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Investigating Trends and Future Research SMEs Performance: Perception from Analysis Bibliometrics

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Abstract. This research explores the scientific activities and general trends of SMEs performance. Bibliometrics analysis was used against 456 articles from 2000 to 2022 to see the general perspective of SMEs performance. The database used to collect data is Scopus with the search keyword "SMEs performance". Open Refine is used for data cleaning and harmonization. VOSviewer is then used for visualization and discussion. Based on the analysis results, 2020 is the year with the most publications. Ali Z. is the most prolific and influential writer in research. School of Business Management, Universiti Utara Malaysia, Malaysia, became affiliated with the most research. Malaysia is the country with the most research. The most active source is Sustainability (Switzerland). The Reference from Cenamor et al. in 2019, titled "How Entrepreneurial SMEs Compete via Digital Platforms: The Roles of Digital Platform Capability, Network Capability and Ambidexterity" is the reference with the most citations. Keywords SMEs performance is the most dominant keyword in SMEs research performance. This research provides detailed contributions and addresses gaps that future research must fill. This research also presents the analysis results for evaluating SME performance.

Keywords: *Bibliometric, Performance, SMEs, VOSviewer*

Abstrak. *Penelitian ini mengeksplorasi aktivitas ilmiah dan tren umum kinerja UKM. Analisis bibliometrik digunakan terhadap 456 artikel dari tahun 2000 hingga 2022 untuk melihat perspektif umum kinerja UKM. Basis data yang digunakan untuk mengumpulkan data adalah Scopus dengan kata kunci pencarian "kinerja UKM". Open Refine digunakan untuk pembersihan dan harmonisasi data. VOSviewer kemudian digunakan untuk visualisasi dan diskusi. Berdasarkan hasil analisis, tahun 2020 merupakan tahun dengan publikasi terbanyak. Ali Z. adalah penulis paling produktif dan berpengaruh dalam penelitian. School of Business Management, Universiti Utara Malaysia, Malaysia, berafiliasi dengan penelitian terbanyak. Malaysia adalah negara dengan penelitian terbanyak. Sumber yang paling aktif adalah Sustainability (Swiss). Referensi dari Cenamor dkk. pada tahun 2019, berjudul "How Entrepreneurial SMEs Compete via Digital Platforms: The Roles of Digital Platform Capability, Network Capability and Ambidexterity" merupakan referensi dengan sitasi terbanyak. Kata kunci: Kinerja UKM merupakan kata kunci yang paling dominan dalam penelitian kinerja UKM. Penelitian ini memberikan kontribusi yang detail dan menjawab kesenjangan yang perlu diisi oleh penelitian selanjutnya. Penelitian ini juga menyajikan hasil analisis untuk mengevaluasi kinerja UKM.*

Kata Kunci**:** Bibliometrik, Kinerja, UMKM, VOSviewer

INTRODUCTION

Small and medium-sized business (SMEs) performance correlates with national performance. SMEs can contribute significantly to job creation, value-added production, and increasing gross domestic product (GDP) (Ragazou et al., 2022). However, SMEs often experience difficulty achieving performance impact (Ireland et al., 2003). Therefore, to achieve better performance, SMEs need to take appropriate actions (Ketchen et al., 2007). As a result, research interest has emerged regarding SME performance since the mid-nineties (Lechner et al., 2006; Narver & Slater, 1990). However, this field hasn't seen much theoretical advancement (Watson et al., 1998). From another perspective, the variety of SMEs, business contexts, and particular research issues further complicate this field of study (Simpson et al., 2012).

SMEs are different from large companies. However, Burns, (2001) emphasizes that SMEs shouldn't be considered little replicas of major corporations. They show several fundamental differences, such as economies of scale, liability, and scope (Cardon & Stevens, 2004). Moreover, the main difference lies in defining the characteristics of SMEs as reactive mentality, limited resources, flexible structures, and informal strategies (Hudson et al., 2001; Qian & Li, 2003). As a result, SMEs typically have greater failure rates (Lu & Beamish, 2001). Nevertheless, SMEs significantly contribute to society's technological advancement and economic activity innovation (Radas & Božić, 2009).

Despite facing structural and resource limitations, small and medium-sized enterprises (SMEs) exhibit remarkable resilience in dynamic business environments. This ability to adapt arises from their flexible organizational structures and informal managerial approaches, which facilitate rapid decision-making and responsiveness to market fluctuations (Dan, 2023). Additionally, ownership structures that impose significant burdens on the owner or family often foster a strong personal commitment to managing the business and ensuring its continuity amid external pressures, such as economic crises or technological disruptions (Dinh et al., 2024; Okeke et al., 2021). Consequently, despite their smaller scale, SMEs can significantly contribute to maintaining socio-economic stability, especially in developing countries.

Furthermore, SMEs serve as incubators for innovation, addressing local needs and often pioneering the development of contextual and adaptive products or services. This versatility is reflected in the ability of SMEs to create innovative solutions tailored to local market characteristics and their limited resources (Yandarbieva et al., 2023). In many cases, limitations actually encourage creativity, which then results in process and product innovations that have a direct impact on increasing efficiency and customer satisfaction. Therefore, we cannot underestimate the role of SMEs in driving local economic growth and creating jobs. In today's digital economy, SMEs play a significant role in propelling the adoption of community-based technology (Riswanto et al., 2020).

However, we need holistic and sustainable policy support to maximize the potential of SMEs in economic development. Government intervention in the form of access to financing, managerial training, and information technology infrastructure is crucial in reducing business failure rates and increasing SME competitiveness (Navarathne, 2023). Furthermore, we must strengthen collaboration between the public, private, and academic sectors to foster an innovation ecosystem that supports SME development. Thus, SMEs will not only serve as complementary economic actors but also as strategic partners in promoting inclusive and sustainable economic growth.

Most earlier research evaluated SMEs performance empirically at the microeconomic level. It describes how SMEs performance relates to their internal processes, environment, or internal and external factors (Cicea et al., 2019). Although prior research has been helpful for SMEs in determining the best ways to increase performance in the setting of restricted resources,

prior research has not significantly contributed to a thorough understanding of the performance of the SMEs sector. In addition, performance is a subject that is open to wide variability (Folan et al., 2007) . Thus, it can be assumed that SMEs need to understand their complex performance better.

Previous research has used bibliometric analysis to map knowledge about SMEs performance (Pratama et al., 2021). However, previous bibliometric research was limited to the geographical scope of the study object. Even though SMEs are the backbone of the economy in almost all countries. According to Chiao et al. (2006), SMEs comprise more than 95% of all businesses in several nations. Thus, the results of a comprehensive study of SME performance can be used to increase income, create jobs, and increase export growth and productivity (N. H. Ahmad & Seet, 2009; Doh & Kim, 2014). In addition, better analysis results can be used to evaluate SMEs to improve and increase their performance (Zayyad et al., 2021).

Therefore, this research seeks to enhance previous research. This research uses bibliometric analysis to produce a study of SMEs performance. This research explores the scientific activities and general trends of SMEs performance with a holistic approach from 2000 to 2022. This research addresses gaps in the literature by identifying significant concerns and offers a detailed contribution to understanding it. This research handles these inquiries: 1. What are the current and historical publication trends on the subject of SMEs performance?; 2. Who are the most prolific authors in this area, and what are their research's key themes and subjects?; 3.What institutions are the most influential in the field of SMEs performance, and how do they contribute to the development of the field?; 4. Which countries are most active in the field of SMEs performance, and how does this vary across regions and periods?; 5. Which sources are most active in the field of SMEs performance, and how do they contribute to the development of the field?; 6. What are the most cited documents in the field of SMEs performance, and what are the main themes and topics it discusses?; 7. What are the most common keywords and themes in the literature on SMEs performance, and how has it evolved?.

This research is organized into six sections designed to address the research questions, which are as follows: (1) background, objectives, and research questions; (2) literature review; (3) research method; (4) results; (5) discussion; and (6) conclusions.

LITERATURE REVIEW

Research on the performance of Small and Medium Enterprises (SMEs) has experienced significant development in the last two decades, along with increasing awareness of the contribution of SMEs to national and global economic structures. SMEs are considered catalysts in job creation and the spread of economic activity to remote areas and as motors of local innovation based on limited but creative resources (Khellil & Loucif, 2024). Therefore, the study of SME performance has become a topic that is not only academically relevant but also strategic from a public policy perspective. SME performance itself cannot be assessed solely based on financial aspects such as profit and revenue but also includes non-financial aspects such as customer satisfaction, business reputation, product and process innovation, and resilience to environmental change (Manuain et al., 2022; Nguyen et al., 2022).

A growing body of literature indicates that the determinants of SME performance are multidimensional, involving interactions between internal and external factors. Internal factors include the entrepreneurial characteristics of the owner, organizational structure, technology adoption, and innovative capacity, while external factors include government policies, market dynamics, regulations, and access to financing and business networks (Nigatu et al., 2022; Yazeer & Sachithra, 2024). In the context of developing countries, barriers to accessing formal financing remain a major issue that limits the scale and operational efficiency of SMEs, thus

affecting their overall competitiveness ((COSMA-GULER) & BADULESCU, 2023; Ermawati, 2025). On the other hand, digitalization and technological transformation offer strategic opportunities for SMEs to increase efficiency, reach wider markets, and develop new, more adaptive business models (Cheng et al., 2024; Teng et al., 2022).

To understand the dynamics of research on SME performance, bibliometric approaches have become increasingly popular in scientific literature studies. Bibliometrics allows researchers to quantitatively map knowledge by analyzing publication trends, scientific productivity, collaborative relationships, the influence of sources (journals, authors), and the main themes that dominate scientific discourse (Cicea et al., 2022; Teng et al., 2022). Through this approach, several bibliometric studies have found that SME research has transformed from a conventional, financial-based approach to more contemporary topics, such as digital entrepreneurship, sustainability, the circular economy, and adaptation to global crises like the COVID-19 pandemic (Akhmetgareeva et al., 2025; Kharaishvili & Lobzhanidze, 2023). Furthermore, bibliometrics can also identify underexplored areas, such as the link between gender in SME leadership and performance, the role of social innovation in the SME context, and the integration of SMEs into the global supply chain ecosystem.

In addition, bibliometric analysis can also reveal geographic disparities in the distribution of SME research. Most scientific publications are still dominated by developed countries, while the context of SMEs in developing countries—which have their own unique challenges and characteristics—remains relatively under-recognized in the international literature (Maphumulo et al., 2023; Matsongoni & Mutambara, 2025). Yet, understanding the specific conditions of SMEs in developing countries is crucial for designing targeted policies and intervention strategies. Therefore, future studies need to focus not only on quantifying performance but also on a contextual approach that considers social, cultural, and institutional aspects.

SMEs are defined differently worldwide depending on their demands and nature (Kureshi et al., 2010). According to Lichtenthaler (2016), SMEs are generally defined as reactive, flexible, and innovative organizations. Performance is the ability of an individual, group, or organization to carry out a sequence of tasks to achieve a given goal (Laitinen, 2002). Performance is also defined as SMEs capacity to attain objectives through their actions and results when performing activities (Ramdan et al., 2022). According to Porter (1990), performance is the value delivered to clients, business owners, and senior managers. If an SMEs performs well, the SMEs can continue to survive, gain profits, and develop.

Based on Anwar & Shah (2020)financial and non-financial components make up the performance of SMEs. Profits, sales, return on investment, and other measures are among the many that make up financial performance. Sustainable company practices, individual participation and autonomy, and work-life balance are among the non-financial criteria for SMEs success. Besides that, seen from the Resource-based Theory View (RBV) perspective, performance is a resource that forms strengths and weaknesses and becomes the boundaries of an organization or company (Wernerfelt, 1984) (J. Barney, 1991) implies that creating valuable, uncommon, hard-to-copy resources is the foundation for competitive advantage (Teece et al., 1997). The RBV describes SMEs regarding resources (J. B. Barney, 2001). Thus, the RBV view provides a theoretical foundation for performance. RBV is very relevant for small companies with a high mortality rate compared to large companies. In addition, contingency theory is widely used in research to measure performance and effectiveness. According to Misoska et al. (2016) studying SMEs performance is important for several reasons, including the following: (1) SMEs have a big impact on GDP and unemployment; (2) the interdependence of national economies and the difficulty of recovering from the financial crisis have forced SMEs to play a much bigger role in the

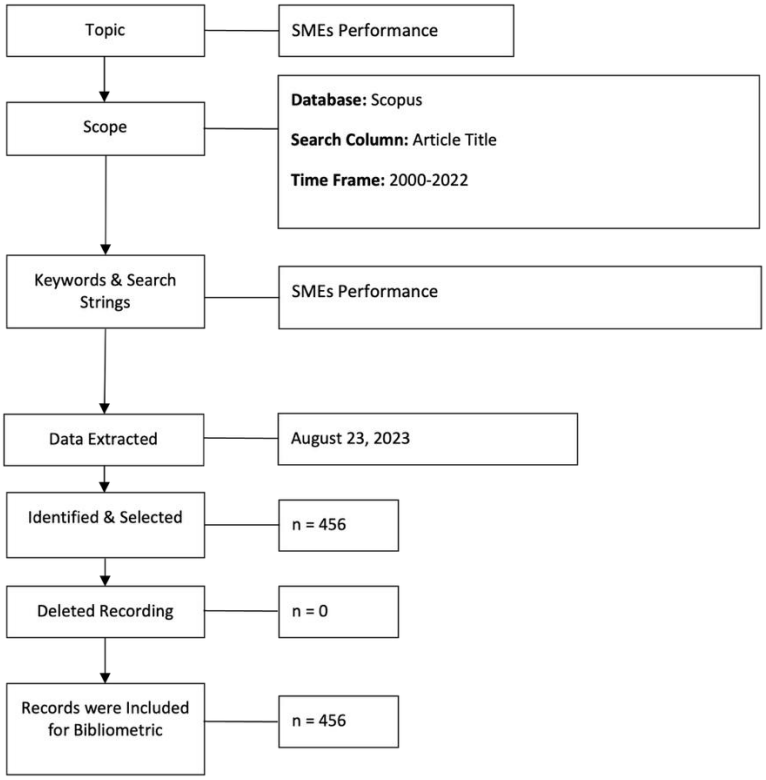
current environment of rapid changes in the global economy; and (3) SMEs are what make an economy competitive.

RESEARCH METHODS

In recent years, bibliometrics has been extensively employed to assess the features of diverse academic achievements and map the knowledge spectrum (Cheng et al., 2024; Yang et al., 2019). Bibliometrics is a crucial and useful technique for analyzing and extracting quantitative and qualitative data from a publication (Broadus, 1987; Fairthorne, 1969). According to Donthu et al. (2021)using bibliometrics in social science research is not a trend but rather an example of how it may be used to manage duplicate scientific data and create high-impact research. Bibliometrics aids in finding trends in published research documents that categorize blind spots and hot spots and provide a more thorough knowledge of such publications (Gaur & Kumar, 2017). Bibliometrics can handle large data volumes through unbiased analysis (Ellegaard, 2018). Bibliometrics also helps researchers avoid errors due to bias in literature review and viewing research developments (Fabregat-Aibar et al., 2019). Therefore, this study uses bibliometric analysis to see general perspectives about SMEs performance.

Search Strategy

Four steps are used in this study to make sure that the data search results accurately reflect the importance of the subject under investigation: identifying, screening, determining eligibility, and including, which is suggested by Moher et al. (2010). The following procedures for determining research document eligibility, screening, and inclusion according to the guidelines defragment the literature:



Source: Developed for Research, 2023

Figure 1. Search Strategy Flow Diagram

The first search strategy carried out is identification to narrow the scope of search efforts based on criteria. The keyword used is SMEs performance. Ultimately, 456 total publications met the established criteria. After that, the gathered database was further improved at the filtering stage by deleting duplicate articles. No duplicates were identified, so the total number of publications remained at 456. The author then reviewed the publication's title and abstract to evaluate whether the article was appropriate for the research topic. Finally, the final sample of this study was 456 publications.

Data Collection

To guarantee the integrity and accuracy of the metadata and the capability of comparison, a data search for the previous 22 years, or from 2000 to 2022, was conducted (Palácios et al., 2021). The year 2000 is a relevant starting point because it marked the beginning of the era of digital globalization and economic liberalization that had a significant impact on the global entrepreneurial landscape, including the transformation of the role of SMEs in the knowledge-based economy (Massa et al., 2023; Qalati et al., 2025). The choice of the 2022 deadline provides enough comprehensive scope to evaluate long-term trends and the impact of various contemporary dynamics, such as the 2008 global financial crisis, the industrial revolution 4.0, and the COVID-19 pandemic, which significantly changed the operational paradigm and resilience of SMEs (Munyemana et al., 2024; H. T. Nguyen et al., 2024). We collected data for approximately one week to ensure that the data we obtained was valid data from Scopus.

Additionally, bibliometric analysis is performed on scientific articles exported from the Scopus database to provide statistical and factual information. The Scopus database was chosen because it has a good reputation for abstracts and citations. Scopus has become a source for well-written, trustworthy, peer-reviewed, and sophisticated research papers that achieve good citation rates. Scopus can provide broader content coverage, author and institution information availability, better interfaces, impactful indicators, and less vulnerability to manipulation (Pranckute, 2021).

Data Cleaning and Harmonization

The exported Scopus data lacks certain necessary information. Thus, it must be filled for the data to be reliable and harmonious. In addition, there is a double meaning of the search term. In response, the title and abstract are read carefully to ensure the data is solid and relevant. Open Refine software was used to clean and harmonize the data to ensure suitability. Then, clean data is exported and published to VOSviewer for visualization and discussion.

Data Analysis

In bibliometrics, a number of published articles are involved in obtaining information and topic developments. A knowledge map is built through a network of authors, institutions, countries, sources, most cited documents, and keywords through co-authorship, co-occurrence, and citation analysis. This analysis method is crucial for highlighting the research topic's bibliometric foundation and conceptual framework (Baker et al., 2019). Each cluster then undergoes content analysis by evaluating the ideas conveyed.

Software

The software used in this research is VOSviewer. VOSviewer is a program used to see and explore knowledge maps made from network data (Van Eck & Waltman, 2016). VOSviewer

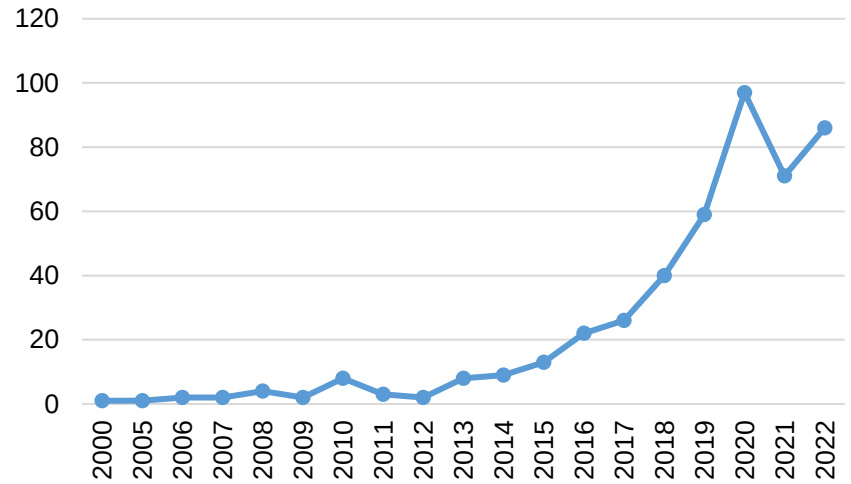
was chosen because it effectively maps large databases that simplify complex networks into understandable ideas (Van Eck & Waltman, 2010). Other helpful capabilities of VOSviewer include overlay and density visualization and the capability to alter the map's general appearance without affecting the outcomes. Additionally, Open Refine is used for changing and cleaning data. This research classifies nouns as singular or plural to convert them into the correct form. Apart from that, not just words combined into one terminology but also observations with the same meaning. This cleaning procedure has undergone some necessary manual checks and assessments. The information was sorted and removed using the VOSviewer thesaurus.

RESULTS AND DISCUSSIONS

This research analyses 456 documents, which are published articles. Following results analysis bibliometrics in research SMEs performance:

Publication Trends

The most popular measurement of publication trends is the number of research publications per year. Following are the annual expansions in scientific production of SMEs performance research:



Source: Processed Data, 2023

Figure 2. Annual Number of Publications

The results show a clear and positive trend in publications SMEs performance based on the number of publications per year. The following is a breakdown of the number of annual publications:

Table 1. Year of Publication

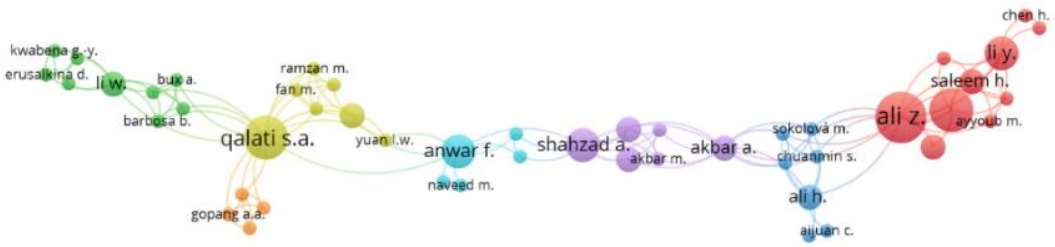
Year	Total Publication
2000	1
2005	1
2006	2
2007	2
2008	4
2009	2

2010	8
2011	3
2012	2
2013	8
2014	9
2015	13
2016	22
2017	26
2018	40
2019	59
2020	97
2021	71
2022	86
Total	**456**

Source: Processed Data, 2023

Publication by Author

The author's analysis helps evaluate outstanding writers based on research contributions. Authorship analysis illustrates that the author has conducted more research on SMEs performance (Ferreira et al., 2020). The following is a visualization of the author's analysis:



Source: VOSviewer, 2023

Figure 3. Co-authorship Network Visualization Map by Author

The author's analysis findings can guide future studies to choose authors who fit the criteria for SMEs performance research. The authors were then divided into the most prolific authors, who carried out the most research on the performance of SMEs, and they are as follows:

Table 2. The Most Prolific Authors

Author	Clusters	Links	Total Link Strength	Doc	Citations	Avg. Pub. Year	Avg. Citations
Ali Z.	1	13	19	5	171	2020.20	34.20
Mehreen A.	1	7	13	4	171	2019.75	42.75
Qalati SA	4	16	17	4	156	2021.00	39.00
Li Y.	1	8	11	3	71	2020.67	23.67
Shahzad A.	5	8	10	3	48	2020.67	16.00
Anwar F.	6	8	8	3	111	2019.33	37.00
Li W.	2	9	9	2	24	2020.50	12.00
Ali H.	3	8	8	2	16	2021.00	8.00
Gongbing B.	1	2	4	2	101	2019.50	50.50
Saleem H.	1	6	9	2	70	2020.00	35.00

Source: Processed Data, 2023

From the results analysis, it appears that every writer has different tendencies. There are indexed authors as writer sole and author who did authorship together. Density writer enough big show quantity more research lots compared to with more density small. The following are authorship trends in SMEs performance research:

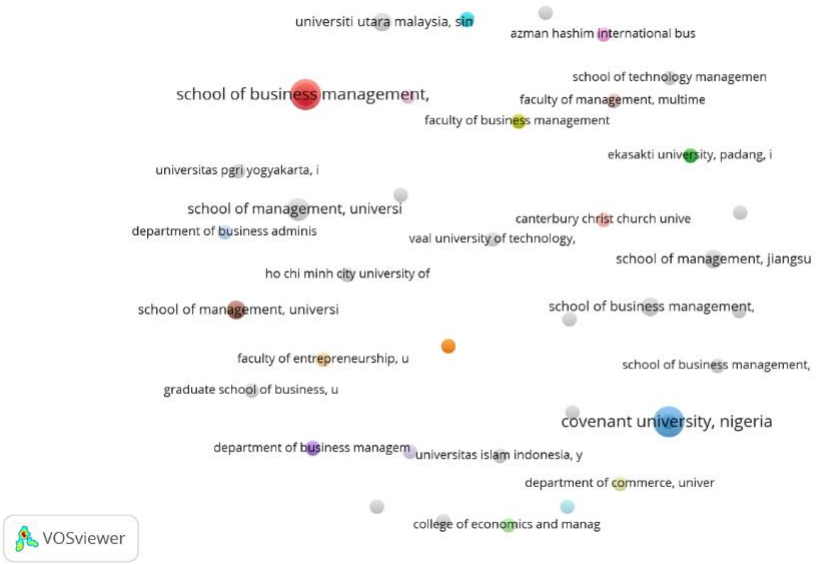
Table 3. Number of Authors on the Document

Number of Authors	Number of Publications	Percentage(%)
1	50	10.96
2	122	26.75
3	147	32.24
4	76	16.67
5	33	7.24
6	16	3.51
7	6	1.32
8	3	0.66
10	2	0.44
11	1	0.22
Total	**456**	**100**

Source: Processed Data, 2023

Publication by Institution

This study analyzed the author's affiliations to identify the institutions that contributed the most. The following is a visualization of affiliate analysis:



Source: VOSViewer, 2023

Figure 4. Affiliate Network Visualization Map

Through affiliation analysis, the geographical coverage of the journal was identified, and mapping collaborations, both international and institutional. The analysis findings then determined the ten affiliations with the best SMEs research performance, and they are as follows:

Table 4. The Most Productive Affiliations

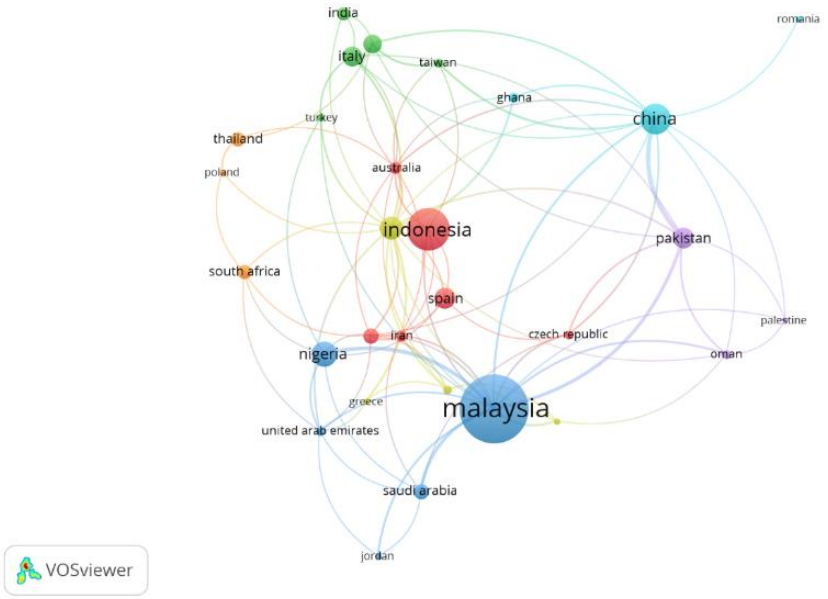
Affiliations	Clusters	Links	Doc	Citations	Avg. Pub. Year	Avg. Citations
School of Business Management, Universiti Utara Malaysia, Malaysia	1	2	6	38	2019.00	6.33
Covenant University, Nigeria	3	1	6	58	2018.00	9.67
School of Management, Universiti Sains Malaysia, Penang, Malaysia	31	0	4	138	2019.50	34.50
Universiti Utara Malaysia, Malaysia	1	1	4		2018.00	
Universiti Utara Malaysia, Sintok, Malaysia	36	0	3	110	2020.33	36.67
School of Management, University of Science and Technology of China, Hefei, China	8	1	3	135	2019.67	45.00
School of Management, Jiangsu University, Zhenjiang, Jiangsu, China	30	0	3	127	2021.33	42.33
Department of Business Management, National Taipei University of Technology, Taipei, 10608, Taiwan	5	1	2	10	2021.50	5.00

Ekasakti University, Padang, Indonesia	2	1	2	6	2021.00	3.00
Azman Hashim International Business School, Univ Technology Malaysia, Kuala Lumpur, Malaysia	9	0	2	51	2019.50	25.50

Source: Processed Data, 2023

Publication by Author's Country of Origin

The topic of SMEs performance has brought together researchers across countries to collaborate. Every link between two frame nodes from different countries shows cooperation. Frame with the same colour used for classifying h-index. Following visualization country analysis:



Source: VOSviewer. 2023

Figure 5. Co-authorship Network Visualization Map by Country

The results of the country analysis show fairly distributed collaboration. The more critical a country is, the larger the labels and frames in the visualization. The size of each frame represents the number of studies the author has written in that nation. Additionally, every frame relationship shows co-authorship between organizations in these countries. Based on the analysis findings, the ten nations having the greatest amounts of SME performance research are as follows:

Table 5. Top 10 Most Contributing Countries

Country	Clusters	Links	Total Link Strength	Doc	Citations	Avg. Pub. Year	Avg. Citations
Malaysia	3	15	47	105	1195	2018.85	11.38
Indonesia	1	5	7	58	399	2019.71	6.88
China	6	13	32	39	1046	2020.54	26.82
Nigeria	3	7	16	30	407	2019.10	13.57

United Kingdom	4	17	31	28	702	2018.64	25.07
Pakistan	5	8	28	24	571	2019.58	23.79
Spain	1	5	6	24	537	2018.50	22.38
Italy	2	7	10	22	519	2017.50	23.59
Vietnam	2	7	10	21	210	2020.24	10.00
United States	1	10	13	17	378	2015.24	22.24

Source: Processed Data, 2023

Publication Based on Publication Outlet

Source analysis publication is used to measure the magnitude of the publisher's influence on the research theme. Source analysis is also important to place research results in the best publishers. The following is a visualization of the analysis of publication sources:

Source: VOSviewer, 2023

Figure 6. Visualization of the Most Active Sources

Analysis results source publication then grouped into ten sources with study SMEs performance the most, namely:

Table 6. 10 Names of the Most Active Sources

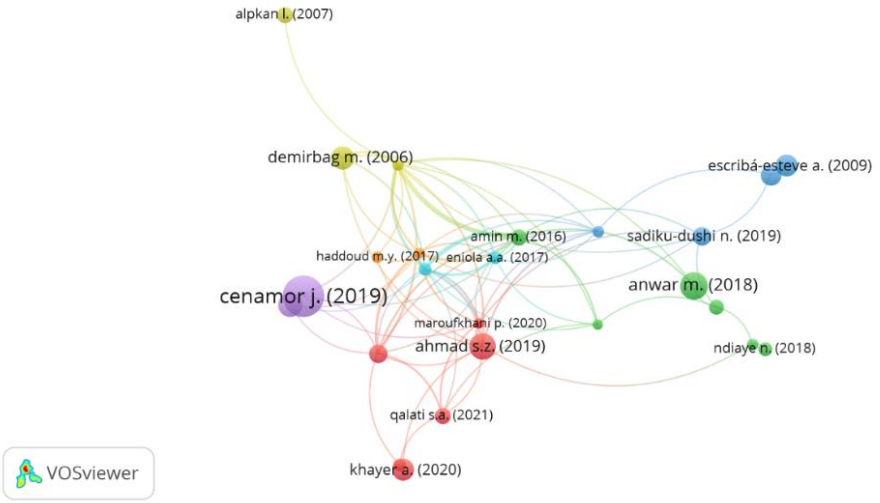
Source	Clusters	Doc	Citations	Avg. Pub. Year	Avg. Citations
Sustainability (Switzerland)	20	17	199	2021.18	11.71
International Journal of Supply Chain Management	12	11	44	2018.45	4.00
International Journal of Productivity and Performance Management	11	8	175	2018.00	21.88

International Journal of Entrepreneurship	9	8	47	2018.62	5.88
Journal of Business Research	14	7	482	2021.00	68.86
Management Science Letter	18	6	56	2019.17	9.33
Uncertain Supply Chain Management	22	6	16	2021.67	2.67
Journal of Asian Finance, Economics and Business	13	6	73	2020.33	12.17
Journal of Small Business and Enterprise Development	16	5	183	2017.60	36.60
Academy of Entrepreneurship Journal	1	5	29	2019.20	5.20

Source: Processed Data, 2023

Most Cited Documents

The citation refers to an author's acknowledgement of previously published work. Authors explicitly acknowledge intellectual debt through quotations (Ferreira et al., 2014). This research analyses the most cited documents to identify works that have had a significant impact (Reis et al., 2019). The most frequently mentioned documents are represented visually here:



Source: VOSviewer, 2023

Figure 7. Visualization of the Most Documents Quoted

Using a reference list of 456 articles, here are the ten documents with the most quoted:

Table 7. 10 Most Cited Documents

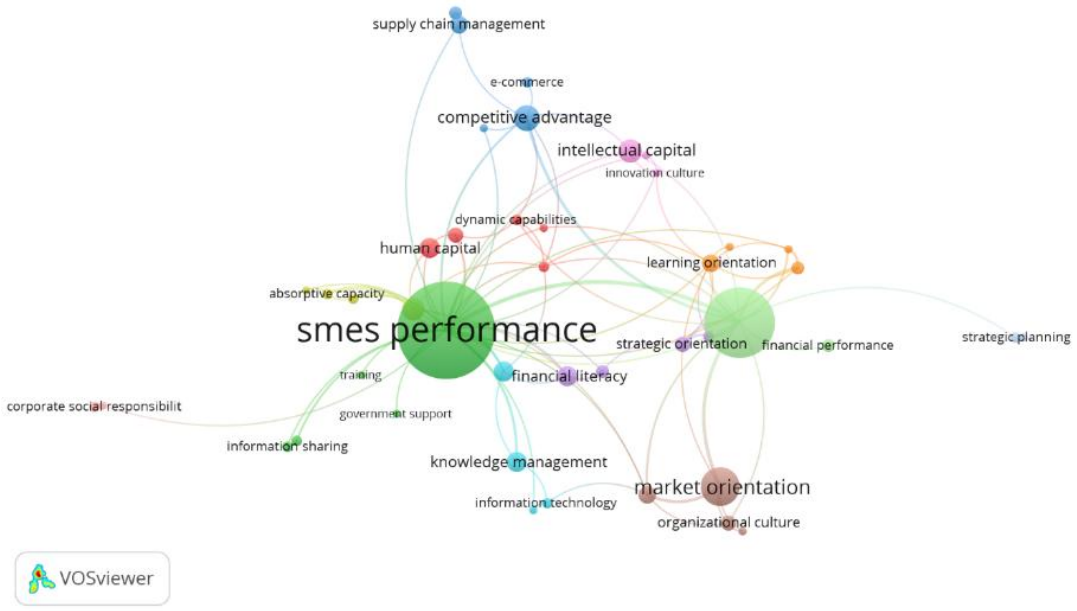
Authors	Title	Citation	Norm. Citations	Pub. Year
Cenamor et al. (2019)	How Entrepreneurial SMEs Compete via Digital Platforms: The Roles of Digital Platform Capability, Network Capability and Ambidexterity	265	12.10	2019

Anwar (2018)	Business Model Innovation and SMEs Performance-Does Competitive Advantages Mediate?	162	9.73	2018
S. Z. Ahmad et al. (2019)	Social Media Adoption and Its Impact on Firm Performance: The Case of the UAE	149	6.80	2019
Guo et al. (2020)	The Digitization and Public Crisis Responses of Small and Medium Enterprises: Implications from a COVID-19 Survey	1 37	9.13	20 20
Demirbag et al. (2006)	TQM and Market Orientation's Impact on SMEs' Performance	129	1.37	2006
Escribá-Esteve et al. (2009)	The Influence of Top Management Teams in the Strategic Orientation and Performance of Small and Medium-Sized Enterprises	118	1.87	2009
Khayer et al. (2020)	Cloud Computing Adoption and Its Impact on SMEs' Performance for Cloud Supported Operations: A Dual-stage Analytical Approach	118	7.86	2020
De Massis et al. (2015)	The Impact of Family Involvement on SMEs' Performance: Theory and Evidence	114	4.60	2015
Sadiku-Dushi et al. (2019)	Entrepreneurial Marketing Dimensions and SMEs Performance	98	4.48	2019
Adam & Alarifi (2021)	Innovation Practices for Survival of Small and Medium Enterprises (SMEs) in the COVID-19 Times: The Role of External Support	97	8.20	2021

Source: Processed Data, 2023

Top Keywords

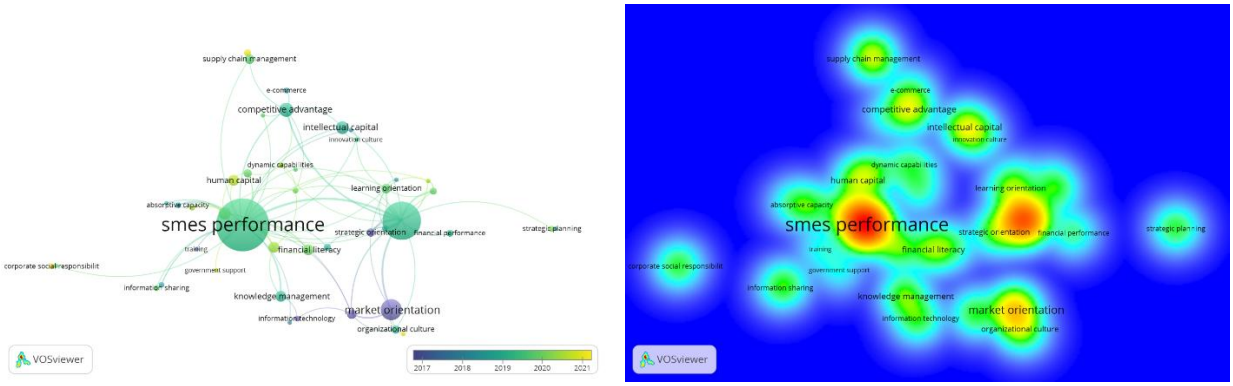
A strategy that looks into the actual content of documents is co-occurrence. Co-occurrence can be used to plot the strength of connotations in keywords in textual data. Co-occurrence can map literature from keyword associations published by research articles (Donthu et al., 2020; Emich et al., 2020). Keywords that recur frequently reflect conceptual or semantic groups of diverse themes or subtopics that research constituents have considered (Bornmann et al., 2018; Cobo et al., 2011). Nodes on clusters can be used to evaluate growth by gauging extension throughout successive subperiods. This research uses co-occurrence networks to analyze author keywords (Su & Lee, 2010). Here's a visualization of the keyword network:



Source: VOSviewer, 2023

Figure 8. Network Visualization of Author's Keywords

For complete material for future research, the following are overlays visualization in the study SMEs performance:



Source: VOSviewer, 2023

Figure 9. Overlay (Left) Density (Right) Visualization of the Author's Keywords

Then, the keywords are divided into ten main groups, including:

Table 8. Top Keywords from Authors

Keywords	Clusters	Links	Total Link Strength	Occurrences	Avg. Pub. Year.
SMEs Performance	2	29	46	57	2019.39

Entrepreneurial Orientation	11	17	37	38	2019.18
Market Orientation	8	5	12	18	2016.11
Competitive Advantage	3	8	12	11	2019.00
Intellectual Capital	9	5	5	10	2018.90
Innovation Capability	4	8	14	9	2020.11
Human Capital	1	3	3	8	2020.50
Knowledge Management	6	3	5	8	2019.00
Total Quality Management	8	6	10	7	2015.86
Supply Chain Management	3	3	3	7	2019.71

Source: Processed Data, 2023

Discussion

Every year, a different number of articles on the topic of SMEs performance are published. The momentum began in 2013 and gradually grew as the quantity of publications increased. With 97 articles, 2020 had the most publications, significantly more than the previous three years, with a combined total of 26 publications. This finding shows excellent research engagement, which is anticipated to continue in the following years. Apart from that, there was a decrease in publications in 2021. However, in 2022, there was another increase. 2022 has a total of 86 publications. This increasing trend is due to the importance of performance for SMEs. This increase in studies coincided with the COVID-19 pandemic, which has implications for various areas of life. In fact, the COVID-19 pandemic has significantly impacted SMEs, given that they don't have as many resources as big businesses (Juergensen et al., 2020; Martin et al., 2019). However, SMEs are more adaptive and flexible due to their modest size and propensity to be privately owned (Narula, 2004). But overall, SMEs are typically less resilient than large businesses, so they take longer to resume business operations after a crisis. Thus, in 2021, publications experienced a decline but increased again in 2022. By looking at the development of the number of publications per year, it is estimated that SMEs research performance will continue to improve and develop.

In SMEs performance research, every researcher has different tendencies, which is obvious. A few of them are listed as single authors. Some authors collaborate when they write. Dominantly, 32.24% of the authors in SMEs performance research are three people. Furthermore, approximately 10.96% of authors conduct their research independently. A relatively large author density indicates a greater quantity of research compared to a smaller density. The results of the author's analysis can direct future efforts in selecting authors who are suitable for this field. Based on the results, some highly productive and influential authors include Ali Z., Mehreen A., Qalati S.A., Li Y., Shahzad A., Anwar F., Li W., Ali H., Gongbing B., and Saleem H. We can assume that these ten authors are the most productive and influential. However, future researchers are expected to collaborate more because collaborative networks are the hallmark of modern academic research (Fonseca et al., 2016)Collaborative networks are commonplace as theoretical and methodological complexity in research increases (Acedo et al., 2006).

The School of Business Management, Universiti Utara Malaysia, Malaysia, is the most productive affiliate in SMEs performance research. This affiliate with the highest output is located in the nation with the highest level of research activity in the performance of SMEs. Apart from that, there are also other affiliates such as Covenant University, Nigeria; School of Management, Universiti Sains Malaysia, Penang, Malaysia; Universiti Utara Malaysia, Malaysia; Universiti Utara Malaysia, Sintok, Malaysia; School of Management, University of Science and Technology of China, Hefei, China; School of Management, Jiangsu University, Zhenjiang, Jiangsu, China; Department of Business Management, National Taipei University of Technology, Taipei, 10608, Taiwan; and Ekasakti University, Padang, Indonesia. If analysed further, affiliates in Malaysia

dominate the study of SMEs performance. Additionally, some affiliates do not appear to collaborate on research, so there is a tendency for research only to be carried out by authors in one affiliation. Future research can enhance trend studies related to work. Authorship, along with collaboration with other affiliates, can also contribute. This collaboration will be beneficial for obtaining diverse perspectives in the study of SMEs' performance.

Besides that, Malaysia is the country that is most active in the field study of SMEs performance. Malaysia has produced 105 documents and 1195 citations during the observation period. Malaysia is a developing country in Asia. Consequently, it may be inferred that emerging nations have shown more productivity than wealthy nations, while having less resources for research investment. Meanwhile, other countries are participating to contribute to knowledge of SMEs performance, such as Indonesia, China, Nigeria, United Kingdom, Pakistan, Spain, Italy, Vietnam, and the United States. If analyzed further, Indonesia is the second most productive country in research on SMEs performance but receives fewer citations. Therefore, further observation is needed to determine the factors that prevent Indonesia from achieving a top-two citation ranking, which is disproportionate to the number of documents produced. Furthermore, it would be encouraging to see more research from developing countries and collaboration between countries.

The most active soure in the field of SMEs performance are Sustainability (Switzerland), which produced 17 documents on SMEs performance with a quote of as many as 199. Sustainability (Switzerland) is an open-access international and interdisciplinary scientific journal on environmental, cultural, economic, and social sustainability. Sustainability (Switzerland) publishes reviews, short notes, and regular research papers, and there is no limit on the length of documents. Future research could consider Sustainability (Switzerland) as a publication site. Apart from that, there are other productive sources produce study SMEs performance such as the International Journal of Supply Chain Management, International Journal of Productivity and Performance Management, International Journal of Entrepreneurship, Journal of Business Research, Management Science Letter, Uncertain Supply Chain Management, Journal of Asian Finance, Economics and Business, Journal of Small Business and Enterprise Development, and Academy of Entrepreneurship Journal. These ten sources can be considered in placing research results in the best publisher.

As the output of research, the document with the most references in the field of SMEs performance was written by Cenamor et al. in 2019 with the title " How Entrepreneurial SMEs Compete via Digital Platforms: The Roles of Digital Platform Capability, Network Capability and Ambidexterity". The document received a total of 265 citations. The document investigates improving SME performance through digital platforms. The results of this document research state that digital platform capabilities indirectly positively influence SME performance through network capabilities. A digital platform's capabilities can help SMEs perform better by matching capabilities with direction. In addition, there are other documents, such as those written by S. Z. Ahmad et al. (2019), Guo et al. (2020), Demirbag et al. (2006), Escribá-Esteve et al. (2009), Khayer et al. (2020), De Massis et al. (2015), Sadiku-Dushi et al. (2019), and Adam & Alarifi (2021). Analyzing those studies can facilitate the identification of reference sources to consider in policy formulation. From the most cited documents analysis, the most cited studies are clinical studies, case series, and case reports. The study speculates that English-speaking countries may gain more citations. Future studies can better understand the models and theories applied to meet research needs. Future researchers may also try different methodologies.

Additionally, keywords within a cluster can be assumed to reflect the same material. Keywords in the study SMEs performance distributed differently among clusters. Red node (cluster 1) focuses on human capital flow, dynamic capability, and so on. This flow indicates that

research examines the aspects companies must have to overcome a dynamic environment. Real resources are essential for the growth of SMEs. The success of this type of company can also be determined and facilitated by intangible resources like human resource capabilities and skills (Rodrigues et al., 2021) Therefore, dynamic capability provides a suitable theoretical framework for empirical studies regarding the factors driving SMEs survival. Dynamic capabilities theory developed from Resource-based Theory View (RBV) to explain performance. In the green node (cluster 2), keywords such as SMEs are found for performance, strategic orientation, and so on. According to (Hakala, 2011) strategic orientation is seen as the principle that underlies the activities and behaviour of SMEs to achieve superior performance. Strategic orientation is generally defined as a strategic tendency that characterizes the activities and conduct of SMEs and is meant to aid SMEs in achieving a lasting competitive advantage and performance improvement. The blue node also yielded further study avenues (cluster 3), such as competitive advantage, knowledge management, and so on. Knowledge management is an integrated, systematic method to coordinate organizational activities, pinpoint cognitive requirements, transfer, store, share, and use knowledge about culture and strategy (Byukusenge & Munene, 2017) According to scientific studies, knowledge management is vital in how well SMEs perform since it is connected to various resources and may help decision-makers in various ways (Carneiro, 2000) Knowledge management is a tool that can boost competition and sustainable competitiveness. Apart from that, other research directions were found. As shown in the visualization, there are 11 clusters. Each cluster's nodes and text show how frequently the terms in each other's sentences occur.

In the keyword visualization, there is also an overlay visualization that depicts research patterns that require further research. The dark colour of the nodes indicates research that has been conducted in the past of the specified period. A yellow research stream shows that its keyword items are relatively new. Therefore, further research is expected to study more carry-on related to corporate social responsibility, financial literacy, absorptive capacity, human capital, and so on. These aspects still seem to have research gaps. In addition, articles discussing SMEs performance have appeared in the research world and provide high-impact factors. The amount of citations an article receives throughout the chosen period can be used to calculate its impact factor—the impact factor increases with the amount of citations. Based on the results analysis, it can observe that the article written by Cenamor et al. in 2019 with the title "How Entrepreneurial SMEs Compete via Digital Platforms: The Roles of Digital Platform Capability, Network Capability and Ambidexterity" has 265 quotes with the norm. citation as much 12.10. Apart from that, the article by Anwar in 2018 titled "Business Model Innovation and SMEs Performance-Does Competitive Advantages Mediate?" has 162 quotes with the norm. citation as much 9.73. Norm. citation shows the normalised number of citations a document receives. Therefore, the academic world needs to provide literature that continues to develop. Apart from that, each keyword point in density visualization is understood to have a colour that denotes density. The saturation level indicated by the number of keywords is highlighted in yellow, indicating that the area has undergone extensive investigation and indexing. Conversely, the fewer surrounding keywords and the smaller the weight of neighbouring keywords, the closer the dot becomes blue. Increasing nodes near the dark colour show that the topic has not yet been researched. This density visualization can identify the areas of study that are frequently conducted and those that are not. Research that is still rarely conducted can be used as a gap for further research. From the density analysis, it is clear that there is a need to broaden the scope of research on SMEs performance.

Limitations

This research has limitations because it only relies on Scopus as a database to collect data from 2000 to 2022. There is also the option to search for additional articles using different keywords, even though the chosen keywords are considered the most pertinent to cover articles linked to SMEs performance.

CONCLUSION

This study explores the scientific activities and general trends of SME performance. Based on the analysis of the research questions in this study, first, we found a positive trend in publications on SME performance. Second, we found several productive and influential authors such as Ali Z., Mehreen A., Qalati S.A., Li Y., Shahzad A., Anwar F., Li W., Ali H., Gongbing B., and Saleem H. Third, we found that the School of Business Management at Universiti Utara Malaysia is the most productive affiliate in SME performance research. Fourth, the study results found that Malaysia is the most active country in the field of SME performance studies. The fifth most active source in the field is Sustainability (Switzerland), which has produced 17 papers on SME performance with 199 citations. Sixth, this study found that the most referenced document in the field is Cenamor et al.'s 2019 study on "How Entrepreneurial SMEs Compete via Digital Platforms: The Roles of Digital Platform Capability, Network Capability, and Ambidexterity" which received 265 citations. We also note that while keywords within a cluster may reflect the same material, the distribution of SMEs' performance varies among clusters.

This research provides implications in the form of theoretical and practical contributions. Theoretically, this research visualizes research theme maps obtained from published data. This research theme map can be a useful reference for SMEs looking to perform better. However, this research is not free from limitations. This research only relies on Scopus as a database. Moreover, although the selected keywords are considered the most relevant to cover most of the articles related to SMEs performance, there is always the option to look up additional articles using different keywords. Despite the abovementioned limitations, this research is the first attempt to provide comprehensive mapping to understand SMEs performance. This research presents a complete thematic knowledge stream and identifies directions for future researchers to study new topics. This research will help expand and advance research on this topic. Further research can explore, develop, and collaborate in research on SMEs performance based on the research theme map's findings. Additionally, broader studies can be conducted considering multiple databases.

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