

## Exploring Global Research Trend on SME Exchange: A Bibliometric Analysis

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### Abstract

Taking paucity of comprehensive literature on the emerging topic of SME exchange, this bibliometric analysis is a novel endeavor to explore the global research trend on such SME exchange. The study comprises a review of 55 articles after filtering 546 articles from the Scopus database for a period of 30 years (1992-2021). The study documents that after 2016 there is a upsurge in the literature on SME exchange while the most prominent contributor is Arora N. from Guru Nanak Dev University. Global Business Review is the leading journal documenting literature on SME exchange and most of the leading studies are based on Asian context which signifies a clear research gap to explore on other contexts. The co-occurrence analysis highlights that the financial market, stock market, under-pricing, and IPOs are major themes of SME exchange. This paper will help the researchers, regulators, policymakers to understand the current status of research on SME exchange and helps to identify relevant unexplored areas.

**Keywords:** Bibliometric Analysis; Scopus Database; SME Exchange; Financial Market; VOSviewer

### 1. Introduction

Defining Small and Medium Enterprises (SMEs) in common parlance is not an easy task as it varies across the globe. Some countries and regions are considering the number of full-time employees as a criterion for defining SMEs while some are considering annual turnover or amount of investment and some are taking all such criteria or either any of them (Harwood and Konidaris, 2015). Like European Union defines SMEs to those enterprises having employees less than 250 numbers or turnover less than €50 million; South Africa adopts varying criteria for different business sectors as per its National Small Business Amendment Act 2003. This classification distinguishes among various sectors and takes full-time employees (less than 200), total gross asset value, and annual turnover into account. Similarly country like Poland, Turkey, Taiwan are considering both the number of full-time employees and the amount of turnover for defining SMEs. Brazil defines SMEs based on the number of employee and this varies according to nature of business (service & commercial sector fewer than 100 employees and for industrial sector fewer than 500 employees). India defines SMEs as per the Micro, Small and Medium Enterprises Development Act, 2006, and the definition for enterprises is based on the amount of investment in plant and machinery and amount of turnover.

The SMEs sector is considered as the growth engine of any economy; as they significantly contribute to the development of the economy by the way of Gross Domestic Product (GDP), industrial growth, employment generation, and export of goods and services (Ibrahim, 2018). Bell (2015) suggested that more than 95% of enterprises across the world are SMEs and their contribution to world employment is 60% and towards GDP is around 40%. Despite their significant contribution to the economy, SMEs are suffering from several issues and the credit crunch is one of them. There are multiple factors responsible for such crises in SMEs like non-availability of adequate and timely credit, collateral requirement, limited access to capital market, high cost of credit, etc. (Ibrahim, 2018). Most of the time, SMEs rely upon bank loans for fulfilling their capital requirement. But after the financial crises of 2008 and the introduction of capital requirement norms with Basel-III, it is very difficult for SMEs to raise capital from banks as banks are putting several stringent covenants which discourage SMEs to get adequate capital. Hence, SMEs are mostly dependent on promoters' funding as well as on a few specialized banks (like SIDBI in India) which are meant for SMEs for their capital requirement. But such funding assistance is not sufficient for their capital expenditure requirement and limited to only their working capital requirement (Ibrahim, 2018). According to IFC (International Finance Corporation), the financing shortfall for the 25 to 30 million formal SMEs in emerging economies is around \$1 trillion<sup>1</sup>. This financial hurdle creates a strong barrier in SMEs' long-term sustainability and also enforces the regulators to develop an alternative source of equity funding to SMEs which ensures barrier-free as well as quick access of long-term capital.

To address the above acute financing problem of SMEs, an exclusive exchange has been developed for SMEs by various Governments. But developing an exchange for SMEs is not an easy task as many emerging economies as well as advanced economies find it difficult to setup an exchange for SMEs as many SMEs are significantly smaller in size (World Federation of Exchange, 2015). Despite the issue, some country's regulators are paying significant attention to promote SMEs by developing a dedicated exchange for SMEs as well as reducing the stringent policy requirement, proper investor protection, etc. The lists of such SME exchanges are as follows:

**Table 1: SME Exchanges Across Globe**

Sl. No	Exchange Name	Name of SME Market	Country
1	BSE India Limited	Small & Medium Enterprises	India
2	National Stock Exchange India	Emerge	India
3	BM&FBOVESPA	BovespaMais	Brazil
4	Bolsa de Comercio de Buenos Aires	Pyme Board	Argentina
5	Intercontinental Exchange Group (NYSE)	Intercontinental Exchange, Inc. / NYSE MKT	United States
6	TMX Group	TSX Venture	Canada
7	Bursa Malaysia	ACE Market	Malaysia
8	Hong Kong Exchanges and Clearing	Growth Enterprise Market	Hong Kong, China
9	Japan Exchange Group	JASDAQ	Japan
10	Japan Exchange Group – Osaka	Mothers	Japan
11	Korea Exchange	Kosdaq	South Korea
12	NZX Limited	NZAX	New Zealand
13	Philippine Stock Exchange	SME Board	Philippines
14	Shenzhen Stock Exchange	ChiNext	China
15	Singapore Exchange	SGXCatalist	Singapore

<sup>1</sup>IFC Enterprise Finance Gap Database (2011).

16	Stock Exchange of Thailand	Market for Alternative Investment (MAI)	Thailand
17	Taipei Exchange (previously named as GreTai Securities Market)	Taipei Exchange	Taiwan
18	Athens Stock Exchange	Alternative Market (EN.A)	Greece
19	BME Spanish Exchanges	MAB Expansion	Spain
20	Borsa Istanbul	Second National Market	Turkey
21	Cyprus Stock Exchange	Emerging Companies Market	Cyprus
22	Deutsche Boerse	Entry Standard	Germany
23	Egyptian Exchange	NILEX	Egypt
24	Euronext	Alternext	Netherlands
25	Irish Stock Exchange	Enterprise Securities Market	Ireland
26	Johannesburg Stock Exchange	Alternative Exchange	South Africa
27	London SE Group	AIM	United Kingdom
28	Luxembourg Stock Exchange	Euro MTF	Luxembourg
29	Moscow Exchange	Innovations and Investments Market	Russia
30	NASDAQ OMX Nordic Exchange	First North	United States
31	Nigerian Stock Exchange	Nigerian Stock Exchange	Nigeria
32	Oslo Bors	Oslo Axxess	Norway
33	Stock Exchange of Mauritius	Development & Enterprise Market	Mauritius
34	Warsaw Stock Exchange	New Connect	Poland
35	Wiener Borse	Second Regulated Market and Third Market (MTF)	Austria

Source: World Federation of Exchange

The SME exchange is also known as an alternative stock market. It provides a new fundraising avenue and a unique identity for SMEs that are unable to get listed on the main market. Although SME exchange is a major component of the SMEs financing ecosystem (World Federation of Exchange, 2015) and is rapidly being established worldwide, it has received limited academic attention. This condition raises several questions such as: what is the current state of the knowledge on SMEs exchange? how has the SME Exchange been researched and what findings have been produced? what lessons can we learn from this body of knowledge? what is the research gap and scope for future research? etc. and needs a comprehensive study.

On the above backdrop, the present paper has made a novel attempt to answers such pertinent questions by conducting a timely and necessary review of literature on SME exchange comprehensively through a bibliometric methodology. This paper contributes to the existing body of knowledge on SMEs in several ways, Firstly, it is the first bibliometric paper on SME exchange so far author's knowledge is concerned. Secondly, it gives a deep insight into the status of research on SME exchange and the research gap which helps various researchers and regulators for conducting future study. Lastly, it has taken literature from one of the recognized and comprehensive databases i.e. Scopus, which ensures good quality literature for analysis and enriching the dearth of literature in SME financing.

The rest of the paper has been organized as follows: Section 2 deals with data and method of analysis, section 3 highlights research trend and bibliography analysis, section 4 highlights the limitation of the study and conclusion.

## 2. Method

A mix of bibliometric and manual content analysis tools has been used for the analysis. Bibliometric analysis is a quantitative method that provides deep insight into the literature (De Bellis, 2009; Benckendorff and Zehrer, 2013) and helps the scientist to build new knowledge (Dabic et al., 2014; Dabic, González-Loureiro and Harvey, 2015; Gonzalez-Loureiro, M., Dabic and Furrer, 2015; López-Duarte et al., 2016; Gonzalez-Loureiro et al., 2017). While content analysis is a method of analyzing selected papers and derive a synthesis (Duriau, Reger and Pfarrer, 2007; Khoo, Jin-Cheon and

Jaidka, 2011; Seuring and Gold, 2012). Bibliometric covers various approaches such as author analysis, co-author analysis, citation analysis, co-citation analysis, and bibliographic linking quotation (De Bellis, 2009), and co-word analysis for keyword (He, 1999), depending on which data it uses in research.

## 2.1 Data Base, Keywords and Search Strategies

Data were mined in June 2021 from the Scopus database, which is the world's premier database for published articles, abstracts and citations and used by earlier studies for bibliometric analysis (Khiste and Paithankar, 2017; Abbas *et al.*, 2020). The data were collected from 1992- 2021, as first SME platform was started in the year 1994 at Taiwan's GreTai exchange. A string of appropriate search terms ("SME Exchange" OR "SME Capital Market" OR "Small and Medium Enterprises Exchange" OR "sme\*AND exchange AND market" OR "SME\*AND ipo\*"OR "SME\* platform" OR " SME\* AND Intial public offering\*" OR "SME\* pricing" OR "SME\* Volatility" OR "SME\* stock trading") were used to search the papers in title, abstract or keywords and the search led to 546 initial results. Then such documents further refined to specific subjects (i.e. business & management, social science and economics) and language (English), yielding 115 documents. Further, all the keywords and titles were reviewed manually and those keywords and title are found irrelevant to our main theme were removed and finally 55 articles are considered for bibliometric analysis. Although SME exchange has been established since 1994 and have been increasingly adopted by many exchanges worldwide but it has attracted limited attention from academic community due to limited number of sample as well as slow growth of SMEs in capital market (Castro *et al.*, 2020). Hence, only limited research output (i.e. 55 nos.) are available but even if it is small in number but it qualifies minimum standard for bibliometric analysis, as argued by Rogers *et al.*, (2020) that a minimum number of 50 article is required for bibliometric analysis to ensure quality. Further same number also supported by early study of Bornmann *et al.*, (2012).

## 2.2 Software for analysis

After shortlisting of 55 final articles, all the articles were exported to "VOSviewer" (version 1.6.16, center for science and technology studies, Leiden University, The Netherlands), a bibliometric mapping and visualization software tool and "biblioshiny" ('a shiny app providing a web-interface for bibliometricanalysis'). The data retrieval and analysis processes is depicted in figure1.

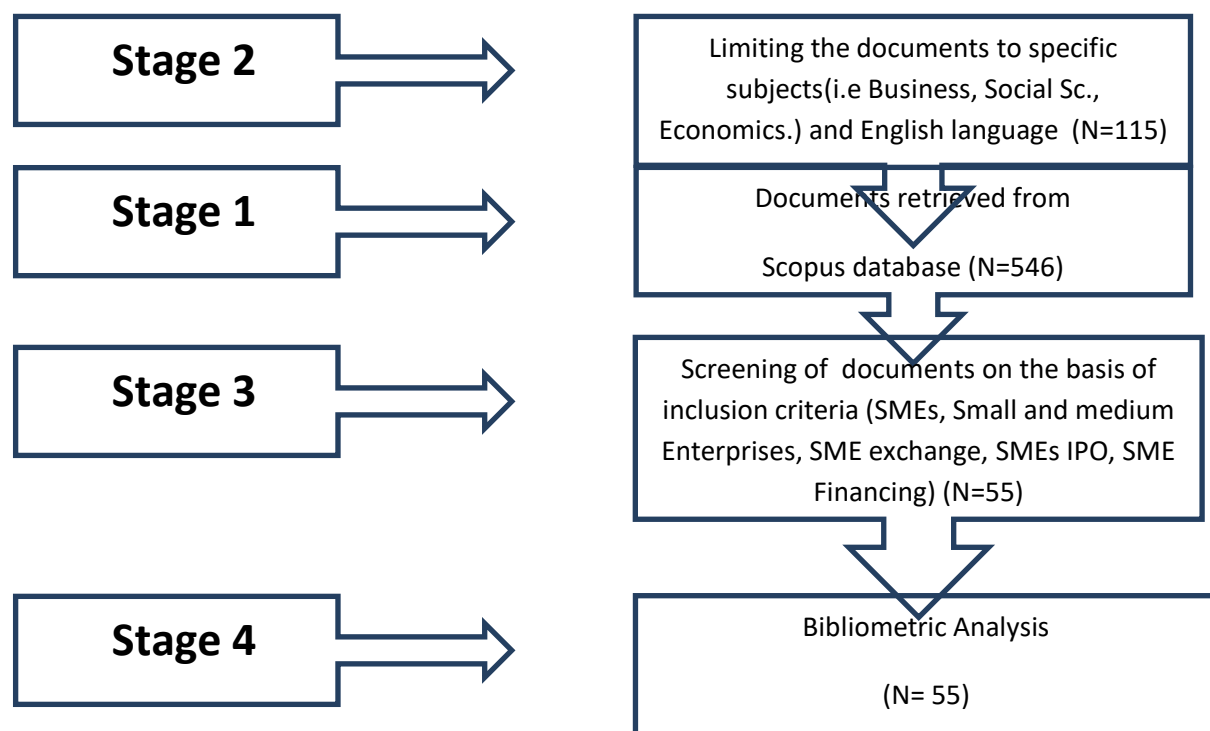
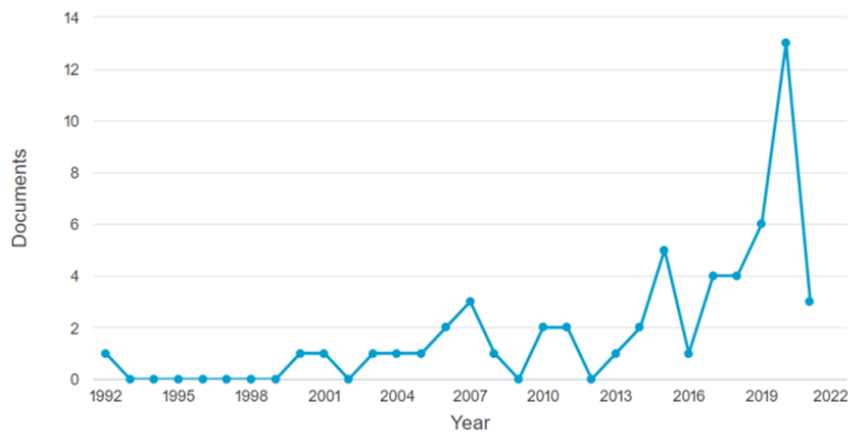


Figure 1: Data retrieval stages

### 3 Analysis of Data

#### 3.1 Publication trend over time



**Figure 2: Annual document publication (1992-2021)**

Source: Scopus database

Figure 2 highlights the progress of publication available in the scopus database on “SME exchange” from 1992-2021. There has been an upturn in the publication: from just a single article published in 1992 to 13 article in 2020. Though there has been some progression after 2000 but research on SME exchange has witnessed a sudden increase from 2016 onwards. The main reason for such progression is that after 2013 onwards major numbers of SMEs participated in the stock market which gives a food for thought to the academic community. Although there has been a remarkable growth from the initial year but the highest number of article per year is 13 which indicates there is need of significant academic attention to explore the unexplored areas.

#### 3.2 Leading Journal publishing on SME exchange

**Table 2: Top 15 journals publishing on SME Exchange**

Sl. No.	Journal	ABDC Ranking	Publisher	ISSN No.	SCS	TP
1	Global Business Review	C	Sage Publications	0972-1509	2.1	3
2	Chinese Economy	B	Taylor & Francis	1097-1475	1.6	2
3	International Journal of Entrepreneurship And Innovation Management	C	Inderscience Enterprises Ltd.	1368-275X	1.4	2
4	Journal of Small Business And Enterprise Development	C	Emerald Group Publishing	1462-6004	4.5	2
5	Sustainability	NR	Multidisciplinary Digital Publishing Institute (MDPI)	2071-1050	3.9	2
6	Small Business Economics	A	Springer International Publishing	0921-898X	8.8	1
7	Journal Of Small Business Management	A	Wiley-Blackwell	0047-2778	6.4	1
8	Technology Analysis and Strategic Management	B	Taylor & Francis Online	0953-7325	4.1	1

9	Global Finance Journal	B	Elsevier	1044-0283	3.3	1
10	Quarterly Review of Economics And Finance	B	Elsevier	1062-9769	3.2	1
11	China And World Economy	B	Wiley-Blackwell	1671-2234	3	1
12	China and World Economy	B	Wiley-Blackwell	1671-2234	3	1
13	The North American Journal of Economics and Finance	B	Elsevier	1062-9408	2.4	1
14	Applied Economics Letters	B	Taylor & Francis Online	1350-4851	1.4	1
15	Managerial And Decision Economics	B	Wiley-Blackwell	0143-6570	1.2	1

Source: Scopus Database

Note- Here, SCS is the Scopus Cite Score obtained from Scopus site, TP is the total publication, ABDC is ranking of journal quality (given by Australian Business Deans Council), 'A\*' is the highest quality indicates top 5%- 7% journals in the field, 'A' is the 2nd highest quality indicating next 15% to 25% journals, 'B' is the third highest quality journals indicating 35% to 40% journals in the field, 'C' is the fourth highest quality journals showing rest of the journals and NR stands for 'Not Rated/ranked'

The 55 publications are dispersed across 49 journals and 2 books chapters. The table 2 highlights the most prominent journals publishing on SME exchange. The top 15 leading journals have published 21 of the total paper published, representing 38.18% of the total publication. Global Business Review is the leading journal providing a publication platform for SME exchange followed by Chinese Economy. Further, majority of the journals are ABDC (Australian Business Deans Council) ranked including rank 'A' & 'B' which indicates that SME exchange occupies a space in the quality journals in the domains of business and management.

### 3.3 Leading Countries in Publication of SME Exchange

As per data, researchers in 18 countries across the world have paid their attention towards SME exchange topic. Figure 2 indicates India (11 Nos.) is the leading country among all the countries publishing literature on SME exchange followed by China (10 Nos.) and United States (7 Nos.). The results shows that majority of the studies are in Asian context which also create a research gap and scope for research for other continents.



Figure 3: Top 15 publishing country on SME exchange

Source: Authors' Compilations

### 3.4 Leading Organizations in Publication

Table 3: Top 15 institution publishing on SME exchange

Sl. No.	Institution	No of Publication
1.	Guru Nanak Dev University	6
2.	James Cook University	3
3.	Charles Darwin University	2
4.	James Madison University	2
5.	College of Business Administration	2
6.	College of Business, Law, and Governance	2
7.	Univ of Science & Technology	1
8.	Hochschule Osnabrück	1
9.	Beihang University	1
10.	University of Oxford	1
11.	University of Johannesburg	1
12.	Friedrich-Alexander-Universität Erlangen-Nürnberg	1
13.	Stanford University	1
14.	EwhaWomans University	1
15.	Yeungnam University	1

Source: Author's compilation from Scopus Database

The data illustrates that 76 institutions across the world are active in the research on SME exchange including premier institutions like Stanford University, University of Oxford etc. As per the results highlighted in the table 3 on the top 15 leading institutions on SME exchange, Guru Nanak Dev University (6 Nos.) from India occupies the first position followed by James Cook University (3 Nos.) from Australia. The same results also depicted in figure 3 which advocates that as SME exchange is an emerging issue and need more attention from all leading institution in the world and is a gap for future research.

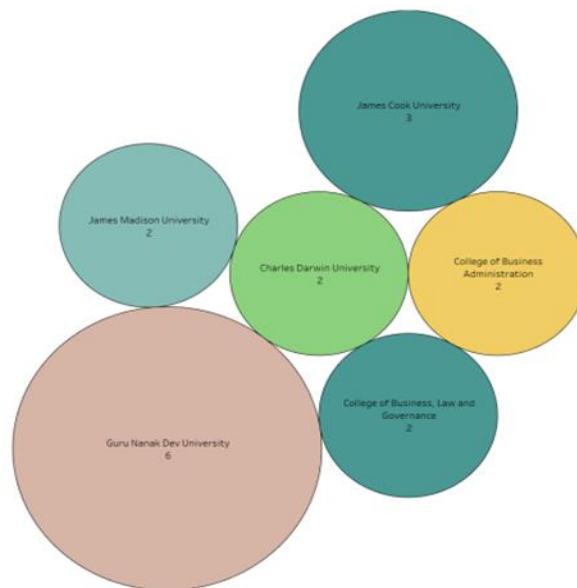


Figure 4: Leading organization doing research on SME Exchange

Source: Scopus database



### 3.5 Prolific researchers in SME exchange research

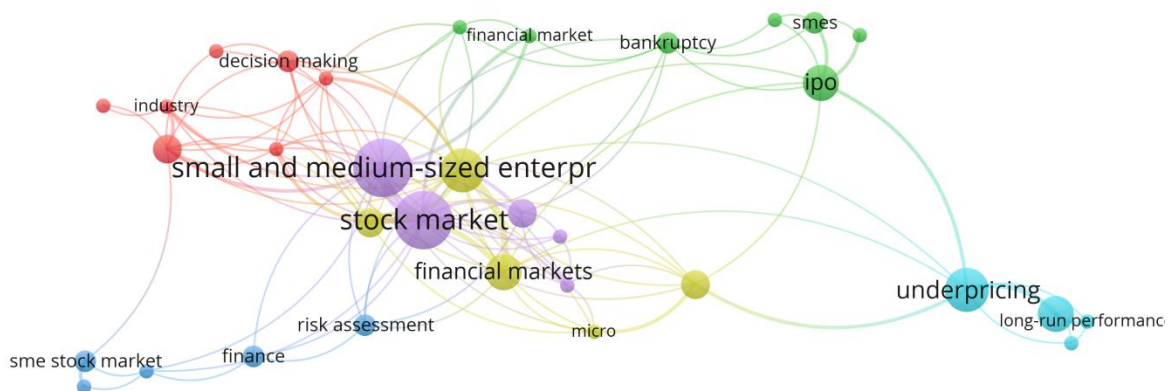
**Table 4: Top 15 authors in SME Exchange**

Sl. No.	Author Name	Number of Publication
1	Arora, N.	6
2	Singh, B.	6
3	Chaiechi, T.	3
4	Eagle, L.	3
5	Low, D.	3
6	Nguyen, T.	3
7	Abidin, S.	1
8	Achterberg, L.H.	1
9	Ali, S.Z.	1
10	Ambituuni, A.	1
11	Anand, A.	1
12	Anderson, H.	1
13	Arora, R.K.	1
14	Bae, J.	1
15	Baisden, B.L.	1

Source: Scopus database

Table 4 highlights the top 15 leading authors who have significantly contributed to the SME exchange body of knowledge out of total 140 authors. Arora, N is the highest contributor in the field of SME exchange followed by Singh B. from Guru Nanak Dev University, India.

### 3.6 Author keyword co-occurrence analysis



**Figure 5: Keywords network analysis on SME exchange**

Source: VOSviewer output

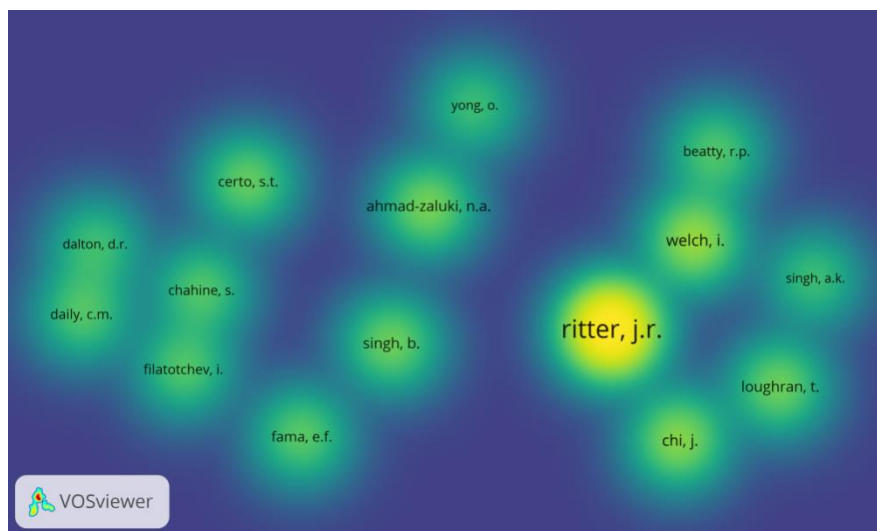
The keywords in a paper represent the themes of the paper (Comerio and Strozzi, 2019). Using the VOS Viewer, co-occurrence analysis with all keywords was performed to explore the most prevalent themes in SME exchange. A total number of 313 keywords were identified in 55 papers. The figure 4 illustrates that small and medium sized enterprises,



stock market, financial market, under-pricing are the prominent theme in the field of SME exchange with maximum occurrence.

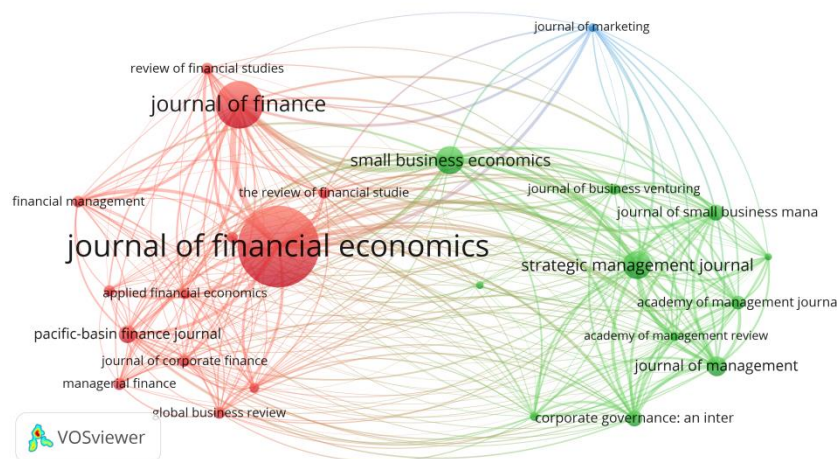
### 3.7 Co-Citation network analysis

Co-citation indicates the number of times two papers are cited together in another paper. This co-citation is very much popular in bibliometric analysis. This analysis helps to identify the most influential documents. The paper has applied co-citation analysis in both author as well as journal. The results reveals that Arora N. is the highest cited author along with Singh B. who is highly co-cited by other authors in the SME exchange body of literature (See figure 6) while Journal of financial economics is the highest cited journal (see figure 7) which has been co-cited along with other journal .



**Figure 6 :Author co-citation network analysis**

Source: VOSviewer output



**Figure 7: Journal co-citation network analysis**

Source: VOSviewer output

### 3.8 Cluster Analysis

Cluster analysis is one of the key elements in co-citation analysis. Cluster analysis helps to identify the collaboration patterns and interrelation among a co-citation analysis. The default algorithm of cluster formation in Biblioshiny is the 'Louvain algorithm'. The 'Louvain algorithm' is an iterative model works on the mechanism of determining the optimal

number of partitions which maximizes the Modularity Index (Blondel et al., 2008). Modularity can be explained as a value between -1 and +1 that computes the density of links (edges) inside groups compared with connections among groups. The modularity index  $Q$  is calculated by the following formula:

$$Q = \frac{1}{2m} \sum_{ij} \left[ A_{ij} - \frac{K_i K_j}{2m} \right] \delta(C_i, C_j)$$

Applying this algorithm through Biblioshiny, we got 4 major clusters containing 35 articles in the domain of SMEs Exchange. The sizes of clusters varies from each other. Cluster 1 and Cluster 2 consist of 9 documents each, Cluster 3 consists of 12 documents, and cluster 4 consists of 5 documents. To identify the intellectual structure of research on the 'SME Exchange', we have conducted a content analysis of each of the 4 clusters obtained from co-citation analysis

**Table 5: Clusters in SME Exchange**

Author	DOI/Online Link	Author	DOI/Online Link
<b>Cluster 1: IPOS&amp;SME</b>		<b>Cluster 3: SME IPO &amp; Corporate Governance</b>	
Meggison W.L. 1991	10.1111/j.1540-6261.1991.tb03770.x	Thorsell A. 2014	<a href="https://ssrn.com/abstract=2939594">https://ssrn.com/abstract=2939594</a>
Rock K. 1986	10.1016/0304-405X(86)90054-1	Certo S.T. 2001	10.1177%2F104225870102600202
Carter R. 1990	10.1111/j.1540-6261.1990.tb02426.x	Certo S.T. 2003	10.5465/amr.2003.10196754
Loughran T. 1995	10.1111/j.1540-6261.1995.tb05166.x	Chahine S. 2009	10.1111/j.1467-8683.2008.00724.x
Ritter J.R. 2002	10.1093/rfs/15.2.413	Velamuri S.R. 2017	10.1007/s11187-016-9797-7
Beatty R.P. 1986	10.1016/0304-405X(86)90055-3	Agathee U.S. 2012	10.1016/j.ribaf.2012.01.001
Loughran T. 1994	10.1016/0927-538X(94)90016-7	Arora N. 2019	10.1177%2F0258042X19829285
Ritter J.R. 1991	10.1111/j.1540-6261.1991.tb03743.x	Badru B.O. 2019	10.1108/IJMF-01-2018-0025
Beatty R.P. 1989	<a href="http://www.jstor.org/stable/247856">www.jstor.org/stable/247856</a>	Connelly B.L. 2011	10.1177%2F0149206310388419
<b>Cluster 2: Determinants of IPO underpricing in SME</b>		Darmadi S. 2013	10.1108/03074351311294016
Sundarasan S.D. 2018	10.1177%2F0972150917713367	Handa R. 2017	10.1177%2F0972150917692193
Allen F. 1989	10.1016/0304-405X(89)90060-3	Jensen M.C. 1976	10.1016/0304-405X(76)90026-X
Anderson H. 2015	10.1080/10971475.2015.993215	<b>Cluster 4: SME's Financial Performance</b>	
Bhattacharya A. 2017	10.1016/j.gfj.2017.02.001	Abor J. 2007	10.1108/15265940710777315
Dhamija S. 2017	10.1177%2F0972150917713081	Barney J. 1991	10.1177/014920639101700108
Liu X. 2011	10.1016/j.jfineco.2011.01.009	Barber B.M. 1997	10.1016/S0304-405X(96)00890-2
Beatty R.P. 1996	10.1086/467359	Fama E.F. 1993	10.1016/0304-405X(93)90023-5
Gao J. 2015	10.1080/10971475.2015.1067085	Fama E.F. 1998	10.1016/S0304-405X(98)00026-9
Ghosh S. 2005	10.1080/1540496X.2005.11052625		

Source: Authors' compilation

### Cluster 1: IPOs & SME

Cluster one consists of nine articles in the area of pricing of IPOs. It is important for small medium enterprises to properly price the IPOs when they intend to raise finance by issuing securities in the market. The area traces its history to late 90s' when Rock (1986) published an article titled "why new issues are underpriced". The study argues that IPOs are underpriced as a compensation to uninformed investors. Informed investors crowd out the uninformed when good issues are offered and they withdraw from the market in case of bad issues. So, issuing firms offer IPOs at a discount to motivate uninformed investor to purchase the shares. Similar study by Beatty & Ritter (1986) confirms that underpricing equilibrium (balanced relation between underpricing and uncertainty of investors regarding IPO value) is enforced by investment bankers, who have reputation capital at stake. Low or high underpricing can cause the investment bankers to loose investors or issuers. So, they always put effort to maintain the equilibrium. Another study by Beatty (1989) finds that there exist an inverse relationship between auditor reputation and initial IPO return. Carter & Manaster (1990) studied the relationship between IPO return and reputation of underwriters. Reputation of underwriters indicates the degree of informed activity. Normally prestigious underwriters are associated with less risky issues. In case of less risky issues, there will be less number of informed investors as the incentive of acquiring information is lower when risk level is lower. So, in this case the return also will be lower. Ritter (1991) proves high initial performance of IPOs due to underpricing. In the same year another study by Megginson (1991) focuses on analysing impact of venture capital in IPO. Presence of venture capital results in low initial return and gross spreads. Another study which comes under this cluster "IPOs: International Insights" by Loughran (1994) studies the impact of timing of IPOs. The study finds that companies going public are underpriced in short-run. Loughran (1995) proves that firms issuing IPO or SEO (Seasonal Equity Offering) have low return compared to non-issuing firms. Study by the same authors also confirms that IPOs where lot of money left on the table are those where offer price and market price are higher. Underpricing makes it easier for the IPOs to get floated in the market (Loughran, 2002).

### Cluster 2: Determinants of IPO underpricing in SME

The second cluster consists of nine articles in the area of underpricing of IPOs. These studies mainly focus on analysing different causes of underpricing. Sundarasan et al. (2017) examined the effect of auditors' and underwriters' reputation on IPO return in the context of global financial crisis. The results indicate that there exists a positive relationship between auditors' reputation and initial IPO return and negative relationship between underwriters' reputation and IPO return. The result is more valid in the context of emerging economy where active retail investors are less informed about new issues. Post crisis, the relationship between auditors' reputation and IPO return changes and becomes negative. Extra cautiousness of investors regarding IPOs performance post crisis and as no such attestation is given by auditors to increase demand for IPOs, the relationship becomes negative. An analysis by Ghosh (2005) using 1842 companies' data from Bombay Stock Exchange indicates that Indian investors consider large issues as less risky. This is the implication of signalling theory which states that less underpricing for issues that collected large amount of funds subsequently from market. Dhamija (2017) found that type of offer, size of issue, promoter holding, over subscription and lead manger's prestige are the determinants of underpricing of IPOs by small & medium enterprises. Evidence indicates that post listing out performance of SMEs' stocks. This may be due to less frequency and volume of trading of these stocks. Information asymmetry and behavioral theory are two significant cause of IPO underpricing. Investors' speculative and irrational behavior due to availability of less information regarding new issuing firms is the cause of IPO underpricing (Anderson et al. 2015). Gaoetal. (2015) focused on analyzing relationship between earnings management and IPO performance (IPO underpricing and post-issue performance) taking a sample of 464 Chinese small & medium enterprises IPOs. The findings state that total discretionary accruals prior to IPOs leads to higher underpricing and poorer long-term performance. Beatt and Welch (1996) analyzed the relationship between lawyers' compensation and IPO underpricing and revealed that more compensation to lawyers reduces IPO underpricing. Bhattacharya (2017) analyzed various risks faced by Small & Medium Enterprises IPO markets. Agency, market and execution risks are the three types of risks faced by these markets. The study suggests that proper regulations for increased participation of retail investors can help in reducing these risks. Investors interested in long-term SME IPO performance should choose the IPOs underwritten by reputed firms. Liu & Ritter (2011) found that IPOs are more underpriced when their underwriters have better quality and more industry expertise. Allen & Faulhaber (1989) stated that underpricing occurs at certain times in particular industries and underpricing can signal favorable prospects of the firms.

### Cluster 3: SME IPO & Corporate Governance

The third cluster focuses on analyzing the concept of corporate governance (CG) in the context of IPO issue. Darmadi & Gunawan (2012) studied the relationship between IPO underpricing, board structure and corporate ownership structure. The results indicate that board independence is associated with higher level of underpricing which is a sign of signaling theory. The study proved that board size and institutional ownership are two important governance mechanisms which help in mitigating information asymmetry between issuers and investors. Connelly et al. (2011) analyzed the concept of signaling theory in management research. The study explained the concepts of signaler, signal and receiver and highlighted various aspects of signaling theory in management research. As per the signaling theory, prestigious board structure guarantees the quality of issue and reduces the liability of market newness for investors. So, board structure and board prestige can affect investors' decision in case of IPO (Certo, 2003). Another signal for IPO investors can be multiple directorships by members of board of directors. When a particular board member serves multiple boards simultaneously, she/he is perceived by investors to have more expertise in managing different aspects of business. So, in that case companies can go for higher issue prices, which reduce IPO underpricing. Thorsell & Isaksson (2014) found evidence regarding negative impact of directorate interlocking or multiple directorships on IPO underpricing. Handa & Singh (2017) analyzed 404 Indian IPOs and found board size as a signaling indicator for Indian investors. The study found evidence about impact of larger board on higher underpricing. Arora & Singh (2019) found that underwriters' reputation positively influence IPO returns as reputed underwriters normally get associated with less riskier firms. The study also found negative interaction effect of underwriter's and auditor's reputation on initial IPO return. Reputed underwriter induces for appointment of reputed auditor due to involvement of their reputational capital. This leads to confidence in investors' mind which reduces IPO uncertainty and underpricing, thus leading to lower initial return. Chahine & Tohmé (2009) analyzed the impact of CEO duality on IPO underpricing and found that CEO duality leads to higher underpricing. But underpricing is lower in case of strategic shareholding by corporations and industry-related investors. Velamuri & Liu (2016) found that Chinese Small Medium Enterprises which have higher venture capital investment do not perform well in long-term, but this negative relation improves in the presence of reputed venture capital-underwriters. Certo et al. (2001) analyzed the impact of board size and board reputation on IPO underpricing and found that both the variables have negative impact on underpricing. Badru et al. (2019) studied 220 Malaysian IPOs over the period from 2005 to 2015 and concluded that presence of female director at the time of IPO issue has negative effect on IPO initial return as it is considered as a signal of good IPO quality. This reduces IPO underpricing thus leads to less initial return.

### Cluster 4: SME's Financial Performance

In the realm of SMEs, the link between capital structure and business performance has not received as much attention as it has in case of larger corporations. Addressing this gap, the study of Abor (2007) sought to explore how the choice of debt policy, known as capital structure, influences the financial performance of SMEs in Ghana and South Africa. Abor's research findings demonstrate that though capital structure indeed impacts financial performance in SMEs, it is not the sole determining factor. The results point to specific aspects of capital structure, particularly long-term and total debt ratios, as having a potentially adverse effect on the performance of SMEs. This suggests that agency-related issues may prompt SMEs to adopt an elevated debt policy, ultimately leading to diminished performance.

Barney (1991) proposed that enhancements in SME performance hinge on the availability and accessibility of resources that possess characteristics of being valuable, rare, inimitable, non-substitutable, and relatively immobile. Barber (1997) observe that test statistics derived from abnormal returns, calculated using a reference portfolio like a market index, may be flawed, with observed rejection rates exceeding expected theoretical rates. Barber identifies and rectifies three sources of this misalignment by matching sample SMEs with control SMEs of similar sizes and book-to-market ratios.

Fama (1993) identified five common risk factors influencing the returns of both stocks and bonds. These factors encompass three stock-market-related factors, including the overall market, firm size, and book-to-market equity, as well as two bond-market factors linked to maturity and default risks. These factors account for the shared variance in the returns of stocks and bonds. However, their applicability to emerging stock markets, especially in the context of SMEs, remains uncertain, and there is a scarcity of comparative research on asset pricing models tailored to specific markets. Additionally, insight from Fama (1998) align with the market efficiency hypothesis, suggesting that anomalies in financial markets may be chance occurrences, overreactions to information are as prevalent as underreactions, and the

post-event continuation of pre-event abnormal returns occurs as frequently as post-event reversals. Most importantly, in line with the market efficiency theory, apparent anomalies can often be attributed to methodological factors, and many long-term return anomalies tend to diminish when reasonable adjustments are made to the analysis techniques.

#### 4.1 Limitation of the study

This study is based on the articles available only on scopus database which results into only 55 number of articles being considered for analysis.

#### 4.2 Conclusion

Analyzing bibliometric data for a 30-year period (1992-2021) encompassing 55 articles available in the Scopus database, it is evident that there has been a noticeable uptick in scholarly interest in SME Exchange, particularly after 2016. Notably, Arora N. from Guru Nanak Dev University has emerged as a prominent contributor to this field. The leading journal in this area, *Global Business Review*, serves as the primary repository for literature related to SME Exchange, with a significant emphasis on studies in Asian context. This points out an existing research gap, indicating the need for further exploration of SME Exchange in alternative contexts. A co-occurrence analysis of the articles reveals that major research themes surrounding SME Exchange encompass financial markets, stock markets, under-pricing, and initial public offerings (IPOs). This paper provides valuable insights for researchers, regulators, and policymakers, offering a comprehensive overview of the current state of research in the SME Exchange domain while also identifying unexplored areas worthy of investigation.

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