Green Marketing Practices in SMEs Sector; A Bibliometric Information study of a reputable journal database

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ARTICLE INFO	ABSTRACT
	Introduction: Addressing environmental challenges requires immediate action across all sectors. As key drivers of economic growth, SMEs hold significant potential to implement green marketing strategies that reduce environmental impact while fostering sustainable development. This study leverages bibliometric analysis to identify trends and research gaps in green marketing within the SME context. **Objectives:** This research seeks to, explore global themes and developments in green marketing for SMEs, analyze trends in peer-reviewed journals over time, and provide actionable insights through visual bibliometric analysis. **Methods:** A comprehensive bibliometric analysis was conducted following PRISMA guidelines, utilizing data from Scopus, Tandfonline, Springer, Emerald, and ScienceDirect. A total of 25 relevant articles were analyzed using tools such as EndNote and VosViewer to map keyword patterns and thematic connections. **Results:** The findings reveal a rising interest in green marketing for SMEs, particularly since 2016. Dominant themes include sustainability, competitive advantage, and green packaging, while emerging topics such as stakeholder engagement and green innovation present untapped research opportunities. Keywords like "green marketing orientation" and "business performance" stand out as central to advancing SMEs sustainability practices. **Conclusion:** Green marketing in SMEs has evolved from basic sustainability adoption to more sophisticated strategies, including eco-friendly packaging and stakeholder collaboration. Future studies should delve deeper into underexplored areas, such as consumer behavior and stakeholder roles, to further enhance SMEs' competitiveness and long-term sustainability. **Keywords:** Green marketing, SMEs, bibliometric analysis, Prisma information.

INTRODUCTION

In the last decade, environmental issues have become a serious challenge for every developed and developing country [1]. This situation, there needs to be a serious response to follow up for the sake of future generations, not least in a field that has high potential as an icon of handling problems, namely SMEs. As explained by [2] green rating system is very important because it can prevent SMEs from wasting resources and polluting the environment, thus maintaining sustainable economic growth. Preserving the environment by implementing appropriate strategies will help the world's burden in implementing green marketing, there needs to be continued attention and movement so that the application of green marketing strategies can be implemented, as explained by [3] green marketing can guide targeted interventions to promote sustainability.

The Swedish Institute [24] reports that Sweden has successfully implemented green marketing as part of the national culture. With a carbon tax policy since 1991, Sweden encourages companies to produce eco-friendly products and run marketing campaigns that emphasise the positive impact on the environment. Swedish company IKEA has committed to producing 100% of its products from renewable or recyclable materials by 2030. Not only that,

Germany has a reputation as a European leader in green marketing, especially in the automotive sector. Companies such as BMW and Volkswagen have developed electric and hybrid vehicle technologies as part of their green marketing strategy. Germany also implements strict policies regarding e-waste management, which supports environmental awareness in society [23]. In the country of South Korea launched the Green New Deal in 2020 to promote clean and sustainable energy. This has encouraged companies such as LG and Samsung to focus on energy-efficient products and sustainable technologies, as well as creating marketing campaigns to demonstrate their commitment to the environment [22].

Previous studies explain, the importance of implementing Green marketing around the world [4] its findings highlight the importance of stakeholders in providing encouragement to SMEs to implement Green Marketing, as well as empirical results [5] in his research explains how product innovation can be attentive to consumers, SMEs that market innovative environmentally friendly products, will provide marketing performance that is certainly very profitable. Previous studies explain how to create SMEs product differentiation strategies to create a competitive advantage in facing the global market [6] has found that local SMEs environmentally friendly products can attract the hearts of the global market [7]. typical food umkm research has also been researched by [26] which only covers the region in Indonesia, and has not become a world concern.

Looking at the situation of the marketing field in the current era, there is a need for in-depth literacy studies to find out the actual picture that exists in reputable journal literacy, there is no bibliometric literacy regarding Green Marketing in the SMEs sector to date so that the author will fill the gap, the author will provide a specific description of the application of Green Marketing in the SMEs sector in the world by providing reference references to journals that have been published previously in reputable journals. The study in this article, will try to analyse the referred journal as a reference and provide valuable conclusions in the field of environmental marketing, especially Green Marketing in the context of SMEs, this article, will provide input to future researchers to provide novelty, provide new insights into the history of environmentally friendly marketing in the context of SMEs. The objectives of this paper are: (a) to investigate and analyze the themes related to green marketing in the SMEs sector in the world. (b) we will present how this research trend has developed based on references to reputable journals over time to analyze the potential for future research related to green marketing in the SME sector. (c) Finally, we will present the data visually through bibliometric analysis with the aim of finding out how the keywords generated can provide an overview, as a suggestion for future researchers.

METHODS

The unit of analysis in this article uses Bibliometric analysis to obtain detailed information based on relevant references to the topic of this article. First, we will use the filtering method to find journals that are relevant to the topic of the article, namely "Green Marketing" and "SMEs", at the initial stage the author will search the database of reputable journals, namely; Scopus, Tandfonline, Springer, Emerald, and Sciencedirect to get reputable journals, the author clearly describes how to get data by using the prism diagram tool below:
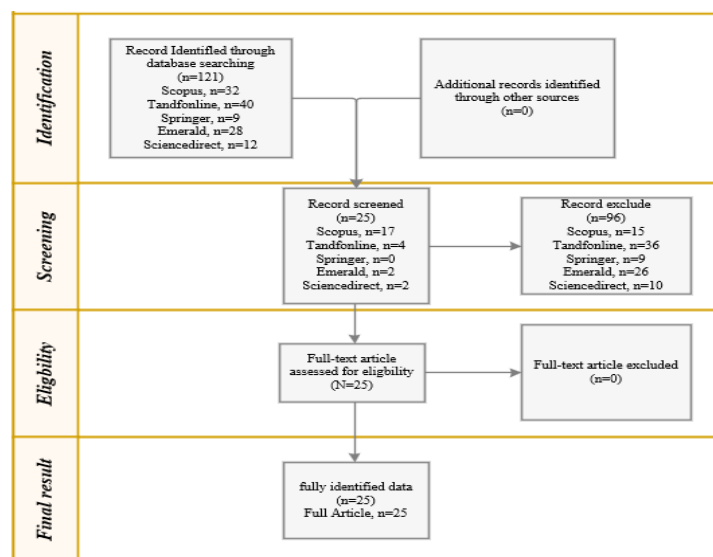

Figure 1. Prism Diagram

The following is a detailed explanation of how the author gets the data that ultimately gets the final decision, the following is a flow diagram explanation:

1. In the initial identification stage, the author succeeded in obtaining journals by using the filters available on the journal search system, the initial identification of the author found initial results, namely: Scopus, n=32 Tandfonline, n=40 Springer, n=9 Emerald, n=28 and Sciencedirect, n=12, as an additional note there is no search on other sites.

2. In the screening stage, the authors evaluated the journals obtained through Scopus, Tandfonline, Springer, Emerald, and Sciencedirect. Rigorous checks were carried out by reviewing the journals obtained at the beginning of the screening. At this stage the author conducts a rigorous examination of the journals obtained by providing special journal provisions that contain information about Green Marketing in SMEs, so that at this stage the author evaluates and produces the final results of the conclusion of journals according to the topic, namely; Scopus, n = 17 Tandfonline, n = 4 Springer, n = 0 Emerald, n = 2 Sciencedirect, n = 2 with a total of 25 journals.

3. At the Eligibility stage, the researcher conducted a review of the 25 journals obtained, at this stage the author studied in depth in terms of, problems / introduction, methods used, and the results of the research. At this stage the author assesses whether the journals obtained can answer the topic of this article or not! Based on the review of the 25 journals, the author can conclude that the 25 journals in this stage are considered suitable for further analysis.

4. In the final result stage, researchers finalised 25 selected journals to answer the article topics.

Second, the author conducts a descriptive analysis of the 25 selected journals, then analyses the number of journals published based on the year of publication, then analyses the number of citations. Then third, is a bibliometric analysis of the 25 selected journals, in this analysis the author will provide an overview for keywords related to Green Marketing in SMEs, the author will improve the structure of data references using citation tools (such as, ENDNOTE, MENDELEY, ETC) with the aim of improving the Title, Abstract, and Keyword Structure. Then the data is saved in RIS format, which is then analysed using VosViewer. In the VosViewer analysis, the author will get an overview of the combination of keywords contained in the title, abstract, and keywords in the selected journal, then the author will try to investigate the sentence structure so as to get an overview of the combination that can be a conclusion in this article, the combination of sentences contained in the selected article will be a final conclusion that will support to answer the questions in this research visually.

RESULTS

Based on the extracted journals, we tried to present a diagram containing information that reveals the number of journals published each year. We did not give a year limit, in order to be able to know in detail the research trends related to the topic. This way, we can provide a broad and specific picture, and the following is the analysed information that we packaged based on the number of articles and the year of publication:
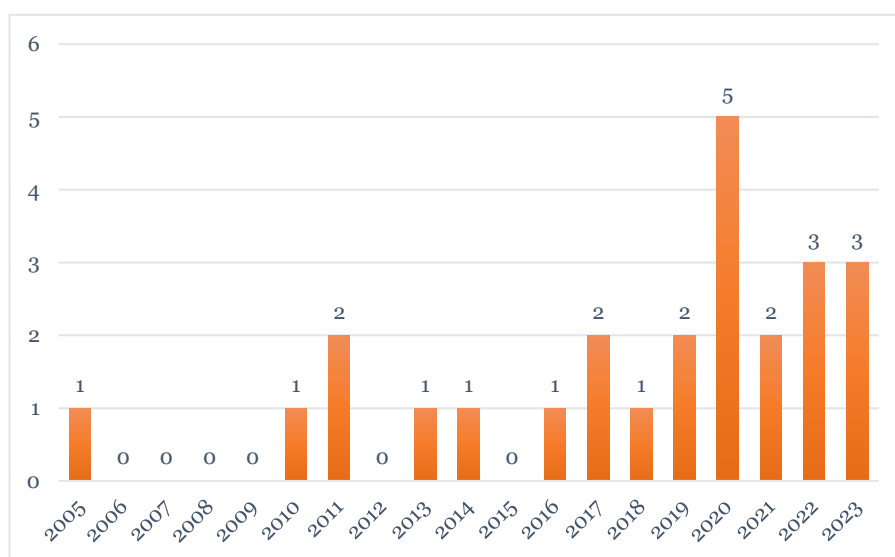

Figure 2: Graph of Number of Article Publications

Based on the figure above, it can be seen that the oldest document publication identified, the initial research that reviewed the practice of green marketing in the SMEs sector began in 2005 the research was conducted by[8] with the title of his research, "Design of a 'green grade' rating system for the environmental performance assessment of a firm", his research reviewed new research meaning that his research reviewed the application of green marketing in the SMEs sector, The method used is the quantitative hierarchical analytical method, and suggests that a green grade rating system can be very important for small and medium enterprises (SMEs) because small and medium enterprises (SMEs) produce most of the output value in industry in any country and are a major source of pollution due to their outdated technology and limited capital.

Then in the previous year 2005 to 2015, during the last 10 years this topic has never been reviewed by researchers afterwards, only a few have raised the issue. Then the increasing trend occurred in 2016 until now in 2023, in that span there were 19 publications of articles into reputable journals and this number will continue to increase. The latest issues in the span of the last 5 years (2018 to 2023) can be seen in the previous data in table 2, only recently in 2023 research on the topic was conducted by [9-12].

The next analysis is an analysis that aims to determine the trend of article citations based on articles published by each author, as has been done by [25] we will try to provide the provisions of the top 10 authors with the most citations as a reference. by looking at the citations used we can identify in depth how themes related to green marketing practices in the SME sector, by looking at the number of citations it can be concluded that themes related to green marketing practices are still interesting to review. The following is a recap of citations based on published articles ranging from the most to the least.

Table 1. Citation trends based on published articles

No.		Authors	Title	Cited by
1	[13]	(Fernández-Viñé et al., 2010)	Eco-efficiency in the SMEs of Venezuela. Current status and future perspectives	94
2	[14]	(Raharjo, 2019)	The role of green management in creating sustainability performance on the small and medium enterprises	42
3	[15]	(Oxborrow & Brindley, 2013)	Adoption of "eco-advantage" by SMEs: Emerging opportunities and constraints	40
4	[16]	(Maziriri, 2020)	Green packaging and green advertising as precursors of competitive advantage and business performance among manufacturing small and medium enterprises in South Africa	35
5	[17]	(Sugandini et al., 2020)	Green supply chain management and green marketing strategy on green purchase intention: SMEs case	33
6	[18]	(Chahal et al., 2014)	Conceptualisation, development and validation of green marketing orientation (GMO) of SMEs in India: A case of electric sector	23
7	[19]	(Rahbauer et al., 2016)	Adoption of green electricity by small- and medium-sized enterprises in Germany	19
8	[20]	(Aryanto et al., 2018)	Implementing eco-innovation by utilising the internet to enhance firm's marketing performance: A study of green batik small and medium enterprises in Indonesia	17
9	[8]	(Liu & He, 2005)	Design of a 'green grade' rating system for the environmental performance assessment of a firm	15
10	[21]	(Warren, 2017)	The potential of smart technologies and micro-generation in UK SMEs	11

In the recap above, it can be seen that the most citations are research conducted by [13] from the last report that the citations in this study were 94 citations, where the research raised by researchers in Venezuela discussed the issue of implementing eco-efficiency. The valuable findings explain that the implementation of eco-efficiency practices is not considered as an incentive to improve competitiveness so that the environmental strategies implemented generally aim to reduce costs or avoid non-compliance sanctions and negative impacts on corporate image. Recycling and reuse of materials, especially packaging materials, are common practices; however, other environmental tools or practices have not been implemented, e.g., environmental management systems (EMS), processes, product and service design tools based on the product life cycle, renewable energy resources, or green marketing. The researchers explained that there are differences among the eight industrial sectors analysed, the food and chemical industry has a higher eco-efficiency practices index, and the plastic and wood industry have a lower eco-efficiency practices index, so we

conclude that the food and chemical industry needs special attention as a reference for future researchers based on the results of the research implications.

The next analysis is bibliometric analysis using VosViewer, the following analysis is an analysis that aims to determine the relationship between keywords that are interconnected with other keywords, so as to produce important conclusions in producing a research recommendation in the future. At this stage the results of the analysis of scopus journal searches that have been sorted based on the theme of the article are then analysed using Vosviewer with the analysis units in VosViewer, namely: Network Visualisation (NV), Overlay Visualisation (OV), and Density Visualisation (DV). We did several steps in using VosViewer software; Firstly, we provided the citation data that has been corrected structure based on the data needed. Second, we created a new worksheet by using the create menu and selecting create a map based on text data then select read data form reference manager files. Then, the next step is to choose RIS manager then directed to the file (RIS) that will be analysed, then on the choose fields page we select the title and abstract fields, then next and we select full counting, then choose threshold will appear we adjust the occurrences of at least 3 words, resulting in 127 meet the threshold, the next step chooses number of terms we maximise. Then the final step is to select non-standard words and words that do not describe important information (such as articles, cases, links, examples, recommendations and so on). The following are the results of the bibliometric analysis using VosViewer which we will explain in 3 parts in the next paragraph.

In the Network Visualisation (NV) analysis, the author will conduct several units of analysis by providing an overview based on important keywords contained in the visual image. The relationship between core keywords (such as: Green Marketing) and supporting keywords (such as: SMEs) will then be reviewed with the aim of finding empirical or theoretical gaps. The following are the results of the Network Visualisation (NV) analysis using VosViewer:
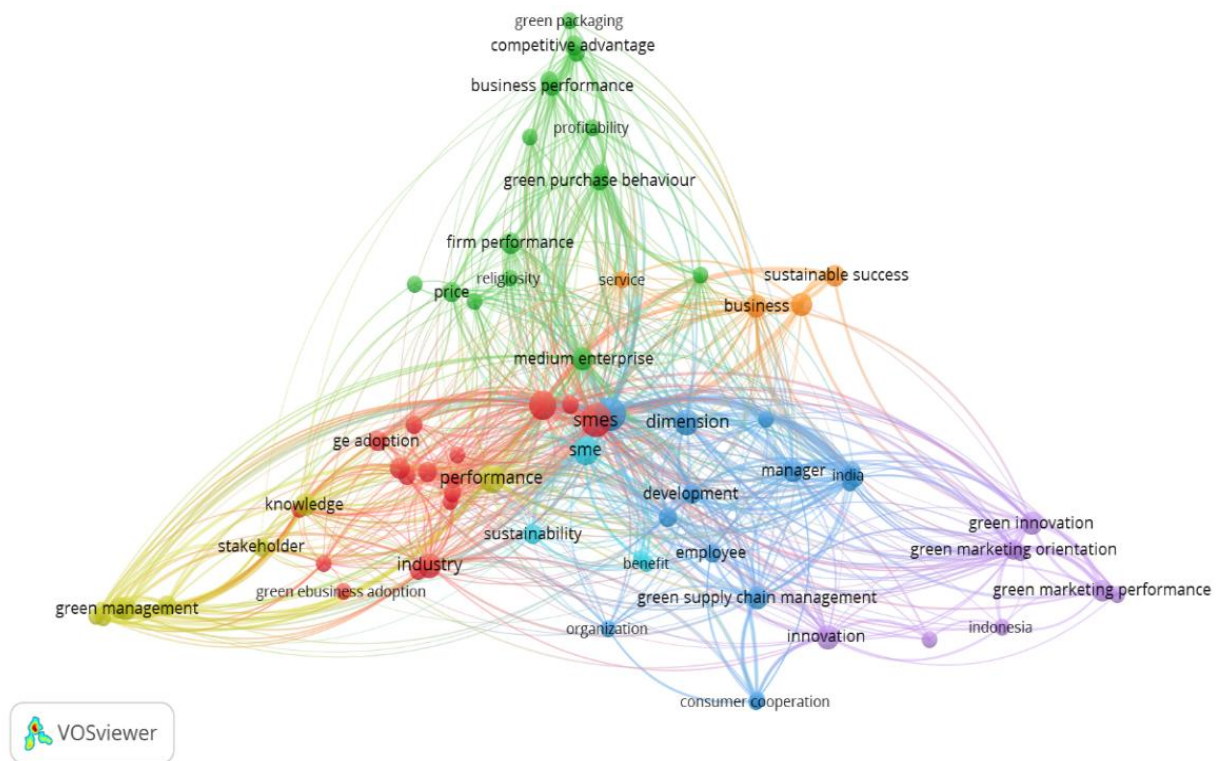

Figure 3. Network Visualisation (NV)

The picture above is the result of Network Visualisation (NV) analysis, there are 7 clusters where the seven clusters have their own keywords, the initial identification before the keywords were selected was 127 keywords then in the final results after through selection produced 73 keywords where the keywords were in accordance with theory, scientific and practical fields. Based on the results of the analysis using VosViewer we get a link between Green Marketing and SMEs, here are the results of keyword links that identify Green Marketing and SMEs:

Figure 4. Keyword linkage with SMEs

Figure 5. Keyword linkage with Green Marketing
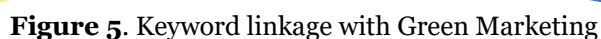
In Figure 4 and Figure 5 are inter-key links that identify the relationship between green marketing (blue clusters) and SMEs (red clusters), it is clear that the two figures are closely related in the same substance, namely the application of Green Marketing in the SMEs sector, Keywords such as SMEs, performance, sustainability, and medium enterprises are at the centre of the network, indicating that these topics are the main focus and are often discussed in related literature. This indicates that the issue of sustainability and performance of SMEs in implementing green marketing has received widespread attention from researchers. In the outer paths, the outer paths in this network, as marked in green, orange and blue circles, indicate topics that are beginning to receive attention but have not been explored in depth. In the Green Circle, Green packaging, competitive advantage, and business performance are detected. The focus on how green packaging can create competitive advantage for SMEs is

still relatively unexplored. The Orange Circle consists of green management, stakeholders, and knowledge. This area provides an opportunity to examine the role of green management as well as stakeholder engagement in the success of SMEs green strategies. And finally the blue circle reviews green innovation, green marketing orientation, and green marketing performance. This grouping indicates the importance of green innovation and green marketing orientation in improving SMEs green marketing performance, which offers more room for research development.

In the Overlay Visualisation (OV) analysis section, the author will further review research trends related to the theme of the article based on the year in which the keywords are identified in the visual image. In this section, the researcher will provide an overview of how the keywords are formed and then connected to the year that appears in the analysis. Here are the keyword trends by year in the Overlay Visualisation (OV) analysis:
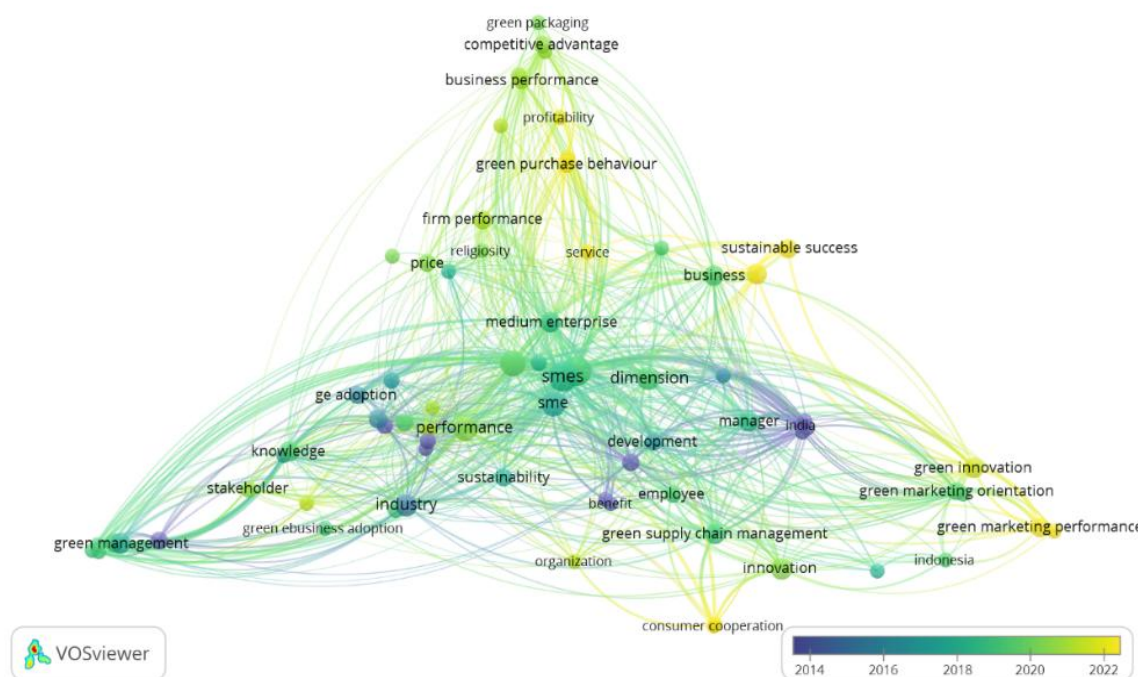

Figure 6. Treen Year topic of Green Marketing SMEs

Concepts such as green management, GE adoption, sustainability, and green business adoption are in blue. This indicates that in the early period, academic attention focused more on green management and the adoption of green business practices. This theme indicates that research during this period mostly addressed fundamental aspects such as sustainability adoption and its impact on SMEs. This makes sense because during this period, the concept of sustainability began to develop as a strategic focus in the business sector. Keywords such as green packaging, competitive advantage, green purchasing behaviour, business performance, and sustainable success appear in yellow. This indicates that more recent research has highlighted the relationship between green marketing practices and business performance and competitive advantage. This focus reflects an increased awareness of the importance of green innovations such as eco-friendly packaging and how green practices can influence consumer behaviour and the long-term sustainability of SMEs. Keywords such as SMEs, sustainability, performance and green marketing orientation have large node sizes and are at the centre of the network, indicating a high degree of connectivity. This means that these concepts are at the core of green marketing research in SMEs. Green innovation and green marketing performance, located in the green-yellow cluster, indicate a growing interest in evaluating the impact of innovation on green marketing performance. Research on green marketing in SMEs has evolved from addressing early adoption of green practices (e.g., GE adoption and green business adoption) to more strategic implementations, such as the use of green packaging and its effect on competitive advantage. Recent publications highlight the importance of green purchase behaviour and its impact on MSME business performance. It confirms that green marketing practices are not only an environmental necessity but also as a business strategy to create market value and competitive advantage to highlight consumers.

Density Visualization (DV) analysis in this article aims to find out how concentrated the keywords used, or how often the keywords are mentioned in their articles, the benefit in this analysis is to know clearly and in detail that the keywords have interest. The following are the results of the Density Visualisation (DV) analysis using VosViewer:
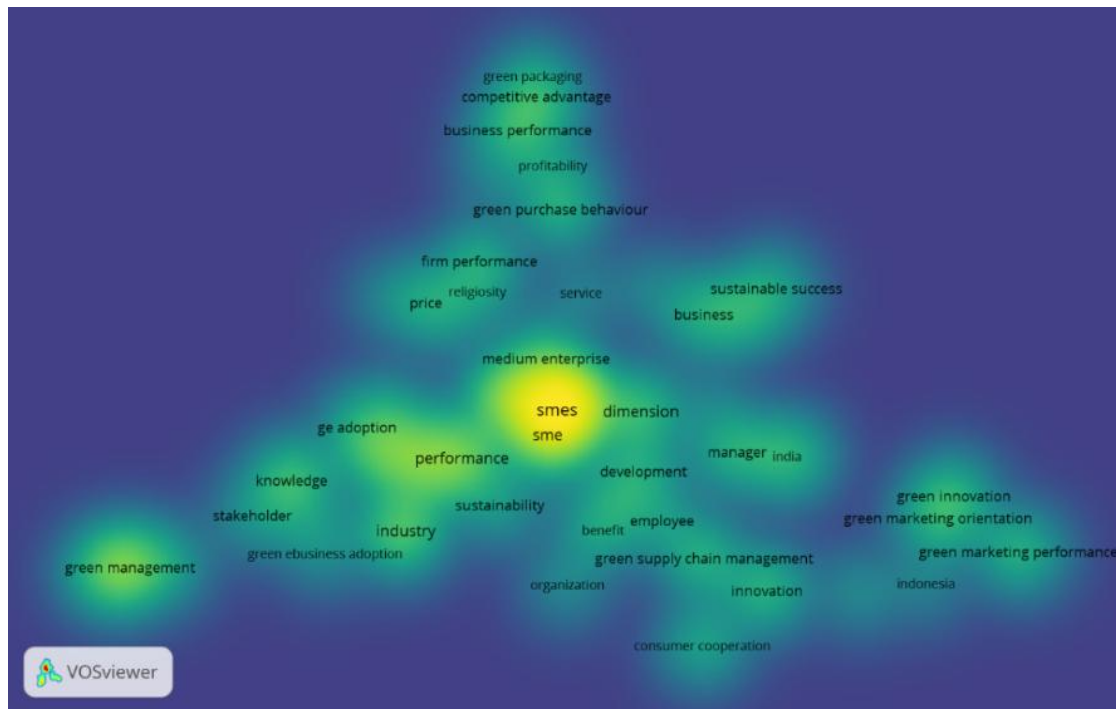

Figure 7. Impact of Green Marketing SMEs research

The results of the density map visualisation above show that research on green marketing in the scope of SMEs has paid significant attention to topics such as sustainability, performance, and medium enterprise, which are marked in bright yellow on the map. This indicates that aspects of sustainability and business performance are the main focus in the previous literature. However, areas with a faint yellow to green colour, such as green packaging, competitive advantage, and green purchase behaviour, indicate that these topics are in a developing stage and still require further exploration. In addition, areas with a dim green colour such as green e-business adoption, stakeholders, and consumer cooperation reveal new research opportunities that have not been widely discussed. Further in-depth research into these low-density topics could fill gaps in the existing literature and make significant contributions, particularly in understanding how elements such as green business adoption, consumer collaboration, and the role of stakeholders can support the sustainability and competitiveness of SMEs in the green marketing landscape.

DISCUSSION

The results of data processing carried out based on rigorous screening found a total of 25 articles that are considered to specifically discuss green marketing in the umkm sector, which consists of reviewing business actors or umkm owners or consumers who buy umkm products, We see that it is still very rare for academics around the world to discuss the application of green marketing which specifically discusses green marketing where this topic in the last decade has become a very serious issue to be observed in their respective fields, in the graphical data on the number of publications of reputable articles in the last year, it can be seen that the number of publications discussing green marketing issues in the SMEs sector has an upward trend but there is no significant spike, The specific topic of discussing this was originally in 2005 by [8] *Design of 'green grade' rating system for the environmental performance assessment of a firm* where the research uses Hierarchical analysis which concludes the proposed green *grade* rating system can be very important for small and medium enterprises (SMEs) because small and medium enterprises (SMEs) produce most of the output value in the industry in any country and are a major source of pollution due to their outdated technology and limited capital and subsequent researchers discuss Green marketing in the same sector only with different substances, methods, samples.

In the citation trend, there are 10 authors and articles that have a variety of citations, in the analysis conducted, it can be seen that the article entitled Eco-efficiency in the SMEs of Venezuela. Current status and future perspectives

written by [13] occupies the position with the most citations, namely 94 citations, then the author [14] his article entitled the role of green management in creating sustainability performance on the small and medium enterprises with the number of citations 42 and other authors that we have included in the previous subchapter. From the results of bibliometric analysis, it can be seen that there is still a very high chance that each keyword is interrelated with other keywords, in other words, the potential for future research development with the core topic of green marketing in the umkm sector has a high chance.

CONCLUSION

The results of the analysis that have been explained in the previous subchapter, the following conclusions can be drawn, firstly, publications that have been released with specific themes that discuss *green marketing* in the SMEs sector are still limited and still have high opportunities for researchers in the future, some previous researchers still predominantly discuss business actors (SMEs) and rarely discuss consumer buyers of this product will be a gap and novelty if associated with keywords contained in bibliometric analysis, concepts such as green innovation, green marketing orientation, and innovation (found in the blue cluster) become the main foundation for developing innovative green marketing strategies in the SMEs sector. The findings suggest that the integration of green innovation with green marketing orientation can create a relevant strategic framework to improve business competitiveness and sustainability. In addition, the emergence of the concept of green management (yellow cluster) confirms that sustainability-focused managerial practices play an important role in ensuring the effective implementation of green strategies in SMEs. This suggests that structured green management can be a key pillar in the transformation of SMEs towards operational sustainability and long-term performance.

On the other hand, the findings on the green cluster, which includes green packaging, competitive advantage, business performance, green purchase behaviour, green marketing dimension, and price, provide new insights into how the combination of these elements can support the success of green marketing strategies. For example, the use of green packaging not only increases product attractiveness, but also encourages green purchasing behaviour that leads to improved business performance. The interaction between green marketing dimensions and price also indicates that SMEs need to devise a balanced pricing strategy, so as to reflect sustainability values while remaining competitive in the market.

The new knowledge and novelty of this research is the multidimensional integration of green innovation, management, and marketing that creates a holistic strategic framework for SMEs. The findings provide insights that the success of a green strategy depends not only on a single element, but on the synergy of multiple factors that include innovation, management, and marketing. This perspective can serve as a platform for researchers to delve deeper into specific relationships between these elements, such as the impact of green marketing orientation on consumer purchasing behaviour in different industry sectors, or how the integration of green management can strengthen competitive advantage in different market contexts.

The results of the analysis show that there are key links that can provide novelty in the future, keywords that have not been seen that can make new research gaps with new subjects or objects (such as traditional food, etc.) this will be interesting and will certainly be useful for environmental marketing in the SMEs sector. The results of this article are also evidence that the need for academic attention to pay attention to business actors or SMEs, the results of this analysis provide clues that the variables detected in this paper can provide new knowledge and faces for the world of SMEs, and future researchers can add valuable scientific contributions.

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