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Meticulously Study Using Bibliometric Analysis on Factors That Affecting the Performance of Small and Medium Enterprises

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ABSTRACT

This study aims to meticulously analyze the performance of small and medium enterprises (SMEs) and examine the factors that affected their growth and performance in the last 5 years. This study investigated 2302 out of 5243 articles. The researcher collected data from the Scopus database. Vosviewer software was utilized in the paper to look at investigate several aspects of scientific output, including paper analysis, prominent authors, influential publications, affiliations, and countries. The software was also used for keyword co-occurrence analysis, thematic mapping, co-citations, and authorship analysis. The results showed that the most productive year was 2024, with 407 publications. Singh, Sanjay Kumar is the most influential author based on total citations, and Abu Dhabi, United Arab Emirates is the most prominent organization. Additionally, Italy is the leading country in this area. Moreover, the top-cited article "Green Innovation and Environmental Performance: The Role of Green Transformational Leadership and Green Human Resource Management. The research has obtained three themes' clusters of performance in SMEs. The implications of this research inform and direct researchers on the current state of study in the field of performance literature in SMEs. It also outlines future research directions in this field. This study focuses on analyzing and mapping the existing literature on the performance of small and medium-sized enterprises (SMEs), providing a comprehensive scientific overview of current trends, key themes, and insights within this field.

Keywords: Performance, Small and Medium Enterprises, Small and Medium Enterprises, and Bibliometric Analysis
JEL Classifications: M1, M16, M21, O40

1. INTRODUCTION

Small and medium-sized enterprises (SMEs) play a pivotal role in promoting economic growth, job creation, and fostering innovation globally (Enaifoghe, 2024). Despite their economic importance, SMEs often face significant challenges such as constrained financial resources, inadequate managerial expertise, limited access to markets, and difficulties in adopting advanced technologies (Danso et al., 2020; Jamai et al., 2021). These obstacles impact their performance, prompting scholars and policymakers to explore critical factors affecting SME performance to develop strategies for enhanced competitiveness and sustainability (Bouwman et al., 2019). Recent studies on SME performance focus on operational efficiency, financial sustainability, market competitiveness, and innovation capacity. Researchers highlight how SMEs adapt to dynamic environments, leverage technological advancements, and navigate regulatory challenges to drive economic growth (Kushwaha et al., 2015; Dey et al., 2020).

A performance-oriented, data-driven approach helps SMEs identify key performance indicators, improve operational efficiency, and achieve sustainable growth through collaboration with employees, customers, and partners (Troise et al., 2022). Digital technologies have become essential in optimizing operations, supporting decision-making, and enabling sustainable growth by harnessing data insights. Strategic adoption of digital tools helps SMEs stay competitive, enhance productivity, and engage customers effectively (Dressler and Paunovic, 2021). Additionally, integrating strategic planning, innovation, and technology adoption equips SMEs to meet evolving market demands while aligning

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with sustainability goals (Jana and Kaushik, 2022). Recent empirical evidence highlights that AI readiness significantly enhances SMEs' international performance, although the pursuit of both digitalization and sustainability may create competing growth paths during internationalization (Denicolai et al., 2021).

Furthermore, studies identify four stages of digital engagement—awareness, inquiry, collaboration, and transformation—that help assess SMEs' readiness for technology adoption (Camilleri, n.d.). Circular economy practices also correlate with economic performance, though only specific actions—such as manufacturing and usage—contribute to environmental and social outcomes (Ojha et al., 2020) Finally, digitalization has enabled SMEs to effectively respond to crises by leveraging dynamic capabilities, offering valuable insights for future research on technology adoption and crisis management (Rosyidah et al., 2023). The attractiveness of Strategic Planning, Business Innovation, and Technology Adoption in business has created curiosity in researchers. Researchers have also contributed to this area very much by studying different dimensions of Strategic Planning, Business Innovation, and Technology Adoption research. The studies are concentrated on both large and small enterprises however studies on SMEs are less.

According to the Scopus database, in 2024, it was the most active, but unlike 2020 it was less. The researcher chose the last 5 years from 2020 to 2024. Notice that there is a need to study research development in the area of Strategic Planning, Business Innovation, and Technology Adoption research in SMEs because of a study on bibliographies of Strategic Planning, Business Innovation, and Technology Adoption publications. The study shall provide an understanding of the research development in Strategic Planning, Business Innovation, and Technology Adoption research in SMEs and allow scholars to conduct a study on the missing elements of Strategic Planning, Business Innovation, and Technology Adoption research in SMEs. The understanding of research progression in this area shall motivate and create interest in the minds of emerging scholars to investigate and uncover hidden facts. Furthermore, the scholar shall gain interest in carrying out research in this area by knowing the future research directions and requirements.

At the outset, the present study aims to understand research trends, the most productive and influencing authors, articles, and journals. Furthermore, the present study also identifies the thematic structure and research direction of digital marketing research in SMEs. Given the importance of Meticulously Study Using Bibliometric Analysis on Factors That Affect the Performance of SMEs, we employ bibliometric analysis to provide a retrospection of the existing literature on this domain (Zhang et al., 2021). The bibliometric review of the literature allows us to identify the foundation and theme of Meticulously Study Using Bibliometric Analysis of Factors that Affect the Performance of SMEs (Lawani, 1981). The bibliographic coupling and co-citation analysis shall be conducted to understand the thematic structure and knowledge of Meticulously Study Using Bibliometric Analysis on Factors That Affecting the Performance of SMEs (Tan and Phan Tan, 2022).

Additionally, co-occurrence and confluence analysis allow us to comprehend the research trends and research direction in Meticulously Study Using Bibliometric Analysis on Factors That Affect the Performance of SMEs (Zhang et al., 2024). The present study shall motivate the readers and scholars by providing a greater understanding of the most popular and influential works on Meticulously Study Using Bibliometric Analysis on Factors That Affect the Performance of SMEs and allow them to carry out high-quality future research in this domain. It would also allow them to identify publication trends, research progression, and influential publications which will help them to understand the research area in the best way. The academicians and scholars shall also get a greater understanding of the most common thematic clusters, and present research trends on Meticulously Study Using Bibliometric Analysis on Factors That Affecting the Performance of SMEs. It also provides several benefits to the business when attempting to deploy practices for their business promotions. Nevertheless, it shall also contribute to the advancements of digital marketing research in SMEs to uncover new knowledge and findings. Strategic Planning, Business Innovation, and Technology Adoption practices by SMEs are still very less therefore, the future research directions identified through the present study in this area shall provide several opportunities and shall also provide solutions for SMEs to deal with various digital marketing challenges.

2. LITERATURE REVIEW

SMEs significantly contribute to national revenue, enhance economic competitiveness, and stimulate growth, thereby fostering economic adaptability and resilience, as evidenced by their roles in various countries' economies (Kamytbekuly and Maulenbayevna, 2024). SMEs are responsible for creating a substantial number of jobs, employing about 70% of the workforce in some regions (Amoah et al., 2022). In South Africa, SMEs account for approximately 90% of all official firms, absorbing laid-off workers and contributing to sustainable development (Enaifoghe, 2024). Skills Development SMEs encourage innovation through the adoption of new technologies and organizational practices, which enhances their competitiveness (Amelia et al., 2021). They act as incubators for new skills, providing training and development opportunities that uplift local communities (Popescu et al., 2020).

The research in the area meticulously Study Using Bibliometric Analysis on Factors That Affect the Performance of SMEs started in 2020 Initially, the study in this area started with the Internet Performance of SMEs and moved to growing SMEs. This study studied 5243 of 2302 articles. The researcher collected data from the Scopus database from 2020 to the present day; the study has gotten more attention from scholars. In the present day, new areas of digital marketing in SMEs such as marketing strategies, innovation, adoption, performance, and ease of use are added. Future studies in SMEs are expected to focus on several key areas shaped by emerging global trends, technological advancements, and evolving economic landscapes. One critical area is the adoption of new technologies and digital transformation, including artificial intelligence, machine learning, blockchain, and the internet of things (IoT).

Looking at the benefits of performance of small and medium-sized enterprises (SMEs) plays a crucial role in driving economic

growth, sustainability, and innovation. High-performing SMEs contribute to national economies by generating employment opportunities and boosting GDP, helping to reduce unemployment and stimulate local markets (Mamadou Aliou and Saigal Kunal, 2023). They also foster innovation by developing new products and services, enhancing their competitiveness in both domestic and international markets (Bahador and Ibrahim, 2021). Strong performance enables SMEs to adopt sustainable practices, reducing operational costs and building resilience in uncertain environments (Bag et al., 2022). Additionally, well-performing SMEs are better positioned to expand into international markets, contributing to export growth and ensuring long-term stability (Khan et al., 2023). Financial success makes these businesses more attractive to investors and financial institutions, improving their access to funding for further growth and development (Yazdanfar and Öhman, 2020).

The growth and performance of SMEs (small and medium-sized enterprises) are complex and often hindered by various challenges. One of the primary obstacles is financial constraints, as many SMEs struggle to secure loans or attract investors due to perceived risks (Dela et al., 2021), insufficient collateral, or high interest rates, and they often face difficulties managing cash flow (Omopariola et al., 2020). Moreover, thriving SMEs create positive social impacts by supporting local supply chains, increasing communities' purchasing power, and offering employment opportunities to marginalized groups. In this way, enhancing SME performance ensures their continued role as key drivers of economic and social development, with strategic planning, innovation, and technology adoption playing essential roles in this process.

3. METHODOLOGY

3.1. Defining the Appropriate Search Terms

In this study, the terminology used is a combination of two cross-disciplinary components: digital marketing terms and small-medium enterprises. To ensure that all components of Performance and SMEs were covered in this research, it was necessary to include the keywords associated with each area. Table 1 shows the two strings and keyword sets used for Scopus data extraction and document selections. Upon conducting a preliminary search of important relevant papers, the authors developed these terms. SMEs-related terms are Small and Medium Enterprises," "Business Performance, Small and Medium-sized Enterprises, "Small-and-medium Enterprise, and SME Performance.

Table 1: Article inclusion and exclusion criteria

Selections	Exclusion	Inclusion
Database type: Scopus Date of search: "23 October 2024" Publications period: 2020-2024 Search term: "Performances" AND TITLE-ABS-KEY "SMEs" OR "small and medium enterprises"		6,322
The subject of study: "Accounting, economics, management, and Business, econometrics and finance"	2831	3,491
Publication type: "Articles, Book Chapter, and Review"	483	3008
Focused keywords: Small and Medium Enterprises," "Business Performance, Small and medium-sized enterprises, "Small-and-medium Enterprise, and SME Performance	1252	1783
Language screening: "Include documents published in English only"	43	1740

SME: Small and medium-sized enterprises

3.2. Data Collection

The table summarizes the systematic selection process for literature related to the performance of small and medium-sized enterprises (SMEs) sourced from the Scopus database, with the search conducted on October 23, 2024. The review focused on publications from 2020 to 2024, utilizing the search term "Performances" in conjunction with "SMEs" or "small and medium enterprises" in the title, abstract, or keywords. Initially, 6,322 publications were retrieved; however, several exclusion criteria were applied to refine the results. The first filter considered the subject of study, excluding 2,831 publications that did not pertain to accounting, economics, management, or finance, leaving 3,491 relevant articles. Subsequently, a publication-type criterion eliminated 483 studies not categorized as articles, book chapters, or reviews, resulting in 3,008 inclusions.

Further refinement using focused keywords led to the exclusion of 1,252 publications, yielding 1,783 that contained terms related to SMEs and business performance. Finally, a language screening limited the selection to English publications, excluding 43 and ultimately including 1,740 relevant studies for the systematic review. This thorough process ensures that the selected literature is recent, relevant, and specific to the defined research criteria, enhancing the quality and focus of the review. Using the "natural language processing" tool provided in VOSviewer software, the investigators cleaned various terms presented in the article's "titles, abstracts and keywords" for better analysis and outcomes.

3.3. Selecting the Analysis Techniques

Bibliometric analysis comprises a collection of tools that scrutinize and quantify texts and information through quantitative methods (Goyal and Kumar, 2021; Manoj Kumar et al., 2023). This technique facilitates the extraction of novel material from literature reviews, which can subsequently serve as a supplement to the research (Suominen et al., 2016; Edalatpanah, 2023). To achieve this, it is essential to establish and publish biographies on a certain theme, identify patterns within a research domain, and assess research works that serve as a reference for understanding the current state of research (Kar et al., 2023). Researchers employ bibliometric analysis techniques such as authorship, citation, bibliographic coupling, co-citation, and co-word analysis to examine biographic data (Okolo et al., 2023).

4. RESULTS

4.1. Performance Analysis

The bar chart presents the number of documents published from 2020 to 2024, highlighting fluctuations in publication trends over the years. In 2024, the highest number of publications was recorded, with 407 documents, followed closely by 2023, which saw 395 publications (Figure 1). A decline is observed in 2022,

with 341 documents, and the lowest output occurred in 2021, with only 283 publications. However, 2020 recorded 357 publications, indicating a higher output before the drop in 2021.

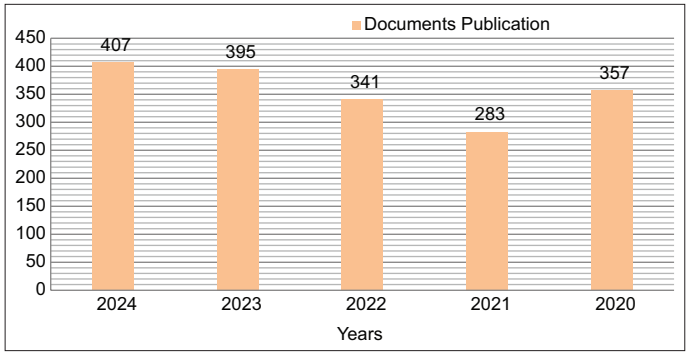
The decline in 2021 may reflect challenges such as disruptions caused by the global pandemic, which likely impacted research activities and outputs. The steady recovery in subsequent years, especially the sharp increase in 2024, suggests enhanced research productivity, potentially driven by improved resources, greater interest, or more funding opportunities. Overall, the data reflects a general upward trend in recent years, signaling growing engagement with research.

4.2. The Prominent Authors, Organizations, and Countries for Performance Research in SMEs

The above Table 2 prominent authors, organizations, and countries for performance research in SMEs. The landscape of performance research in SMEs features. Among the leading authors, Sanjay Kumar Singh stands out with 7 publications and 1,812 citations, followed by Samuel Adomako, who has 12 publications and 373 citations. Other notable contributors include T. Ramayah (9 publications, 318 citations), Sascha Kraus (7 publications, 268 citations), and Soumyadeb Chowdhury (5 publications, 672 citations). In terms of influential institutions, Abu Dhabi University in the UAE plays a significant role with 4 publications and 1,439 citations, alongside Aston University in the UK (5 publications, 445 citations) and University of Turin in Italy (6 publications, 193 citations). Jiangsu University in China and De Montfort University in the UK also contribute meaningfully to this research field. At the country level, Italy leads with 136 publications and 5,322 citations, followed closely by the United Kingdom with 181 publications and 4,843 citations. France (78 publications, 4,196 citations), China (149 publications, 3,644 citations), and India (177 publications, 3,242 citations) further reflect the global diversity and depth of research in this area.

Collectively, these contributors demonstrate the growing importance of performance research in SMEs, with the UK and Italy serving as key hubs, while universities in Abu Dhabi, Malaysia, and China provide additional influence.

Figure 1: Analyze the publisher's growth during the past *5* years in small and medium enterprises



4.3. Most Influential Articles on Performance in SMEs

The most influential articles on SME performance highlight various themes such as innovation, sustainability, leadership, digitalization, and resilience (Table 3). Singh et al. (2020), with the highest citations (1063), emphasize the role of green leadership and HR practices in driving environmental performance, demonstrating how sustainability serves as a competitive asset. Singh et al. (2021) further explores how top management's knowledge-sharing practices foster open innovation, enhancing organizational performance. According to Moeuf et al. (2019) identifies the critical success factors and risks SMEs encounter during Industry 4.0 adoption, linking technological transformation to improved outcomes. Singh et al. (2022) delves into how stakeholder pressure influences green innovation and performance through dynamic environmental capabilities, underscoring the importance of sustainable practices. Kou et al. (2021) contributes by developing a bankruptcy prediction model using transactional data, helping SMEs manage financial risks. Troise (2022) focuses on agility as a key capability for SMEs to navigate volatile, uncertain, complex, and ambiguous (VUCA) environments during digital transformation.

Table 2: Most influential authors, organizations, and country

TP	Author	TC	TP	Organization	TC	TP	Country	TC
7	Singh, Sanjay Kumar	1812	4	"Abu Dhabi University, Abu Dhabi, United Arab Emirates"	1439	136	Italy	5322
5	Chowdhury, Soumyadeb	672	5	"Aston University, Birmingham, United Kingdom"	445	181	UK	4843
5	Dey, Prasanta Kumar	521	5	"University of Bradford, Bradford, United Kingdom"	204	78	France	4196
12	Adomako, Samuel	373	6	"University of Turin, Turin, Italy"	193	149	China	3644
9	Ramayah, T.	318	5	"Jiangsu University, Zhenjiang, China"	161	177	India	3242
7	Ferraris, Alberto	291	4	"De Montfort University, Leicester, United Kingdom"	145	43	UAE	2227
7	Kraus, Sascha	268	4	"University Of Huddersfield, Huddersfield, United Kingdom"	142	100	Spain	2127
8	Amankwah-Amoah, Joseph	192	5	"University of Kent, United Kingdom"	123	95	United States	1998
5	Islam, Nazrul	189	4	"University of Brescia, Brescia, Italy"	83	160	Malaysia	1781
5	Vrontis, Demetris	182	4	"University of Padua, Padua, Italy"	83	176	Indonesia	1546
8	Belas, Jaroslav	145	5	"University Utara Malaysia, Sintok, Malaysia"	76	75	Pakistan	1428
5	Garengo, Patrizia	125	4	"Zayed University, Abu Dhabi, United Arab Emirates"	75	70	Saudi Arabia	1279
8	Al-Hakimi, Mohammed A.	98	4	"Universiti Sains Malaysia, Penang, Malaysia"	62	66	Australia	1191
5	Anwar, Muhammad	98	4	"University Of Pécs, Pécs, Hungary"	61	49	Portugal	711
5	Pomegbe, Wisdom Wise Kwabla	95	6	"Kwame Nkrumah University Of Science And Technology, Kumasi, Ghana"	55	45	Czech Republic	618

TC total citations, TP total number of article (S) publications

Table 3: Most influential articles on performance in SMEs

Author	Title	TC
(Singh et al., 2020)	"Green innovation and environmental performance: The role of green transformational leadership and green human resource management"	1063
(Singh et al., 2021)	"Top management knowledge value, knowledge sharing practices, open innovation and organizational performance"	368
(Moeuf et al., 2019)	"Identification of critical success factors, risks and opportunities of Industry 4.0 in SMEs"	333
(Singh et al., 2022)	"Stakeholder pressure, green innovation, and performance in small and medium-sized enterprises: The role of green dynamic capabilities"	282
(Kou et al., 2021)	"Bankruptcy prediction for SMEs using transactional data and two-stage multiobjective feature selection"	282
(Troise et al., 2022)	"How can SMEs successfully navigate VUCA environment: The role of agility in the digital transformation era"	258
(Denicolai et al., 2021)	"Internationalization, digitalization, and sustainability: Are SMEs ready? A survey on synergies and substituting effects among growth paths"	254
(Chatterjee and Kumar Kar, 2020)	"Why do small and medium enterprises use social media marketing and what is the impact: Empirical insights from India"	235
(Dey et al., 2020)	"Circular economy to enhance sustainability of small and medium-sized enterprises"	217
(Guo et al., 2020)	"The digitalization and public crisis responses of small and medium enterprises: Implications from a COVID-19 survey"	215
(Bartolacci et al., 2020)	"Sustainability and financial performance of small and medium sized enterprises: A bibliometric and systematic literature review"	211
(Ardito et al., 2021)	"The duality of digital and environmental orientations in the context of SMEs: Implications for innovation performance"	210
(Garzoni et al., 2020)	"Fostering digital transformation of SMEs: a four levels approach"	206
(Adam and Alarifi, 2021)	"Innovation practices for survival of small and medium enterprises (SMEs) in the COVID-19 times: The role of external support"	196
(Saunila, 2020)	"Innovation capability in SMEs: A systematic review of the literature"	196

SMEs: Small and medium enterprises, TC: Total citations

Table 4: Most influential journals on performance in SMEs

Journal	TP	TC
"Technological Forecasting and Social Change"	30	2479
"Business Strategy and The Environment"	38	1706
"Journal of Business Research"	30	1639
"Journal of Cleaner Production"	42	1482
"IEEE. Transactions on Engineering Management"	23	451
"Technology Analysis and Strategic Management"	20	416
"International Journal of Productivity and Performance Management"	19	398
"Journal of Small Business Management"	25	378
"Benchmarking"	18	363
"Journal of Business and Industrial Marketing"	16	331
"Small Business Economics"	17	314
"Journal of Small Business and Enterprise Development"	24	272
"Journal of Asian Finance, Economics and Business"	16	220
"Cogent Business and Management"	37	212
"Journal of Small Business and Entrepreneurship"	16	198

SMEs: Small and medium enterprises

Denicolai et al. (2021) explores the synergies between internationalization, digitalization, and sustainability, revealing their collective impact on growth. Chatterjee and Kumar Kar (2020) highlights the importance of social media marketing in driving performance through enhanced customer engagement, particularly in emerging markets. Dey et al. (2020) emphasizes the role of circular economy practices in aligning SME sustainability with profitability. Similarly, Bartolacci et al. (2020) links sustainable practices with financial performance through a bibliometric review. Guo et al. (2020) investigates how digitalization supported SMEs in crisis management during the COVID-19 pandemic, showcasing digital tools as critical for resilience. Ardito et al. (2021) examines the dual influence of digitalization and environmental orientation on innovation, highlighting their complementary nature. Garzoni et al. (2020) offers a framework guiding SMEs through digital transformation, while Adam and Alarifi (2021) underscores the importance of external support for innovation during crises like COVID-19.

Lastly, Saunila (2020) provides a systematic review of innovation capability, establishing it as essential for competitive advantage. Collectively, these studies highlight that SMEs' performance is closely linked to their ability to innovate, adopt sustainable practices, embrace digital tools, and remain agile in uncertain environments.

4.4. Prominent Journals for Performance in SMEs

Table 4 presents a selection of academic journals along with two key metrics: Total publications (TP) and total citations (TC). Each journal name is accompanied by the number of publications it has released and the total number of times those articles have been cited in other academic works. A higher TP indicates that the journal is actively publishing research, while a higher TC suggests that the research published within that journal is influential and recognized within the academic community. For instance, Technological Forecasting and Social Change leads with the highest citation count (2479), reflecting its significant impact in the field. Conversely, journals like IEEE Transactions on Engineering Management, which has 23 publications and 451 citations, may represent a smaller but focused body of impactful research. This table allows for an analysis of the relationship between publication volume and citation impact; journals such as Business Strategy and The Environment and Journal of Cleaner Production showcase both high publication numbers and citation counts, indicating their established status.

In contrast, journals like the Journal of Small Business Management may cater to specific niches, as evidenced by their moderate citation impact despite fewer publications. Understanding these metrics can guide researchers in selecting suitable journals for publication and assessing where to find influential work, ultimately enhancing the visibility and impact of their research.

4.5. Top References for Performance in SME

Table 5 shows the top articles for performance in SMEs and is categorized by the highest local citation, Local citations represent how many times the article has been cited within a specific context, while global citations indicate its recognition across the broader academic community. The LC/GC ratio, expressed as a percentage, reflects the proportion of local impact compared to global influence. For instance, the article by Singh et al. (2020) on green innovation and environmental performance garnered 175 local citations and 1,063 global citations, resulting in an LC/GC ratio of 17%, indicating a strong global recognition but a smaller fraction of local acknowledgment. The study finds that green HRM practices mediate the impact of green transformational leadership on green innovation and indirectly enhance environmental performance. Both additive and interactive effects of leadership and innovation shape the HRM-performance relationship. The results confirm all hypotheses and highlight the importance of leadership in driving green HRM practices to foster innovation and sustainability. In contrast, Singh et al. (2021) examined the relationship between top management knowledge and organizational performance, achieving a higher LC/GC ratio of 28% with 104 local citations and 368 global citations, suggesting a better local impact he study finds that open innovation enhances the performance of SMEs.

Top management's knowledge value and knowledge-creating practices drive open innovation, boosting organizational performance. Using data from 404 SMEs and structural equation modeling, the results align with prior research and offer insights for advancing open innovation theory and practice. Moeuf et al. (2019) focused on bankruptcy prediction for SMEs, attaining 81 local and 282 global citations with a ratio of 29%, indicative of significant local interest in the topic The study develops a bankruptcy prediction model for SMEs using transactional data and payment network-based variables, eliminating the need for financial ratios. While these variables improve prediction, they create high-dimensional issues that affect model interpretability and raise acquisition costs. To address this, a two-stage Multi-objective feature-selection method was introduced, optimizing both the number of features and model performance. The results demonstrate that the model maintains strong classification accuracy with a reduced feature set, confirming the importance of transactional and payment network data. Singh et al. (2022) investigated stakeholder pressure on green innovation, recording 80 local and 282 global citations, also with a 28% ratio.

Overall, the table illustrates how these articles contribute to the understanding of green innovation and management practices in SMEs, with citation metrics serving as indicators of influence and relevance in both local and global contexts.

4.6. Thematic and Influence Structure Analysis Through Bibliographic Coupling

4.6.1. Cluster 1.

The findings from recent studies suggest that the development of specific capabilities contributes to enhancing organizational agility in small and medium-sized enterprises (SMEs) (Table 6). Agility, in turn, positively influences business performance, emphasizing its role in the success of SMEs. Digital technologies emerge as a cornerstone in this process, making it strategically vital for SMEs to adopt and integrate them to build sustainable enterprises. Also, fostering relational and innovative cultures is essential for transforming business practices starting with integrating digital technology (Troise et al., 2022). External support also plays a significant role, particularly in reinforcing the positive effect of innovation on business survival, though it may not directly impact performance. This insight provides valuable guidance for SME managers, policymakers, and government bodies (Adam and Alarifi, 2021).

Moreover, knowledge management within top leadership is instrumental in fostering open innovation, which subsequently enhances organizational performance. These results underscore the importance of aligning management practices with innovation goals to optimize business outcomes (Singh et al., 2021). In the context of small businesses, understanding the unique characteristics of innovation capability can help frame future studies by offering insights into how such capabilities manifest and operate within SMEs (Saunila, 2020). Lastly, factors like perceived usefulness, ease of use, and compatibility significantly influence the adoption of social media marketing (SMM) by SMEs, whereas facilitating conditions have minimal effect. Interestingly, while cost negatively impacts the use of SMM, these insights offer practical implications for improving digital marketing strategies (Chatterjee and Kumar Kar, 2020).

4.6.2. Cluster 2

The study results indicate that stakeholder pressure plays a significant role in influencing green dynamic capability, which subsequently drives green innovation. In turn, green innovation positively impacts firm performance (Singh et al., 2022). Additionally, our findings highlight that one of the key risks in adopting Industry 4.0 within SMEs is the lack of expertise, alongside a short-term strategic mindset. The research emphasizes the importance of training as a critical success factor and notes that managers play a pivotal role in determining the success or failure of Industry 4.0 initiatives. Furthermore, SMEs should leverage the expertise of external specialists to ensure smoother transitions. Industry 4.0 presents SMEs with a transformative opportunity to redesign their production processes and embrace innovative business models (Moeuf et al., 2019). The results of the study also reveal the presence of three key research themes: (1) the role of innovation and entrepreneurship in enhancing sustainability within SMEs (cluster 1), (2) the impact of corporate social responsibility in the SME context (cluster 2), and (3) green management and environmental considerations for SMEs (cluster 3). In conclusion, the paper provides valuable insights into these research themes and offers recommendations for future research directions (Bartolacci et al., 2020).

Table 5: Most influential reference on performance in SMEs

Author	Title	LC	GC	LC/GC ratio (%)
(Singh et al., 2020)	"Green innovation and environmental performance: The role of green transformational leadership and green human resource management"	175	1063	17
(Singh et al., 2021)	"Top management knowledge value, knowledge sharing practices, open innovation and organizational performance"	104	368	28
(Moeuf et al., 2019)	"Bankruptcy prediction for SMEs using transactional data and two-stage multiobjective feature selection"	81	282	29
(Singh et al., 2022)	"Stakeholder pressure, green innovation, and performance in small and medium-sized enterprises: The role of green dynamic capabilities"	80	282	28
(Kou et al., 2021)	"Circular economy to enhance the sustainability of small and medium-sized enterprises"	78	217	36
(Troise et al., 2022)	"Sustainability and financial performance of small and medium sized enterprises: A bibliometric and systematic literature review"	74	211	35
(Denicolai et al., 2021)	"How can SMEs successfully navigate VUCA environment: The role of agility in the digital transformation era"	73	258	28
(Chatterjee and Kumar Kar, 2020)	"Why do small and medium enterprises use social media marketing and what is the impact: Empirical insights from India"	51	235	22
(Dey et al., 2020)	"Fostering digital transformation of SMEs: a four levels approach"	46	206	22
(Guo et al., 2020)	"Internationalization, digitalization, and sustainability: Are SMEs ready? A survey on synergies and substituting effects among growth paths"	33	254	13
(Bartolacci et al., 2020)	"The digitalization and public crisis responses of small and medium enterprises: Implications from a COVID-19 survey"	25	215	12
(Ardito et al., 2021)	"Identification of critical success factors, risks and opportunities of Industry 4.0 in SMEs"	23	333	7
(Garzoni et al., 2020)	"The duality of digital and environmental orientations in the context of SMEs: Implications for innovation performance"	23	210	11
(Adam and Alarifi, 2021)	"Innovation practices for survival of small and medium enterprises (SMEs) in the COVID-19 times: The role of external support"	10	196	5
(Saunila, 2020)	"Innovation capability in SMEs: A systematic review of the literature"	7	196	4

LC: Local citations, GC: Global citation, SMEs: Small and medium enterprises

Table 6: Most influential articles on performance in SMEs

Themes	Author	Title	TC
SMEs thrive in a VUCA environment through agility, external support, knowledge sharing, and social media marketing to enhance innovation and performance.	(Troise et al., 2022)	"How can SMEs successfully navigate VUCA environment: The role of agility in the digital transformation era"	258
	(Adam and Alarifi, 2021)	"Innovation practices for survival of small and medium enterprises (SMEs) in the COVID-19 times: The role of external support"	196
	(Singh et al., 2021)	"Top management knowledge value, knowledge sharing practices, open innovation and organizational performance"	368
	(Saunila, 2020)	"Innovation capability in SMEs: A systematic review of the literature"	196
	(Chatterjee and Kumar Kar, 2020)	"Why do small and medium enterprises use social media marketing and what is the impact: Empirical insights from India"	235
Stakeholder pressure, green innovation, and Industry 4.0 success factors drive performance and sustainability in small and medium-sized enterprises (SMEs)	(Singh et al., 2022)	"Stakeholder pressure, green innovation, and performance in small and medium-sized enterprises: The role of green dynamic capabilities"	282
	(Moeuf et al., 2019)	"Identification Of Critical Success Factors, Risks And Opportunities Of Industry 4.0 In SMEs"	333
	(Bartolacci et al., 2020)	"Sustainability And Financial Performance Of Small And Medium Sized Enterprises: A Bibliometric And Systematic Literature Review"	211
Digital and environmental orientations, along with digital transformation and circular economy strategies, influence the innovation performance and sustainability readiness of SMEs amid public crises like COVID-19	(Ardito et al., 2021)	"The Duality Of Digital And Environmental Orientations In The Context Of SMEs: Implications For Innovation Performance"	210
	(Denicolai et al., 2021)	"Internationalization, Digitalization, And Sustainability: Are SMEs Ready? A Survey On Synergies And Substituting Effects Among Growth Paths"	254
	(Garzoni et al., 2020)	"Fostering Digital Transformation Of SMEs: A Four Levels Approach"	206
	(Dey et al., 2020)	"Circular Economy To Enhance Sustainability Of Small And Medium-Sized Enterprises"	217
	(Guo et al., 2020)	"The Digitalization And Public Crisis Responses Of Small And Medium Enterprises: Implications" From A Covid-19 Survey"	215

TC: Total citations

4.6.3. Cluster 3

The study by Ardito et al. (2021) investigates the impact of digital and environmental orientation on the innovation performance of 369 North American SMEs. Their findings show that both orientations positively influence product and process innovation. However, pursuing a combined strategy of digitization and environmental sustainability negatively affects process innovation and does not significantly influence product innovation. These results offer fresh insights into the relationship between strategic orientation and innovation, particularly for smaller firms. Similarly, Ardito et al. (2021) analyzed data from 438 SMEs, including domestic and international companies, demonstrating that Artificial Intelligence (AI) readiness enhances international performance. While digitalization and sustainability are positively linked, their impact diverges when SMEs seek international growth, revealing them as competing paths. Garzoni et al. (2020) introduced a four-level framework for digital technology adoption among SMEs—ranging from digital awareness to digital transformation—providing key variables to assess digital readiness and guide process digitalization. In the context of sustainability, (Dey et al., 2020) explore SMEs' involvement in the circular economy (CE) across fields of action like take, make, use, and recover. While all CE activities are linked to economic performance, only "make" and "use" contribute to environmental and social outcomes the study also highlights the challenges and strategies essential for integrating CE within SMEs. Lastly, Guo et al. (2020) demonstrate that digitalization enables SMEs to respond effectively to public crises through dynamic capabilities, positively influencing performance. They propose a theoretical framework linking digitalization with crisis responses and suggest future research directions in this area.

4.7. Knowledge Foundations of Performance in SMEs

These authors Armstrong J.S., Overton T.S., Bagozzi R.P., Yi Y., Barney J. Cohen W.M., Levinthal D.A., Fornell C., Larcker D.F., Hair J.F., Ringle C.M., Sarstedt M., Risher J.J., Henseler J., Mackenzie S.B., Lee J.Y., Podsakoff P.M., Organ D.W, Rosenbusch N., Brinckmann J., Bausch A., Venturing, And Teece D.J., Pisano G., Shuen A., have gotten red node. While Green Color Nede To Consist Of Covin J.G., Slevin D.P., Lumpkin G.T., Dess G.G., Miller D., Rauch A., And Wiklund J., Shepherd D. Besides, authors Barney J.B., and Wernerfelt B obtain blue cluster, The knowledge foundations of performance in SMEs, as visualized in the bibliometric network map, highlight clusters of influential works and researchers (Figure 2). The central node, "Barney, J. – Firm Resources and…," represents the resource-based view (RBV), emphasizing that a firm's internal resources and capabilities are crucial determinants of competitive advantage and performance. The blue cluster, including Wernerfelt's foundational work on resource-based theory, connects with Barney's studies, forming the theoretical basis for understanding how firms utilize resources to enhance performance.

The red cluster comprises scholars such as Teece, Pisano, and Shuen, who contribute to the concept of dynamic capabilities, which highlights the importance of firms' ability to adapt, integrate, and reconfigure resources in rapidly changing environments. This group also includes methodological contributors, such as Fornell and Larcker, whose work on evaluation models (e.g., structural equation modeling) provides essential tools for empirical research in SME performance studies. The green cluster centers on Lumpkin, Dess, Wiklund, and Covin, who focus on entrepreneurial orientation and strategic management. Their work demonstrates the significance of entrepreneurship, market orientation, and innovation as key drivers of firm performance, particularly in SMEs. These studies highlight how entrepreneurial practices, such as proactiveness and risk-taking, impact firm success.

Together, these interconnected clusters demonstrate that SME performance research is grounded in a blend of resource-based theory, dynamic capabilities, strategic entrepreneurship, and methodological rigor. This network of knowledge underscores the

Figure 2: Knowledge foundations of performance in small and medium enterprises

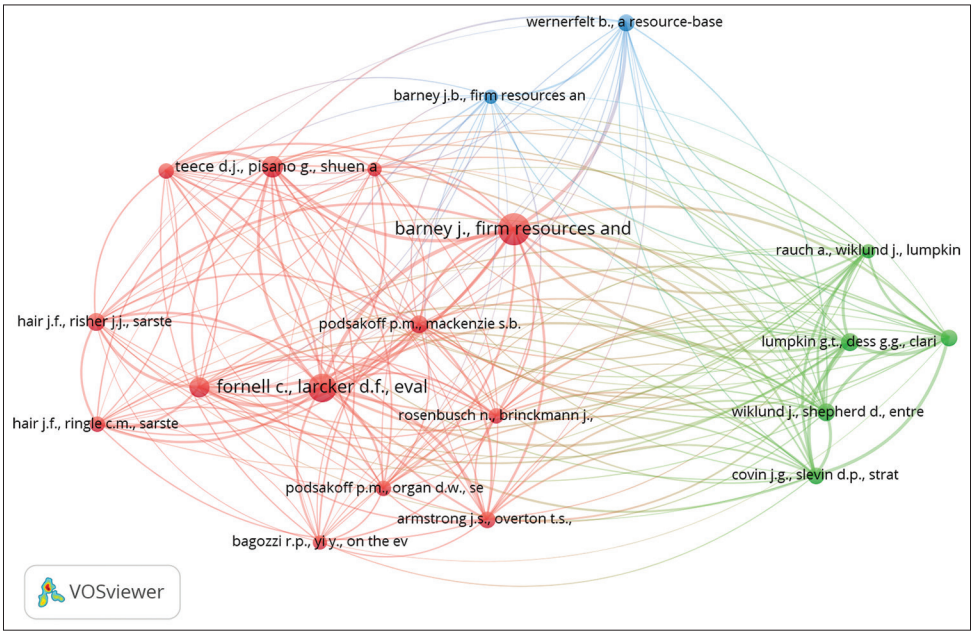
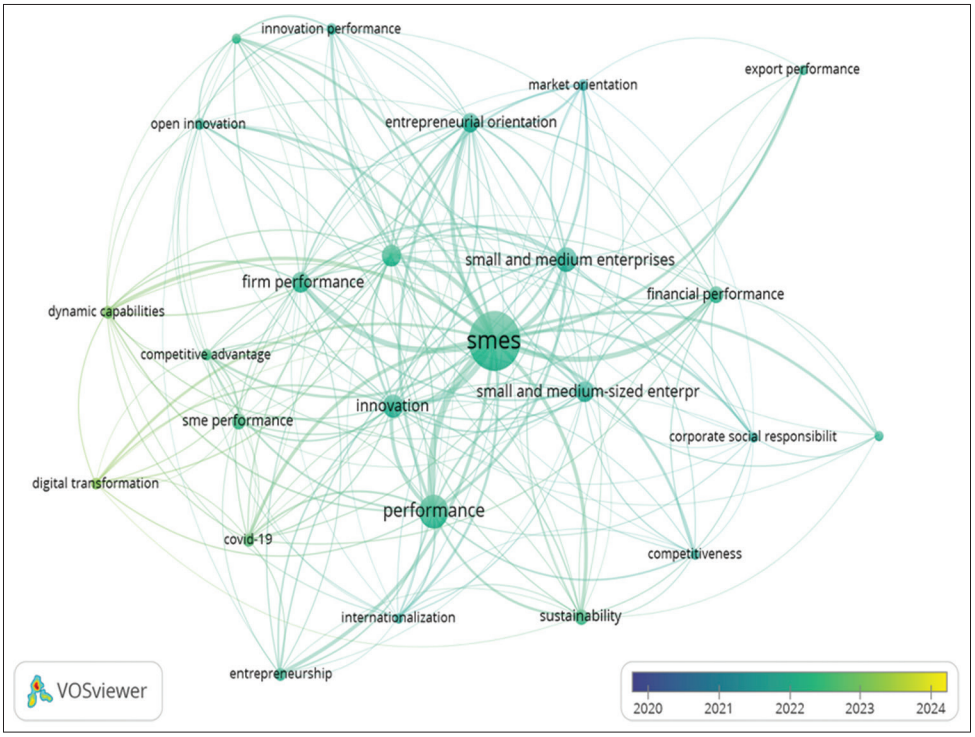


Figure 3: Thematic trends of performance in small and medium enterprises



importance of leveraging internal resources, adapting to change, fostering innovation, and applying robust research methods to achieve sustainable performance in SMEs.

4.8. Thematic Trends of Performance in SMEs

The thematic trends related to performance in SMEs, as visualized in the network map, highlight several interconnected themes (Figure 3). At the core, SMEs and their performance form the central focus, with dense connections indicating the multifaceted nature of the factors influencing them. Performance, both overall and financial, emerges as a critical measure of success, closely linked with various strategic dimensions. Innovation, including open innovation, plays a pivotal role in enhancing performance, showing that firms that adopt innovative practices gain a competitive edge.

Similarly, financial performance is emphasized as a key objective, essential for ensuring profitability and long-term sustainability.

Entrepreneurial orientation and market orientation appear as significant drivers of SME growth, underscoring the importance of a proactive mindset and market alignment. Internationalization and export performance are also highlighted, suggesting that SMEs venturing into global markets can achieve better financial outcomes through expanded market opportunities and risk diversification. The map further captures the growing influence of digital transformation, reflecting the increasing reliance on technology, especially in the wake of the COVID-19 pandemic. This trend indicates a shift toward more resilient and adaptive business models.

In addition, sustainability and corporate social responsibility (CSR) are emerging themes, indicating that modern SMEs are prioritizing ethical practices in response to evolving market expectations. Overall, the map demonstrates that SME performance is shaped by the interplay of multiple factors, including innovation, financial health, entrepreneurial efforts, market strategies, and sustainability.

5. CONCLUSION

Bibliometric analysis offers valuable insights for collection development, highlights institutional research strengths, reveals citation patterns, and identifies co-citation networks that indicate schools of thought. This study visualized research trends, thematic evolution, and influential contributions in the field of SME performance. The data was extracted from the Scopus database, the largest bibliographic resource available. The study outlines the progression of research on SME performance across various periods, shedding light on key themes and developments. It also provides insights into future research directions, encouraging scholars to explore emerging areas within the domain, which could offer meaningful guidance to policymakers and practitioners. By mapping the development of SME performance research and identifying potential research gaps, this study contributes to a deeper understanding of the field's evolution and future directions. However, the analysis is limited to data obtained exclusively from the Scopus database. Future research could benefit from integrating data from multiple bibliographic sources to capture publications not listed in Scopus alone. Alternatively, focused bibliometric analyses using only Scopus-listed publications may help scholars explore research paradigms within high-quality studies. This study may be especially valuable for both managers and companies, as well as for policymakers. Policymakers, in particular, can use the insights to identify which types of company behaviors or strategies should be aligned with incentives or other strategic

tools to enhance financial performance across various levels of the economic system—local, national, and international.

5.1. The Study Implications

This study offers valuable insights for marketers, entrepreneurs, academics, and researchers. It provides a comprehensive understanding of the existing research in this field and highlights the key contributors and their significance. By accessing these influential works, they can address current academic and industry challenges more effectively. Additionally, it identifies gaps in the literature and suggests future research directions, supporting scholars in planning their studies. Moreover, it offers guidance for publishing in high-impact journals, enhancing the visibility and impact of their research.

5.2. Future Research Directions

Analyzing performance studies in SMEs from a historical perspective is essential for understanding both current impacts and future implications. By reviewing key publications, this research can establish a foundation for the expanding field of performance studies in SMEs, enabling future researchers to explore the applications and benefits of performance enhancements within SMEs. Future studies could investigate how recent advancements in performance drive SMEs to excel in both local and global markets. Research conducted between 2020 and 2024 has focused on performance, innovation, open innovation, innovative practices, entrepreneurial orientation, and the adoption of these practices. Generally, the map demonstrates that SME performance is shaped by the interplay of multiple factors, including innovation, financial health, entrepreneurial efforts, market strategies, and sustainability. Furthermore, future research shall be on personalized marketing, historical activity-based marketing, etc.

Furthermore, the future research directions for e-business and marketing strategy shall also make use of recent technologies. The study on the Performance of SMEs however, the study focused on growth practices in SMEs are nominal, therefore, a study on this in the future shall change the fate of SMEs and allow them to implement recent technologies to promote their business and develop the Performance of SMEs.The trends also suggest that future research could explore the integration of sustainability, innovation, and technology adoption to better understand their combined impact on SME performance in a rapidly changing business landscape In addition, sustainability and corporate social responsibility (CSR) are emerging themes, indicating that modern SMEs are prioritizing ethical practices in response to evolving market expectations. Overall, SME performance is shaped by the interplay of multiple factors, including innovation, financial health, entrepreneurial efforts, market strategies, and sustainability.

The trends also suggest that future research could explore the integration of sustainability, innovation, and technology adoption to better understand their combined impact on SME performance in a rapidly changing business landscape. Furthermore, future research on the performance in SMEs, as visualized in the network map, highlighted several interconnected themes. At the core, SMEs and their performance form the central focus, with dense connections indicating the multifaceted nature of the factors influencing them. Performance, both overall and financial, emerges as a critical measure of success, closely linked with various strategic dimensions. Innovation, including open innovation, plays a pivotal role in enhancing performance, showing that firms that adopt innovative practices gain a competitive edge. Additionally, a future study shall be conducted on the skill and expertise required by the marketers of SMEs to implement to grow SME performance.

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