International Journal of Sustainable Development and Planning
Vol. 19, No. 3, March, 2024, pp. 1003-1014
Journal homepage: http://iieta.org/journals/ijsdp

Green Economy Research Trends and Mapping in SMEs: A Bibliometric Analysis

Syti Sarah Maesaroh[1*], Agus Rahayu[1], Eeng Ahman[1], Lili Adi Wibowo[1], Ardli Swardana[2]

[1] Department of Management, Universitas Pendidikan Indonesia, West Java 40154, Indonesia
[2] Department of Agrotechnology, Universitas Garut, West Java 44151, Indonesia

Corresponding Author Email: sytisarah@upi.edu

https://doi.org/10.18280/ijsdp.190318

Received: 25 September 2023
Revised: 24 October 2023
Accepted: 23 November 2023
Available online: 29 March 2024

Keywords:
bibliometric, green economy, Scopus, SMEs, strategies, sustainability, VOS viewer

ABSTRACT

The application of the green economy to SMEs is still experiencing obstacles, so that it affects competitiveness, especially in the global market. This study aims to determine the trend and map the application of the green economy in SMEs. Data analysis used bibliometric analysis with the Scopus database. The number of articles analyzed is 350, published from 1997 to 2022. The research technique is divided into three stages: planning, implementation, and reporting. Data analysis employs bibliometric analysis, with forms of analysis ranging from co-authorship analysis to co-occurrence analysis to citation analysis. The results show that India and the United Kingdom are countries with a great influence on this topic. There are 5 clusters found in this study, with the topic of sustainable development being the most relevant topic in research related to the green economy. There are relatively few strategies for adopting the green economy in SMEs. Some of the emerging strategies concern the deployment of green image, green manufacturing, and environmental social responsibility techniques. This study adds to the quiet literature on themes that have significant potential for additional investigation, particularly those connected to the strategy of implementing the green economy in SMEs.

1. INTRODUCTION

The concept of sustainability in development is a new thing both in the academic world and in the industrial world [1]. Even in real terms, development is still very far from the concept of sustainable development [2]. Over time, the trend of sustainability reporting in companies has increased from year to year [3]. However, [4] stated that there are still many problems related to sustainable development, especially in the economic field. For example, the issue of sustainability in the palm oil industry in Indonesia has been the target of sharp criticism from the international community for years [5], even though the palm oil industry is a strategic commodity for Indonesia [6]. This means that the palm oil industry will always have to deal with problems in agriculture, the environment, and society [7].

During the final years of this decade (2010-2020), there was a surge in the desire for environmentally friendly products or those that conform to the tenets of sustainability [7, 8]. A company is expected to comply with all standards and requirements, as well as respond to signals from external market stakeholders, particularly the international market [8]. Environmentally friendly products are in high demand not only in large industries, but also in small and medium-sized businesses [9]. Several studies on the concept of SMEs' sustainability have emphasized environmental aspects, such as green products [10], green marketing [11], green supply chain management [12, 13], green innovation [14, 15], and green intellectual capital [16]. However, applying green economy principles to SMEs is still uncommon [17].

SMEs generally consider technical aspects that influence performance when applying the concept of sustainability, particularly the environment [18]. Recent research has found significant variation in the determinants of green economy among SMEs [8]. The author is encouraged to conduct additional research related to the literature review on the application of green economy concepts to SMEs because of the existence of research gaps and empirical gaps in the field. The theoretical foundations are strategic management [19] and resource-based perspectives (RBV) [20], which states that an organization's internal strength is an important factor in achieving competitiveness. This study employs quantitative methods as well as bibliometric analysis. The bibliometric method is used to quantitatively study activities and evaluate scientific productivity. This study will provide an overview of the mapping and trends in green economy development research in SMEs.

In several ways, this study contributes to the literature on green economy development. First, we will concentrate on the creation of scientific articles that will specifically analyze the evolution of green economy concepts in SMEs in various countries. A 10-year review of scientific articles can help understand the trajectory of research on a specific topic [20]. Second, to explain the variety of approaches, we discuss changes to the material referred to in SMEs green economy development. Third, we contribute to current research on the

growth of small and medium-sized green economy by using bibliometric techniques to demonstrate the importance of this research in other journals.

2. LOGICAL FRAMEWORK

2.1 Strategic management and RBV

Strategic management is a set of management decisions and actions that influence an enterprise's long-term performance [19]. David and Han [21] state that strategic management is the science and art of conceiving, implementing, and evaluating cross-functional decisions that enable an organization to achieve its goals. The most important aspect of strategic management is that it provides companies with a framework for developing the ability to foresee and deal with change [22]. The strategic management process model involves environmental scanning (both external and internal), strategy creation (strategic or long-term planning), strategy execution, and evaluation and control [19].

Environmental scanning and an assessment of the influence of environmental changes on the organization, should be included in strategic planning [19]. When a firm's expertise of the external environment is combined with knowledge of the internal environment, it aids in the formation of the firm's strategic intent, strategic mission, and strategies [23].

Specific strategic options can be generated once a detailed picture of the company and its environment has been developed. Strategy development (also known as strategic planning or long-term planning) begins with a situation analysis to align external opportunities and threats with internal strengths and weaknesses [19]. A successfully defined strategy enables management to combine the company's resources, capabilities, and competences in order to match them with its external environment [23].

Managers must put their plans into action after picking a congruent set of strategies to get a competitive edge and increase performance. Strategy implementation is the process of carrying out strategies and policies through the creation of programs, budgets, and procedures [19]. Strategy implementation is an essential component of the strategic management process, and it is defined as a process that converts the formulated strategy into a series of actions and then results in ensuring that the organization's vision, mission, strategy, and strategic objectives are successfully achieved as planned [24]. Once executed, the strategy's results must be measured and analyzed, with the necessary changes made to keep the plan on track. Evaluation and control is the process of monitoring a company's operations and performance results in order to compare actual performance to desired performance [19].

2.2 SMEs and green business

According to the RBV, in order to be competitive, business organizations must have valuable and unique resources that are difficult to imitate and difficult to replace [20]. The literature identifies various tools for defining SMEs' competitiveness performance. Most studies consider product, process, and management system innovation, as well as the viability and competitiveness of SMEs, to be important indicators [25]. One of the issues that is still emerging and developing is the issue of SMEs sustainability [26]. Researchers have defined sustainable performance in various ways, such as [27] as a company's ability to achieve superior performance in social and environmental aspects. The sustainability agenda encompasses a broader range of issues, including environmental justice, social justice, ecological protection, and so on [27]. One of the most widely used approaches to measuring sustainability performance is based on three dimensions: environmental, economic, and social [28].

In a rapidly changing global economy, institutional readiness is critical for informing SMEs about the potential benefits of adopting new approaches [29]. Sustainability innovation [30], is defined as a positive change that improves a company's sustainability performance. Green economy is one of the concepts currently being discussed in relation to sustainability. Sustainable development goals (SDGs)) are an economic concept that emphasizes environmental sustainability as an important component of achieving SDGs [31]. Governments, businesses, and financial institutions must all think about and act to help the SMEs sector become more environmentally friendly [32].

3. METHODOLOGY

A systematic literature study is a research methodology that aims to create a formal survey of a discipline's state of the art [33]. We used Tranfield et al. [34]'s systematic literature review methodology, which has three major stages: planning, implementation, and data reporting. This methodology is employed to enhance the analysis in alignment with these phases. We summarize the objectives, strategies, and parameters of our article selection based on the desired conditions during the planning stage (according to the period covered, source database, keywords, document type, etc.). Using the relevant sample space, identify the relevant database. As a research database, we used the Scopus database. The keywords used in the Scopus database search are "Green AND SMEs AND (LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT-TO (SUBJAREA, "BUSI")" (LANGUAGE, "English").

During the implementation phase, researchers performed a bibliometric study to discern trends and patterns in green economy research pertaining to SMEs. The bibliometric study was conducted using the Vos Viewers 1.6.18 program. Bibliometric analysis is conducted in order to acquire statistical data and comprehensive insights pertaining to academic journals. Through the utilization of bibliometric analysis, it becomes possible to evaluate the performance of academic journals in relation to their productivity and impact on the advancement of knowledge. Bibliometric analysis plays a crucial role in the advancement of a research field as it serves to consolidate existing research and facilitate the exploration of new research avenues [35]. Bibliometric studies conducted within the field of information science have the capacity to unveil the use patterns of documents, development books, and information sources within a specific topic area. Bibliometrics encompasses two distinct categories of research, specifically descriptive studies and evaluative studies. Descriptive studies examine the productivity of various formats, including articles, books, and other forms of scholarly work, through the analysis of authorship patterns. These patterns encompass factors such as the gender of writers, the type of work they produce, the rate of collaboration, their level of productivity, their institutional connection, and the subject matter of the articles.

Evaluative studies involve the analysis of literature utilization through the quantification of references or citations found in research articles, books, or other relevant media [36].

According to the author in reference [37], the utilization of bibliometric methods can be categorized into two main components: 1) the computation of bibliometric indicators to assess performance across various behavioral levels; and 2) the examination and depiction of bibliometric networks using analysis and visualization techniques. Bibliometrics can be categorized into two main branches: descriptive bibliometrics and evaluative bibliometrics. Descriptive bibliometrics employs a top-down methodology to ascertain a comprehensive overview of research output across diverse sectors within a given country. This approach aims to analyze the proportion of research contributions in different domains as well as track temporal variations. Moreover, evaluative bibliometrics serves as a valuable instrument for evaluating the performance of smaller entities, such as research groups or individuals, through the implementation of a bottom-up methodology. This entails the comprehensive collection of all pertinent publications emanating from each respective unit.

The analytical techniques employed encompass co-authorship analysis, co-occurrence analysis, and citation analysis. The concept of co-authorship involves the examination and analysis of an author's collaborative efforts with other individuals in the creation of a written work. The study will present the results in a visual format, categorizing them based on the author's name, the author's organization, or the author's place of origin. The process of co-occurrence visualization entails the representation of the interconnectedness among keywords inside a network. The citation will provide a visual representation of the documents that have been observed. If the papers that have been observed or tested contain citations to other publications that have also been observed or tested, they will be interconnected. The analysis primarily centers on the quantification of publications, citations, and associated index scores in order to ascertain their respective impacts. The analysis reveals a discernible trend in the evolution of journals, characterized by a series of incremental modifications to their structure. The utilization of bibliometric coupling, co-citation, and co-occurrence of keywords has been seen [38].

At this juncture, the study findings can be visually represented using VOSviewer, employing three distinct display options: network visualization, overlay visualization, and density visualization. The objective of network visualization is to visually represent the degree of strength or weakness in a network or the relationship between research terms. Overlay visualization, on the other hand, seeks to visually represent historical traces by considering the year of publication of the research. Lastly, density visualization aims to visually display the density or level of emphasis on research groups.

During the reporting phase, researchers generate comprehensible reports by utilizing pre-existing and readily accessible data. During this phase of the study, the researcher employed various methods to categorize the data. The present analysis employs commonly utilized methodologies, namely the quantification of articles (including total articles, articles per author, and authors per article) and the quantification of citations (including total citations, average citations per year, and by article, author, institution, or nation) [39]. This study employed a literature analysis within the strategic management paradigm, as outlined by Wheelen et al. [19].

4. RESULT AND DISCUSSION

4.1 Planning stages

The outcomes of the planning phase consist of documents that adhere to specific keywords and subject area limitations. The search criteria employed for retrieving publications in the Scopus database include the keywords "Green," "SMEs," and the limitation of subject area to "BUSI." Additionally, the search is further restricted to articles written in the English language. Articles are subject to limitations in terms of their topic area and the language employed. The data sources included in this study only consisted of papers pertaining to the fields of business, management, and accounting, all of which were written in the English language. The retrieval of publications containing the specified keywords yielded a total of 350 documents from diverse sources, encompassing journals, book chapters, conference papers, and books published between the timeframe of 2013 to 2022.

Articles on the green economy in SMEs show an increasing trend over the last 20 years, from 1997 to 2022. According to the data, articles Significant progress has been made in the last three years (2020, 2021, and 2022). Figure 1 depicts the data on article distribution.

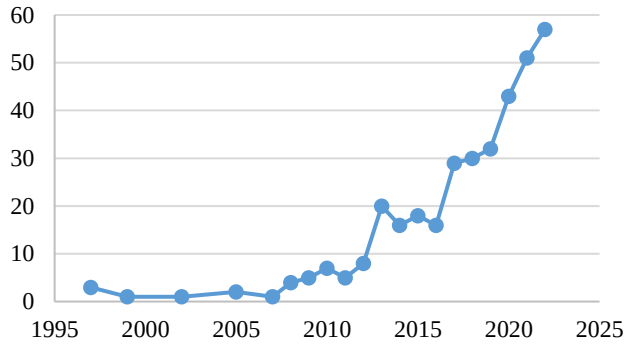

Figure 1. Distribution of the number of articles

Research on the implementation of green economy principles within the SME sector has increased substantially over the past three years. The significant increase in the number of articles was analyzed as the result of SDGs policies. IFAC (International Federation of Accounting Committee) announced at the 2020 G-20 summit that every company in the world is encouraged to update their reporting to the Integrated Reporting scheme. Integrated Reporting is a public reporting system that includes financial reporting as well as corporate social responsibility/sustainability reporting (annual report and sustainability report). This is a solution for increasing corporate involvement in achieving the SDGs by 2030 [40, 41]. Companies can use this report to be open and honest with their customers, build trust and awareness, encourage customers to make environmentally friendly choices, gain scalability, and become more eco-efficient.

The requirement to have a sustainability report applies not only to large corporations, but also to SMEs in order for them to compete globally [42]. According to research [43], the mission, practice, form of company, certificate, and capacity of SMEs are currently shifting toward the inclusion of sustainability concepts and principles. In Europe, SMEs owners are also encouraged to conduct sustainable reporting in accordance with the 2030 SMEs vision. In the interim, study

[42] reported that the sustainability report was applied to twenty-five small and medium-sized enterprises (SMEs) in Indonesia and that among the twelve general information indicators, over fifty percent of SMEs were disclosed. The 25 SMEs referenced in study [42] are a representative sample of 25 SMEs operating throughout Indonesia that possess knowledge or are inclined to investigate sustainability issues. The sustainability report comprises 12 general indicators. These encompass the following: company name, brand names, activities, products, and services; business and head office locations; ownership and legal structure of the company; markets covered; company size; values, principles, standards, and norms of conduct; executive management's approach to stakeholder engagement; and standards, norms, and values of the company.

4.2 Implementation stage

4.2.1 Co-authorship analysis

Co-authorship analysis seeks to determine the level of productivity of authors (co-authors) when conducting research and writing activities as single authors and as authors in groups [43]. Bibliometric analysis results for co-authorship analysis with a country analysis unit of at least 5 articles per country. Figure 2 depicts an image of the co-authorship cluster analysis. The author's collaboration with other authors is the focus of this analysis. The analysis displays results based on the author's name, organization, or country of origin. According to the findings of the analysis, the authors' collaboration occurred across borders, resulting in 5 collaboration network clusters in 28 countries. When compared to nodules representing the names of other countries, nodules representing the United Kingdom are the largest. This demonstrates that author collaboration in publishing research findings related to the green economy in SMEs is stronger than collaboration among affiliated writers from other countries.

Table 1 displays data on the number of articles and article citations by country. According to the findings, articles from India, the United Kingdom, Taiwan, China, and Italy have the highest number of articles among the 28 other countries. The number of citations was related to the number of articles published by the five countries.

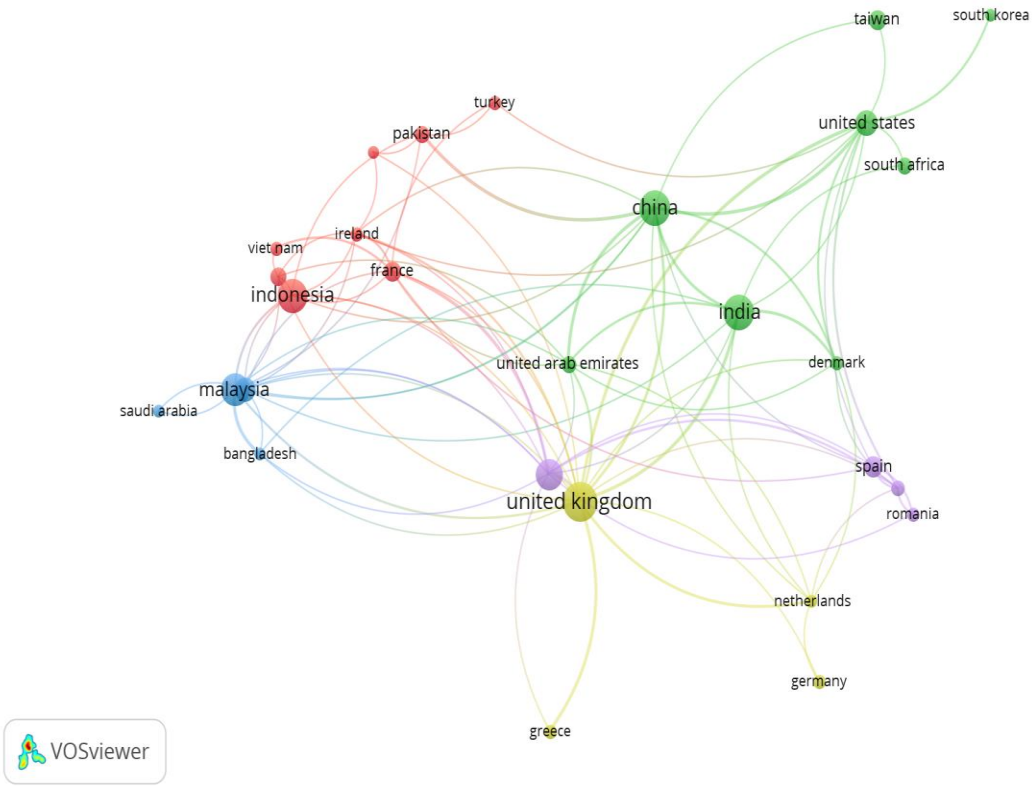

Figure 2. Co-authorship analysis with country analysis

Table 1. Article citation and number by country

No.	Country	Doc	Citation	No.	Country	Doc	Citation
1	India	39	1735	15	Netherlands	5	238
2	United Kingdom	46	1389	16	Greece	7	200
3	Taiwan	12	1377	17	Indonesia	36	198
4	China	39	1115	18	South Africa	9	195
5	Italy	30	1068	19	Portugal	8	161
6	Denmark	7	813	20	Saudi Arabia	5	77
7	Australia	17	802	21	Ireland	6	69
8	France	12	734	22	Pakistan	9	65
9	Spain	14	650	23	Bangladesh	5	60
10	United Arab Emirates	9	605	24	Vietnam	7	46

No.	Country	Doc	Citation	No.	Country	Doc	Citation
11	United states	21	568	25	Thailand	11	41
12	Germany	7	389	26	Canada	5	36
13	Malaysia	33	355	27	Turkey	7	35
14	South Korea	5	242	28	Romania	6	5

According to research [44] conducted in India, all SMEs have a positive attitude toward green manufacturing, but many are not ready to implement the practice. Meanwhile, [45] stated that SMEs contributed nearly 47% of GDP in the United Kingdom [46]. Meanwhile, in Taiwan, companies that implemented green projects for more than three years saw significant improvements in green innovative capabilities, green relational capabilities, co-innovation behavior, and entrepreneurial opportunity recognition [47]. This evidence suggests that researching the green economy in these countries remains very appealing.

4.2.2 Co-occurrences analysis

The Co-occurrences analysis is a search for scientific publication documents using the search terms "green" and "SMEs" on titles, abstracts, and/or keywords published in Scopus indexed journals. It also generates information in the form of a complete keyword list with the frequency of occurrence of 1.583 keywords and 81 keywords that appear 5 times in the article. Figure 3 depicts the results of the network visualization analysis for the article's keywords.

The analysis results show that there are six clusters that demonstrate the relationship between one topic and another. SMEs (90 times), sustainable development (51 times), sustainability (50 times), and environmental management are some of the most frequently used keywords in articles (35 times). However, with a total link strength of 276, the topic of sustainable development is the most frequently connected in green economy research. This is understandable given that the environment is one of the indicators of sustainable development. Authors [48, 49] contends that the green economy—the most recent method of acquiring and utilizing resources—is a product of the Fourth Industrial Revolution and centralizes many of Industry 4.0's achievements. Clean energy, green finance, and green economic development are examples of sustainable practice [50].

The co-occurrence analysis can show the distribution of topics each year in addition to the network of relationships between topics. Figure 4 depicts the results of the Vos Viewers overlay visualization analysis. Topics with yellow nodules have recently been reviewed in the article. The most recent topic is green manufacturing, which is related to green innovation, business performance, and environmental management.

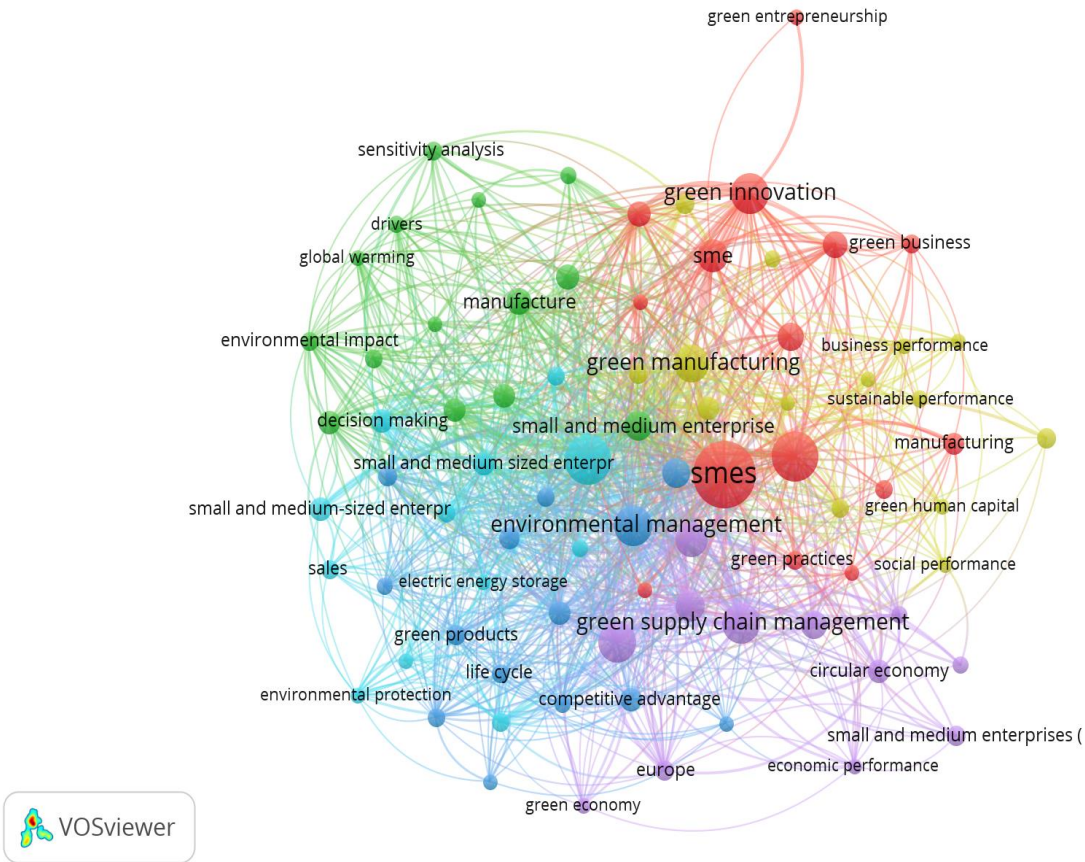

Figure 3. Analysis of co-occurrences on article keywords

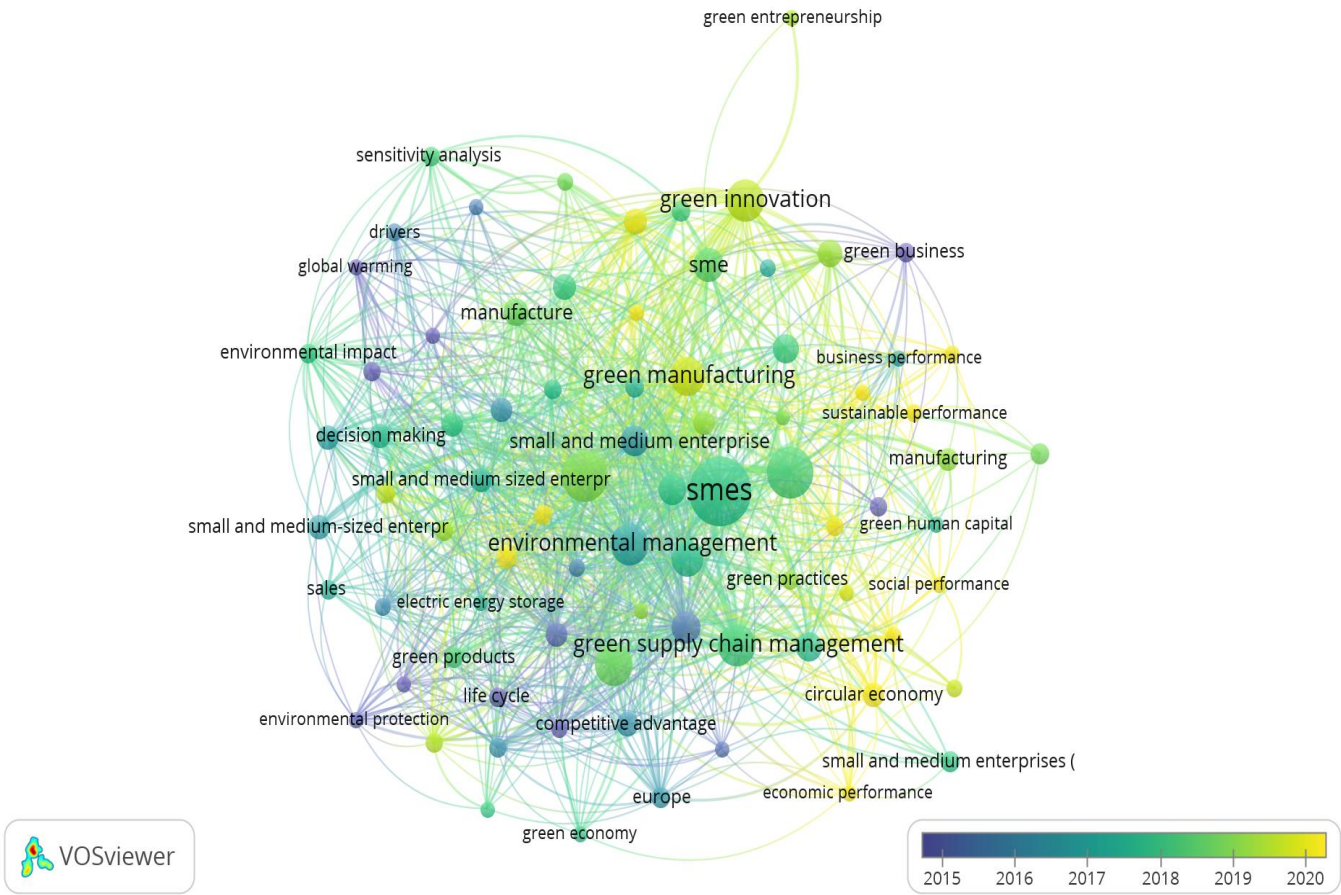

Figure 4. Overlay visualization analysis results

Green manufacturing is an intriguing topic that has recently received attention because the incorporation of sustainable strategies into manufacturing operations has become mandatory in recent years in order to achieve the goal of sustainable development [50], where sustainable development is closely related to business performance [51]. Topics related to green entrepreneurship, on the other hand, are still rarely used in previous research. This is evident in the data visualization, where green entrepreneurship is a new topic with few studies.

Table 2 displays the cluster data for the topics discussed in the article. As a result of the co-occurrence analysis, the data shows that five keyword clusters have formed. Cluster 1 depicts the topics that influence the performance or outcomes of the green economy in SMEs. According to Purwanto et al. [52], which states that green economy model innovation positively affects SMEs' performance, a proactive environmental strategy has a significant effect on company performance [53]. As a result, previous research has demonstrated that applying green economy principles to SMEs has a significant impact on overall business performance.

Cluster 2 displays topics that are closely related to processes or strategies that can be implemented in the implementation of a green economy to SMEs. Environmental protection, the existence of environmental regulations, pollution control, and the application of principles in the creation of green products are examples of strategies that can be implemented. All aspects of strategy are strategic planning that must be carried out by business actors in order to put the green economy concept into action. Cluster 3 demonstrates the existence of programs or activities that SMEs can carry out. The program or activity is based on a strategic plan and will be implemented in cluster 2. Green entrepreneurship, for example, is a program that can be implemented. Cluster 4 depicts the impact that occurs, specifically how the strategy's implementation can result in global warming (if the green economy principle is not implemented) or the existence of environmental performance (environmental performance). Cluster 5 depicts broad topics related to broad concepts in the green economy in SMEs, such as sustainability, sustainable development, environmental technology, and waste management.

Table 2. Categorizes green economy topics

Keywords	Cluster	Keywords	Cluster
business performance	1	corporate social responsibility	3
circular economy	1	economic and social effects	3
eco-innovation	1	green business	3
economic performance	1	green entrepreneurship	3
green human capital	1	green innovation	3
green manufacturing	1	green innovations	3
green performance	1	innovation	3
green practices	1	sustainability	3

green supply chain management	1	environmental impact	4
operational performance	1	environmental management	4
social performance	1	environmental performance	4
sustainable performance	1	global warming	4
sustainable supply chains	1	green marketing	4
competitive advantage	2	green supply chain	4
developing countries	2	environmental sustainability	5
environmental protection	2	environmental technology	5
environmental regulations	2	small and medium sized enterprise	5
green economy	2	sustainable development	5
green products	2	waste management	5
organizational performance	2		
pollution control	2		
strategic planning	2		

4.2.3 Citation analysis

Citation analysis identifies the most frequently cited articles based on the document, the article's source, the organization, the authors, and the country of origin. Citation analysis was performed on documents with a minimum of 5 citations per document, yielding 168 documents with the most citations. Figure 5 depicts the results of the document-based citation analysis. The largest nodule (the highest number of citations) is indicated by a document with the author Chen Y, published in the journal of business ethics, 81(3): 531-543 in 2008. The document received 689 citations, with 11 linked articles. According to this data, articles published in 2008 are still relevant as a reference to the concept of green economy in SMEs.

Table 3 shows the results of an article citation analysis based on article sources (minimum published articles = 5 articles). According to the table, the most cited sources of articles were articles published in journals with a Q1 predicate. This demonstrates that the higher the article's source index, the more articles will be cited.

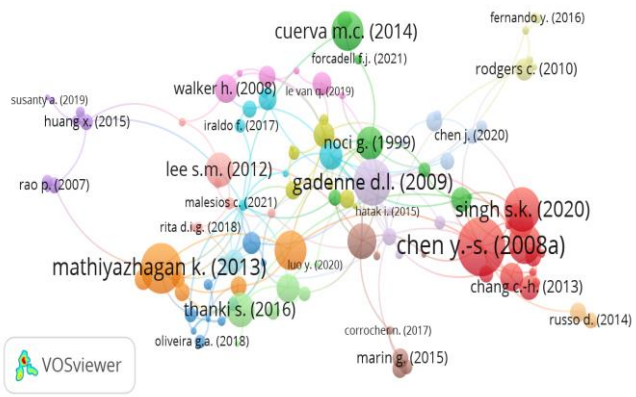

Figure 5. Citation analysis results based on document

Table 3. Results of citation analysis

Sources	Total Link Strength	Citations
journal of cleaner production	43	2,835
journal of business ethics	24	1,638
technological forecasting and social change	9	698
business strategy and the environment	28	348
journal of manufacturing technology management	16	311
corporate social responsibility and environmental management	9	275
production planning and control	5	144
international business management	4	96
international journal of supply chain management	3	38
proceedings of the international conference on industrial engineering and operations management	3	2

Citation is used in scientific works to give credit or recognition for the influence of previous works or to refer to someone with scientific authority. Citation allows the reader to judge what is currently being tested by looking at previous works. Authors are often directly involved in these tests and explain why they agree or even disagree with previous views. The large number of citations will show the impact of an article, so increasing the citations of each article will affect the quality of a journal. Based on the table, the sources of articles from order 1 to 8 are journals that are ranked Q1 in the Scopus database.

4.3 Reporting stage

The present study undertook a classical analysis of a selection of publications that exhibited the highest citation counts, using upon strategic management theory as proposed by Wheelen et al. [19]. The strategic management theory proposed by Wheelen and Hunger encompasses four distinct stages, including environmental scanning, strategy creation, strategy implementation, and assessment and control. Wheelen et al. [19] claim that the process of environmental scanning is a distinct and essential preliminary phase that precedes the formulation of a strategic plan. The process of environmental scanning entails the examination and evaluation of both internal and external elements that have the potential to impact the company. The process of strategy formulation encompasses the identification and establishment of an organization's mission, goals, and strategies. The process of strategy implementation entails the execution of a formulated strategy, whereas assessment and control encompass the ongoing monitoring and necessary adjustments to the strategy.

The outcomes of the planning phase consist of documents that adhere to specific keywords and subject area limitations. The search criteria employed for retrieving articles from the Scopus database include the keywords "Green," "SMEs," and the limitations of subject area to "BUSI" and language to "English". The accessibility of articles is limited by their topic matter and the language employed within them. The data

sources included in this study only consisted of papers pertaining to the fields of business, management, and accounting, all of which were written in the English language. The retrieval of publications containing the specified keywords yielded a total of 350 documents from diverse sources, encompassing journals, book chapters, conference papers, and books published between the timeframe of 2013 to 2022.

The utilization of a strategic management framework within the context of the green economy for SMEs. This review highlights the predominant focus of prior research on the association between green practices and the performance of SMEs [54-56]. The adoption of the green economy will yield various effects on economic, environmental, resource, and social performance [57]. The strategic management framework derived from the analysis of relevant literature is depicted in Figure 6. The green economy of SMEs encompasses the notion of environmental scanning, which may be categorized into two distinct domains: the internal environment and the external environment. This categorization yields many conceptual frameworks.

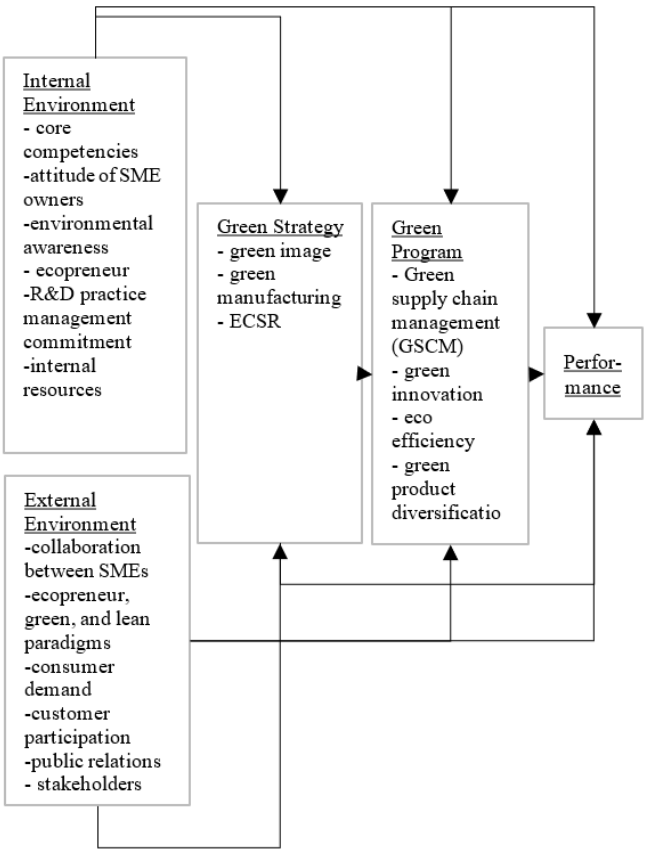

Figure 6. Strategic management framework in the green economy of SMEs

Chen [54] conducted research on the notion of green core competencies and their impact on performance enhancement. SMEs that allocate significant resources and exert substantial efforts towards developing green core competencies can effectively align with stringent international regulations and environmental protection conventions. Furthermore, Chen [54] argues that such investments can lead to an increase in green innovation. Additionally, Thanki et al. [55] suggests that the cultivation of green core competencies can contribute to sustainable growth by facilitating overall performance improvement. This study examines the concept of internal environmental scanning, which encompasses an analysis of several factors such as the resources possessed [58], management attitudes [59, 60], and [61] research demonstrated that a primary barrier preventing small and medium-sized enterprise (SME) owners and managers from adopting environmentally sustainable practices is the limited availability of financial resources. Hatak et al. [59] shown that in addition to functional and economic variables, emotional aspects also play a significant role in motivating individuals. These emotional aspects encompass self-satisfaction, alongside functional factors such as enhanced product quality, and economic factors such as higher revenue. Ecopreneurs perceive business not alone as a means of generating income, but also as a mechanism for effecting social transformation [62]. It also necessitates profound changes at the individual, societal, and institutional levels. The transition from industrial processes to sustainable organizational processes presents business owners with further motivation, as sustainability is associated with altruism and optimism [59].

The process of conducting an external environment scan involves examining the external circumstances surrounding SMEs. This examination encompasses the interactions between SMEs and various stakeholders, including collaborations among SMEs [63], consumer or customer demand [54, 57], relationships with the community [58], and other stakeholders [59]. Additionally, it takes into account the emerging trend of a paradigm shift towards the ecopreneur paradigm [64]. Customers have a significant influence in motivating companies to use green product diversification initiatives [60]. Similarly, according to Singh et al. [64], several factors such as the adoption of new technology, customer attributes, social and government pressures, and the implementation of green supply chain management can be identified as crucial predictors for the successful integration of green manufacturing practices within small and medium-scale organizations in India. SMEs have the capacity to implement various strategies in response to shifts occurring within their internal and external environments. This literature review encompasses several tactics, namely the green image strategy [54], green manufacture strategy [64], and the strategy of environmental social responsibility (ECSR) [65]. The aforementioned tactics are subsequently included into other programs including Green Supply Chain Management (GSCM) [58, 66-69], green innovation [54, 55, 61, 68, 69] ecoefficiency [69], and green product [60].

The implementation of GSCM methods facilitates the generation of novel prospects for client acquisition, while concurrently addressing the purchasing requirements of firms [56]. To bolster their environmental reputation, the industry should demonstrate a strong commitment to sourcing eco-friendly materials from suppliers. Additionally, they could actively promote the significance of sustainability by conducting conferences or seminars focused on environmental topics [67]. The inclusion of small and medium-sized enterprises (SMEs) in public sector procurement processes has the potential to foster sustainable development by facilitating the adoption of environmentally friendly products or technologies [63].

5. CONCLUSION

This research examines a total of 350 publications pertaining to the green economy and its impact on SMEs, which have been sourced from the Scopus database. The

findings indicate a growing utilization of the green economy idea during the past three years. This pertains to the emergence of a requirement for sustainability reports commencing in 2020, with the aim of realizing the vision outlined in the Sustainable Development Goals (SDGs) by the year 2030. The subject matter of sustainable development holds significant relevance within research pertaining to the green economy, since it aligns with one of the fundamental concepts of sustainability, namely the implementation of environmentally conscious practices. In contrast, the subject of green entrepreneurship has remained relatively underexplored in the last two decades, presenting a promising avenue for additional scholarly investigation and advancement.

The primary focus of research opportunities lies in examining solutions for effectively implementing the green economy inside SMEs with the aim of advancing the Sustainable Development Goals (SDGs). The papers that received the highest number of citations were those published in the year 2008, originating from sources that were published in journals indexed in the Q1 category. According to the analysis conducted using the VOS viewer, the countries that have received the most number of reviews are India, the United Kingdom, and Taiwan. Taiwan's status is a subject of contention among several nations, with some recognizing it as an independent country distinct from China, while others regard it as a province of China. The inherent political ambiguity surrounding Taiwan renders it a distinctive situation and a topic of interest for scholars investigating the green economy. Hence, it is deemed suitable to categorize Taiwan distinctively from other nations in the examination.

The present study possesses certain limitations with respect to the availability of data sources. The scope of this study is restricted to the utilization of the Scopus database. Hence, it is feasible to undertake a bibliometric analysis utilizing alternative databases in forthcoming scholarly investigations. Furthermore, during the implementation phase, it is imperative to conduct analysis solely on datasets that provide comprehensive and precise bibliographic details. The presence of incomplete or erroneous data has the potential to impact the outcomes of the analysis. Furthermore, it is worth noting that there has been a steady increase in the number of published publications that address pertinent subjects. Although certain limits exist, the present study makes a valuable contribution to the existing body of knowledge by shedding light on the current research trends pertaining to the implementation of the green economy in SMEs. Furthermore, this research makes a valuable contribution by employing bibliometric techniques to enhance our comprehension of the scholarly literature pertaining to green economies in SMEs.

REFERENCES

[1] Hermundsdottir, F., Aspelund, A. (2021). Sustainability innovations and firm competitiveness: A review. Journal of Cleaner Production, 280: 124715. https://doi.org/10.1016/j.jclepro.2020.124715

[2] Ahmad, S. (2022). Analisis penerapan konsep sustainable development goals sebagai upaya peningkatan kesejahteraan masyarakat menurut perspektif ekonomi islam (Studi pada industri pertambangan pasir di Kecamatan Sendang Agung Kabupaten Lampung Tengah). Doctoral dissertation, Uin Raden Intan Lampung. http://repository.radenintan.ac.id/id/eprint/18112.

[3] Gunawan, J., Permatasari, P., Fauzi, H. (2022). The evolution of sustainability reporting practices in Indonesia. Journal of Cleaner Production, 358: 131798. https://doi.org/10.1016/j.jclepro.2022.131798

[4] Fandira, W., Sulistiyowati, M., Widiyanto, M.R.B. (2022). Implementasi pajak karbon sebagai strategi peningkatan kepatuhan pajak guna menyongsong sustainability development goals 2030. Prosiding Seminar Nasional Ekonomi dan Perpajakan, 2(1): 27-38. http://conference.um.ac.id/index.php/taxcenter/article/view/3467.

[5] Putri, E.I.K., Dharmawan, A.H., Hospes, O., Yulian, B.E., Amalia, R., Mardiyaningsih, D.I., Kinseng, R.A., Tonny, F., Pramudya, E.P., Rahmadian, F., Suradiredja, D.Y. (2022). The oil palm governance: Challenges of sustainability policy in Indonesia. Sustainability, 14(3): 1820. https://doi.org/10.3390/su14031820

[6] Pakpahan, D., Puspitawati, E. (2022). Covid-19 pandemic potential risks for Indonesia's CPO trade. In Proceedings of the 1st International Conference on Contemporary Risk Studies, ICONIC-RS 2022, South Jakarta, DKI Jakarta, Indonesia. http://doi.org/10.4108/eai.31-3-2022.2320951

[7] Kisworo, W., Dewi, M.A.K., Putri, N.R.A. (2022). Mengenal konsep ecopreneurship dalam menghadapi green washing. Jurnal Ilmiah Penalaran dan Penelitian Mahasiswa, 6(1): 1-9.

[8] Tsukanova, T. (2022). Go international to become sustainable: Insights on internationalization, innovativeness, and green practices in SMEs. Journal of the International Council for Small Business, 4(1): 51-58. https://doi.org/10.1080/26437015.2022.2122909

[9] Le, T.T., Ikram, M. (2022). Do sustainability innovation and firm competitiveness help improve firm performance? Evidence from the SME sector in Vietnam. Sustainable Production and Consumption, 29: 588-599. https://doi.org/10.1016/j.spc.2021.11.008

[10] Dzikriansyah, M.A. (2022). Faktor anteseden dan konsekuensi green supply chain management (Studi pada UMKM food and beverage di kota malang). Doctoral dissertation, Universitas Muhammadiyah Malang. https://doi.org/10.21456/vol9iss1pp1-8

[11] Sari, E.N. (2022). Implementasi konsep green product oleh umkm kuliner khas bengkulu dalam perspektif etika bisnis islam. Doctoral dissertation, UIN Fatmawati Sukarno Bengkulu.

[12] Toryanto, C.J.K., Indriani, F. (2022). Analisis penerapan konsep green marketing pada umkm sektor non-pangan di pulau Jawa. Doctoral dissertation, UNDIP: Fakultas Ekonomika dan Bisnis. https://repofeb.undip.ac.id/id/eprint/10362.

[13] Heriyanto, H., Noviardy, A. (2019). Kinerja green supply chain management dilihat dari aspek reverse logistic dan green procurement pada UKM kuliner di kota palembang. MBIA, 18(1): 65-75. https://doi.org/10.33557/mbia.v18i1.322

[14] Andrian, N. (2022). Konstruksi dan penerapan model green supply chain management (GSCM) pada UKM kuliner di Kota Palembang. Universitas Bina Darma Palembang. https://eprints.binadarma.ac.id/14437/.

[15] Putra, W.E., Utama, L. (2022). Pengaruh green entrepreneurial orientation dan green innovation terhadap kinerja berkelanjutan industri gigi palsu. Jurnal

Manajerial Dan Kewirausahaan, 4(2): 534-545. https://doi.org/10.24912/jmk.v4i2.18262
[16] Damaianti, I. (2022). The opportunities of green intellectual capital for industrial sustainability: A systematic review. Sainteks: Jurnal Sains dan Teknik, 4(2): 141-153. https://doi.org/10.37577/sainteks.v4i2.465
[17] Mohammadian, H.D. (2022). Mapping the future global smes growth via hybrid SMEs/SME 5.0/tomorrow's SMEs concept through the 5th wave, i-sustainability plus and DCT theories. Management and Information Technology in the Digital Era, 29: 173-206. https://doi.org/10.1108/S1877-636120220000029011
[18] Semuel, H., Mangoting, Y., Hatane, S.E. (2022). The interpretation of quality in the sustainability of Indonesian traditional weaving. Sustainability, 14(18): 11344. https://doi.org/10.3390/su141811344
[19] Wheelen, T.L., Hunger, J.D., Hoffman, A.N., Bamford, C.E. (2017). Strategic Management and Business Policy (Vol. 55). Boston: Pearson.
[20] Barney, J. (1991). Firm resources and sustained competitive advantage. Journal of Management, 17(1): 99-120. https://doi.org/10.1177/014920639101700108
[21] David, R.J., Han, S.K. (2004). A systematic assessment of the empirical support for transaction cost economics. Strategic Management Journal, 25(1): 39-58. https://doi.org/10.1002/smj.359
[22] Dabić, M., Maley, J.F., Moeller, M, Vlačić, B. (2021). Embodiment of talent management within entrepreneurship: A bibliometric approach. In Contemporary Talent Management, pp. 189-220. Routledge: NY, New York.
[23] Hitt, M.A. (2007). Strategic Management Inputs. Thomson.
[24] Thompson A.A., Strickland A.J. (2001). Strategic Management: Concepts and Cases (12th ed.). McGraw-Hill/Irvin.
[25] Malesios, C., Skouloudis, A., Dey, P.K., Abdelaziz, F.B., Kantartzis, A., Evangelinos, K. (2018). The impact of SME sustainability practices and performance on economic growth from a managerial perspective: Some modeling considerations and empirical analysis results. Business Strategy and the Environment, 27(7): 960-972.
[26] Prasanna, R., Jayasundara, J., Naradda Gamage, S.K., Ekanayake, E., Rajapakshe, P., Abeyrathne, G. (2019). Sustainability of SMEs in the competition: A systemic review on technological challenges and SME performance. Journal of Open Innovation: Technology, Market, and Complexity, 5(4): 100. https://doi.org/10.3390/joitmc5040100
[27] Dossou, P.E. (2018). Impact of sustainability on the supply chain 4.0 performance. Procedia Manufacturing, 17: 452-459. https://doi.org/10.1016/j.promfg.2018.10.069
[28] Basri, W.S.M., Siam, M.R. (2019). Social media and corporate communication antecedents of SME sustainability performance: A conceptual framework for SMEs of Arab world. Journal of Economic and Administrative Sciences, 35(3): 172-182. https://doi.org/10.1108/JEAS-01-2018-0011
[29] Nasihin, A.K., Munandar, J.M. (2022). Analisis pencapaian peran wanita dan entrepreneurial marketing terhadap pengembangan usaha mikro kecil menengah di Jepara. Jurnal Pendidikan dan Konseling, 4(5): 1473-1481. https://doi.org/10.31004/jpdk.v4i5.6795
[30] Arcese, G., Flammini, S., Lucchetti, M.C., Martucci, O. (2015). Evidence and experience of open sustainability innovation practices in the food sector. Sustainability, 7(7): 8067-8090. https://doi.org/10.3390/su7078067
[31] Astadi, P., Kristina, S., Retno, S., Yahya, P., Agni Alam, A. (2022). The long path to achieving green economy performance for micro small medium enterprise. Journal of Innovation and Entrepreneurship, 11(1): 1-19. https://doi.org/10.1186/s13731-022-00209-4
[32] Bharati, D., Patra, G. (2022). The challenges for SMES in green finance initiatives adoption. Journal of Positive School Psychology, 6(2): 313-325.
[33] Munzlinger, E., Narciso, F.B., de Queiroz, J.E.R. (2012). Sistematização de revisões bibliográficas em pesquisas da área de IHC. In Companion Proceedings of the 11th Brazilian Symposium on Human Factors in Computing Systems, pp. 51-54.
[34] Tranfield, D., Denyer, D., Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. British Journal of Management, 14(3): 207-222. https://doi.org/10.1111/1467-8551.00375
[35] Fernandes, C., Ferreira, J.J., Veiga, P.M., Kraus, S., Dabić, M. (2022). Digital entrepreneurship platforms: Mapping the field and looking towards a holistic approach. Technology in Society, 70: 101979. https://doi.org/10.1016/j.techsoc.2022.101979
[36] Pattah, S.H. (2013). Pemanfaatan kajian bibliometrika sebagai metode evaluasi dan kajian dalam ilmu perpustakaan dan informasi. Khizanah Al-Hikmah: Jurnal Ilmu Perpustakaan, Informasi, Dan Kearsipan, 1(1): 47-57.
[37] Mallig, N. (2010). A relational database for bibliometric analysis. Journal of Informetrics, 4(4): 564-580. https://doi.org/10.1016/j.joi.2010.06.007
[38] Silva, G.G.B.S., Ferraz, P.F.P., Damasceno, F.A., Zotti, M.L.A.N., Barbari, M. (2022). Compost barns: A bibliometric analysis. Animals, 12(19): 2492. https://doi.org/10.3390/ani12192492
[39] Mohd Ghazali, N., Mohd Said, M.N., Wan Mohd Jaafar, W.S., Muhmad Kamarulzaman, A.M., Saad, S.N.M. (2022). Research opportunity on fractional cover of forest: A bibliometric review. Forests, 13(10): 1664. https://doi.org/10.3390/f13101664
[40] Carvalho, B., Wiek, A., Ness, B. (2022). Can b corp certification anchor sustainability in SMEs? Corporate Social Responsibility and Environmental Management, 29(1): 293-304. https://doi.org/10.1002/csr.2192
[41] Permatasari, P., Kosasih, E. (2022). Analysis of small and medium enterprises'(SMEs) sustainability reporting to develop sustainability reporting guideline. International Journal of Entrepreneurship and Sustainability Studies, 2(1): 1-24. https://doi.org/10.31098/ijeass.v2i1.822
[42] Rong, H., Duan, Y., Zhang, G. (2022). A bibliometric analysis of membrane computing (1998-2019). Journal of Membrane Computing, 4: 177-207. https://doi.org/10.1007/s41965-022-00098-2
[43] Azzahra, B. (2022). Sustainability accounting and integrated reporting: Strategi kepemimpinan berkelanjutan perusahaan di masa depan. In National Seminar of PBI (English Language Education), pp. 43-51.

https://proceeding.unikal.ac.id/index.php/nspbi/article/view/933.
[44] Khandelwal, U., Singh, T.P. (2022). Willingness to accept green practices by manufacturing SMEs in India. International Journal of Social Ecology and Sustainable Development (IJSESD), 13(1): 1-15. https://doi.org/10.4018/IJSESD.289637
[45] Fahad, S., Alnori, F., Su, F., Deng, J. (2022). Adoption of green innovation practices in SMEs sector: Evidence from an emerging economy. Economic Research-Ekonomska Istraživanja, 35(1): 5486-5501. https://doi.org/10.1080/1331677X.2022.2029713
[46] UK Small Business Statistics. Business population estimates for the UK and regions in 2020. https://tinyurl.com/yy22wc9k.
[47] Chang, C.H., Shih, M.Y., Peng, H.J. (2022). Enhancing entrepreneurial opportunity recognition: Relationships among green innovative capability, green relational capability, and co-innovation behavior. Business Strategy and the Environment, 31(4): 1358-1368. https://doi.org/10.1002/bse.2959
[48] Zhironkin, S., Cehlár, M. (2022). Green economy and sustainable development: The outlook. Energies, 15(3): 1167. https://doi.org/10.3390/en15031167
[49] Yang, Q., Du, Q., Razzaq, A., Shang, Y. (2022). How volatility in green financing, clean energy, and green economic practices derive sustainable performance through ESG indicators? A sectoral study of G7 countries. Resources Policy, 75: 102526. https://doi.org/10.1016/j.resourpol.2021.102526
[50] Devika, K., Shankar, K.M. (2022). Paving the way for a green transition through mitigation of green manufacturing challenges: A systematic literature review. Journal of Cleaner Production, 368: 132578. https://doi.org/10.1016/j.jclepro.2022.132578
[51] Ljung, A., Enache, M. (2022). Doing more than the minimum: A case study of SMEs' voluntary compliance to sustainability reporting. Bachelor thesis, Digitala Vetenskapliga Arkivet. http://www.diva-portal.org/smash/get/diva2:1667133/FULLTEXT01.pdf.
[52] Purwanto, A., Fahmi, K., Irwansyah, I., Hadinegoro, R., Rochmad, I., Syahril, S., Sulastri, E. (2022). The role of green innovation and green supply chain management on the sustainability of the performance of SMEs. Journal of Future Sustainability, 2(2): 49-52.
[53] Al Doghan, M.A., Abdelwahed, N.A.A., Soomro, B.A., Ali Alayis, M.M.H. (2022). Organizational environmental culture, environmental sustainability and performance: The mediating role of green HRM and green innovation. Sustainability, 14(12): 7510. https://doi.org/10.3390/su14127510
[54] Chen, Y.S. (2008). The driver of green innovation and green image–green core competence. Journal of Business Ethics, 81: 531-543. https://doi.org/10.1007/s10551-007-9522-1
[55] Thanki, S., Govindan, K., Thakkar, J. (2016). An investigation on lean-green implementation practices in Indian SMEs using analytical hierarchy process (AHP) approach. Journal of Cleaner Production, 135: 284-298. https://doi.org/10.1016/j.jclepro.2016.06.105
[56] Lee, S.M., Kim, S.T., Choi, D. (2012). Green supply chain management and organizational performance. Industrial Management & Data Systems, 112(8): 1148-1180. https://doi.org/10.1108/02635571211264609
[57] Luo, Y., Jie, X., Li, X. (2020). The organic joint point of new kinetic energy and green development in Chinese manufacturing SMEs. International Journal of Production Research, 58(23): 7269-7291. https://doi.org/10.1080/00207543.2020.1777341
[58] Rita, D.I., Ferreira, F.A., Meidutė-Kavaliauskienė, I., Govindan, K., Ferreira, J.J. (2018). Proposal of a green index for small and medium-sized enterprises: A multiple criteria group decision-making approach. Journal of Cleaner Production, 196: 985-996. https://doi.org/10.1016/j.jclepro.2018.05.275
[59] Hatak, I., Floh, A., Zauner, A. (2015). Working on a dream: Sustainable organisational change in SMEs using the example of the Austrian wine industry. Review of Managerial Science, 9: 285-315. https://doi.org/10.1007/s11846-014-0157-1
[60] Le Van, Q., Viet Nguyen, T., Nguyen, M.H. (2019). Sustainable development and environmental policy: The engagement of stakeholders in green products in Vietnam. Business Strategy and the Environment, 28(5): 675-687. https://doi.org/10.1002/bse.2272
[61] Marin, G., Marzucchi, A., Zoboli, R. (2015). SMEs and barriers to eco-innovation in the EU: Exploring different firm profiles. Journal of Evolutionary Economics, 25: 671-705. https://doi.org/10.1007/s00191-015-0407-7
[62] Rodgers, C. (2010). Sustainable entrepreneurship in SMEs: A case study analysis. Corporate Social Responsibility and Environmental Management, 17(3): 125-132. https://doi.org/10.1002/csr.223
[63] Walker, H., Preuss, L. (2008). Fostering sustainability through sourcing from small businesses: Public sector perspectives. Journal of Cleaner Production, 16(15): 1600-1609. https://doi.org/10.1016/j.jclepro.2008.04.014
[64] Singh, M., Singh, K., Sethi, A.S. (2020). Justification of green manufacturing implementation parameters using fuzzy-based simulation model. Journal of Science and Technology Policy Management, 11(4): 377-394. https://doi.org/10.1108/JSTPM-10-2019-0101
[65] Forcadell, F.J., Úbeda, F., Aracil, E. (2021). Effects of environmental corporate social responsibility on innovativeness of Spanish industrial SMEs. Technological Forecasting and Social Change, 162: 120355. https://doi.org/10.1016/j.techfore.2020.120355
[66] Huang, X., Tan, B.L., Ding, X. (2015). An exploratory survey of green supply chain management in Chinese manufacturing small and medium-sized enterprises: Pressures and drivers. Journal of Manufacturing Technology Management, 26(1): 80-103. https://doi.org/10.1108/JMTM-05-2012-0053
[67] Mathiyazhagan, K., Govindan, K., NoorulHaq, A., Geng, Y. (2013). An ISM approach for the barrier analysis in implementing green supply chain management. Journal of Cleaner Production, 47: 283-297. https://doi.org/10.1016/j.jclepro.2012.10.042
[68] Cuerva, M.C., Triguero-Cano, Á., Córcoles, D. (2014). Drivers of green and non-green innovation: Empirical evidence in Low-Tech SMEs. Journal of Cleaner Production, 68: 104-113. https://doi.org/10.1016/j.jclepro.2013.10.049
[69] Noci, G., Verganti, R. (1999). Managing 'green' product innovation in small firms. R&D Management, 29(1): 3-15. https://doi.org/10.1111/1467-9310.00112

NOMENCLATURE

GDP	Gross Domestic Product
RBV	Resources Based View
SMEs	Small and Medium Enterprises
Q1	the top 25% of journals in the list