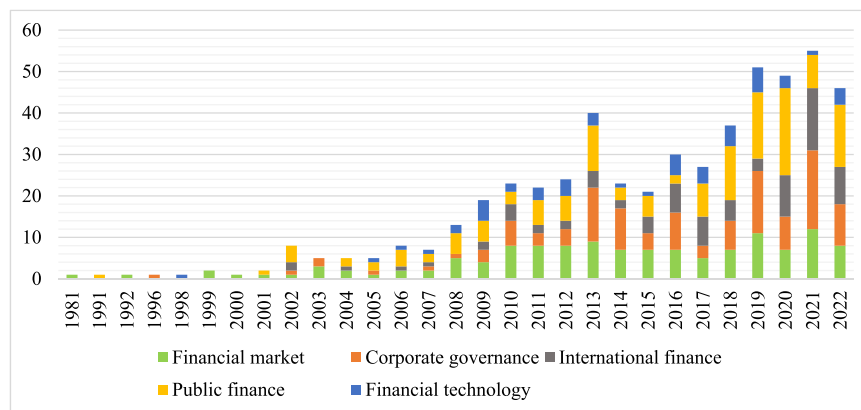


Fig. 5. Evolution of themes in corruption in finance research. This figure represents the yearly evolution of themes explored through bibliographic coupling analysis.

market crash known as the great recession which might have triggered the academicians to look into the misconducts in financial markets more closely and rigorously.

Cluster 3: Corporate governance: Corruption in corporate decisions, earnings and management.

The cluster “corporate governance” has 121 publications and mainly deals with the corruption related to corporate governance part among firms like the corporate failures, corporate declines, corporate scandals, earnings manipulation, earnings shortfalls, impact of board age on corporate financial fraud, corruption in corporate disclosure, CEO wrongdoing, fraudulent misreporting, anti-corruption law on entrepreneurial finance, protective interest and creative destruction and its impact in various aspects like discouragement to women to represent the board etc. The cluster developed during 2000s, during the initial years (2001–2010) the cluster had an average of 2 publications every year which escalated to an average of 8.7 publication between 2011 and 2022. The recent works in this domain talk over topics like corporate governance implementation in state-owned enterprises, impact of corporate board age and corporate financial fraud, fraud in startups, corruption in peer to peer lending platforms and corruption in green finance and climate (Devine et al., 2022; Gleason et al., 2022; Khumalo and Mazenda, 2021; Xu et al., 2018; Li et al., 2022).

Cluster 4: International finance: Corruption in international businesses and international investments.

The central theme of the cluster “international finance” is the corruption involved in international businesses and globalization and privatization. It discusses issues like the factors influencing corruption in international business, the government policies and regulations working against the same, the impact of corruption in international business on foreign direct investments and trade and the impact of political environment and bureaucrats on it, international financial integration and economic growth, global banks and foreign direct investment, impact of corruption on the soundness of Islamic banks and corruption in international investment and international terrorism and finance (Edison et al., 2002; Cieřlik and Goczek, 2018; Argandoña, 2007; Vasilieva, 2017; Gryazeva et al., 2021). The cluster in 2002 and then experienced consistent growth in terms of academic contributions which highlights the increasing prominence and popularity of the topic among the scientific community.

Cluster 5: Financial technology: Corruption in fintech, digital currency and terrorism.

With 53 publications the cluster “financial technology” is the smallest and newest theme emerging in corruption in finance domain. The cluster predominantly discusses the role of financial technologies towards corruption in finance and towards the increase in financing terrorism. The growth in financial technology has increased concern for financial frauds across disciplines. The various aspects involved in this theme of research are financing terrorism through cryptocurrencies,

frauds in digital currency, security of e-banking systems, internet banking and financial fraud, transnational financial crime etc. The recent most works in this cluster are focused on regulations and policies for financial technologies, digital financial inclusion and illegal fundraising, hawala banking for terrorist financing, artificial intelligence and machine learning in finance (Teichmann (2018); Lai et al. (2022); Chen et al. (2021); Teichmann and Wittmann (2022)). The cluster is the newest in the domain of corruption in finance. It began emerging in 2005 and has consistent publications after that.

4.2. Keyword map and evolution

Author keywords excellent insignia of the content of an article and describes the article’s ‘poles of research interest’, ‘research themes’ or ‘problems areas’ (Ijssen and Van Raan 1989). Thus, the study takes to map the keyword network of corruption in finance literature using R biblioshiny. It also tracks the evolution of author keywords across different time periods to understand how the research progressed and what are the trends and shifts in the evolution of corruption in finance research. Fig. 6 presents the thematic map of author keywords. The figure is based on the research centrality and density rank into a strategic diagram (Callon et al., 1991). The centrality is a measure of the degree of association of keyword and density is a measure of the internal strength of the network. Using them the research field the research themes are plotted on a dimensional strategic diagram and the themes are classified into four categories (Cobo et al., 2011). The following sub-sections provide a brief of the thematic map of the corruption in finance research.

4.2.1. Motor themes (quadrant Q1)

Motor themes carry strong centrality and high density making them significant for the development and formation of the corruption in finance field of research. The motor themes in this field are insider trading, law and finance, market manipulation, audit quality, corporate finance, money laundering, terrorism and financial crime.

4.2.2. Niche themes (quadrant Q2)

Niche themes are highly developed, strongly related and highly specialized themes. However, these themes do not have the appropriate background for the field (Herrera-Viedma et al., 2020). The niche themes for corruption in finance research are electronic finance, fintech, internet banking, mobile technology and innovation.

4.2.3. Emerging or declining themes (quadrant Q3)

Emerging or declining themes have low density and centrality making them weak themes as these are either emerging topics at their nascent stage or are declining topics. Artificial intelligence, behavioral finance, corporate governance, law, financial markets and Islamic

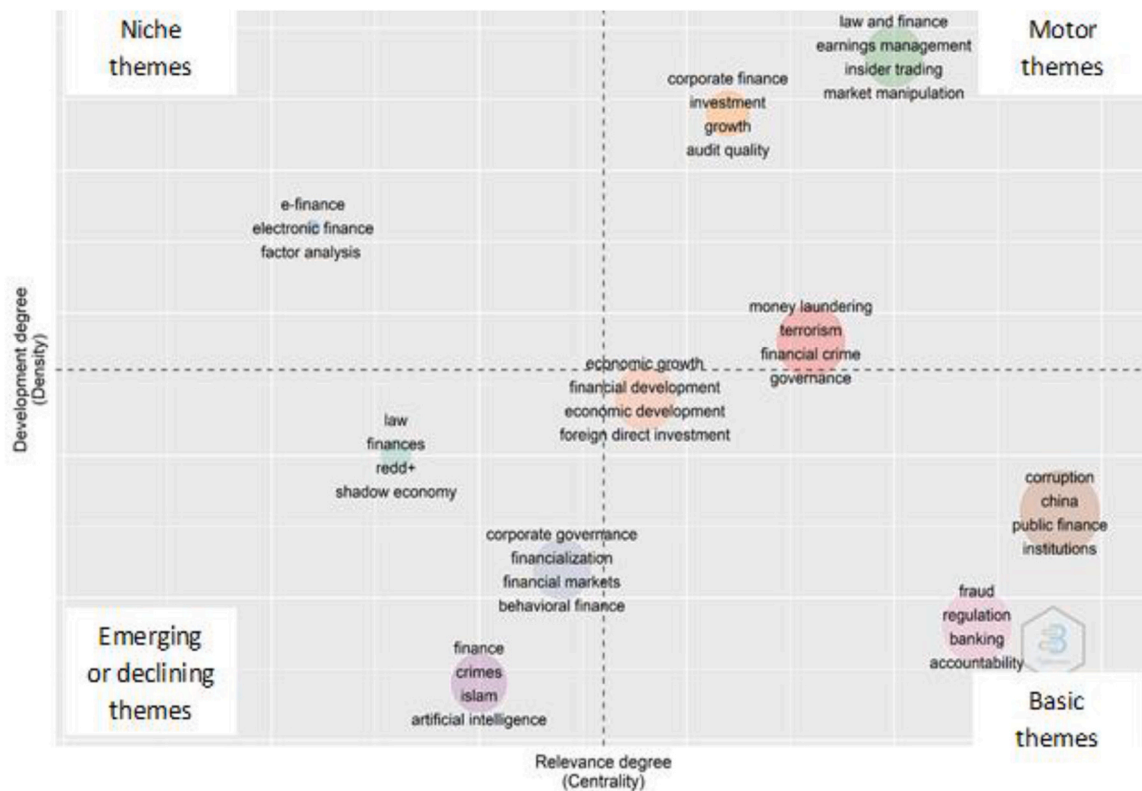


Fig. 6. Thematic map of corruption in finance research formed with author keyword analysis.

finance are some of the example in this category for corruption in finance research.

4.2.4. Basic and transversal themes (quadrant Q4)

Basic themes are relevant have high centrality but low density, thus they are important for the field of research but are not well developed (Herrera-Viedma et al., 2020). The basic themes in corruption in finance research are public finance, institution finance, banking, regulations, accountability, financial development, economic development and foreign direct investment.

Further, Fig. 7 shows the evolution of topics in corruption in finance research over for time frames. Note that the older scientific publications do not necessarily contain author keywords, thus, the first time period breakdown was done at 2011. Even though very few keywords appeared till 2011 which includes money laundering, corporate finance, corruption, financial market, law and finance. This inclination of

corruption in finance researchers shifted more towards china, fraud, earnings management, crime, South Africa and reputation between 2012 and 2016. The next three years, 2017–2020 focus majorly shifted to the new frontiers like artificial intelligence, transparency, economic development, financial development, financial inclusion, anti-money laundering, regulation and financial crime. The figure also lists g24 and g14, these are the Journal of Economic Literature (JEL) classification of scholarly literature in the field of economics by American Economic Association The figure also depicts that till 2011, the research on corruption in finance was more centric on topics related to JEL code-g24, indicating articles related to investment Banking; Venture Capital; Brokerage; Ratings, and Rating Agencies. In the recent years (2021–2022) the trend has moved to the issues associated with JEL code- g14, indicating the shift toward information and Market Efficiency, Event Studies, and Insider Trading. The recent years 2021 and 2022 is the period of corruption in entrepreneurial finance, household

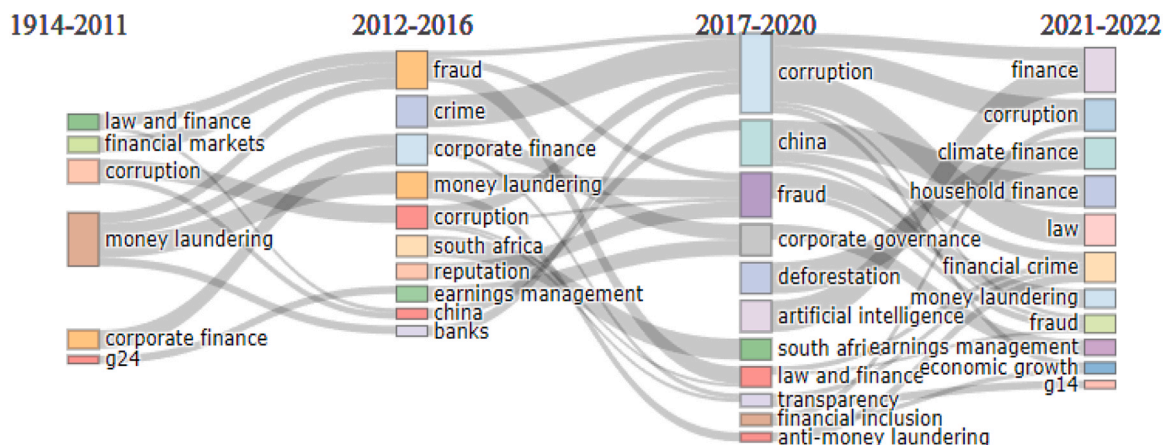


Fig. 7. Evolution of topics (author keywords) in corruption in finance research.

finance and climate finance. This shows how fast the research focus has shifted across different time periods.

5. Discussion and conclusion

Corruption in finance will remain in existence for both in practice and in academia due to the increase in financial technologies, public demands and inflation until a comprehensive and effective legislation and regulations comes in. As the world becomes more connected through newer technologies and innovations the activities of financial crime, money laundering and financing for terrorism are getting easy. This possibly had increased the interest about the field within academia which is evident from the increased number of research articles over the years. The bibliographic coupling analysis and the keyword thematic map and evolution led to various promising research endeavours which future scholars can explore.

5.1. Determinants of corruption in finance

It would be interesting to understand the key drivers for individuals taking up activities of corruption in finance. Factors like age, gender, education, political background, religion, peer group, geographical orientation, cultural factors, personality factors and psychological factors could be explored (Xu et al., 2018). Qualitative studies on this regard could bring novel findings in this field with new factors to look into. It will help in managing or eliminating corruption from the finance world.

5.2. Financial fraud detection through big data, machine learning and IoT

The next generation technology particularly disruptive technologies and applications like artificial intelligence, cloud technology, distributed ledger technologies, and IoT in financial ecosystems could assist the finance forensics in fraud investigation and auditability. Scholars can explore this wide area of research and contribute in combating corruption in finance.

5.3. Environmental, social, and governance controversy

ESG controversies refers to potentially damaging corporate activities and the media's dissemination of unfavorable ESG information about corporations, such as their participation in scandals. Before making an investment or providing finance to a firm, stakeholders can use ESG criteria to assess its performance and compare it to that of its rivals (Cole et al., 2021). Because of ESG controversy, businesses get bad press, which leads in losses like a decline in market share. This requires substantial attention from both academia and practice and investigate various issues related to ESG controversy and its impact on finance.

5.4. Combating corruption in finance

This research frontier focuses on the anti-corruption measures, methods, regimes, programs and certification standards. Research could be take up to explore the measures that could help in combating corruption in finance, effectiveness of such anti-corruption programs and its effect. Studies could also be lined to the certification standards of such program to ensure efficiency and effectiveness.

5.5. Blockchain for transparency

The future scholars could explore the integration of Blockchain technology in financial sector. The studies could investigate how the transparency of Blockchain contributes towards combating the corruption in finance world.

5.6. Regulation, enforcement, lobbying and corruption

The discussion about the relationship between regulations and corruption may exist but the increase in the numbers of financial crimes and frauds is an indication to look into the topic more extensively. Scholars can work on the advancement of the research frontier by assessing the evaluation of policies, regulation updates, policy loopholes and effectiveness of policies and regulations.

5.7. Impact of corruption in finance on firms

Corruption has major influences on the functioning, operations, profitability, export capabilities and growth of the firms (Cuervo-Cazurra, 2008; Roy and Uhlenbruck et al., 2006). It directly disturbs the healthy competitive market. It also has a bearing on the reputation of the firm. Future scholars could provide empirical evidences on how and in what ways corruption impact a firm's productivity, growth, reputation, profitability or other.

Using bibliometric analysis this study rigorously explores the field of corruption in finance. The trends in major research constituents suggest that there has been consistent increase in the number of publications. The field is mostly published by the journals like *Journal of Financial Crime*, *Journal of Money Laundering Control*, *Journal of Business Ethics*, *Managerial Finance* and *World Development* which are the high-quality research outlets of finance. It highlights the prominence, popularity and issue of concern of the topic in both academia and practice. Most research in the field has come from the scholars of the United States and United Kingdom. The current research in the field is led by five major research themes. The keyword co-occurrence analysis of the field suggests that the major topics explored by authors include money laundering, law and finance, terrorism, earnings management, crimes, financial crime, insider trading, governance, corporate finance and market manipulation. Finally, based on the detailed content analysis of research themes and keyword evolution the study suggest various future research direction for the scholars of corruption in finance research.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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