

Green Business Publication: Insights from Scientometric Analysis (1990-2019)

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Abstract

Green business to overcome global environmental problems with an entrepreneurial spirit. This paper aims to review the status and visual map position of research in the internationally green business publication indexed Scopus that used a bibliometric perspective. The research was carried out using bibliometric techniques. Data analysis as well as visualization utilizing VOSViewer program and the Scopus function for analyze search results. In this review, the details collected applied to 388 documents issued from 1990 through 2019. The study reveals that Frank Leymann and Universität Stuttgart were the most active individual scientists and affiliated institutions in the green business publication. In green business, the Business, Management, and Accounting and the Journal of Cleaner Production were the most areas of study and dissemination sources. There were two worldwide group maps with collaborative researchers. In order to identify the body of knowledge created from twenty-nine years of publication, this study constructed a

convergence axis grouping comprising of green business publication: Business, Enterprise resource management, Energy, Sustainable development, and Technology, abbreviated as BEEST.

Keywords

Green business, bibliometric, Scopus, VOSviewer

1. Introduction

Green strategy in business to overcome global environmental problems. More and more businesses are considering and implementing green strategies compared to the last few decades [1]. Because the company must immediately respond to the problem of environmental impact [2]. Climate change and global warming are complex global problems with environmental, economic, and social impacts [3]. here are two main reasons for producers to be involved in environmentally friendly businesses. Internal reasons are competitiveness and social responsibility; external motivation is intense pressure from customers and the government or stakeholders. Though, most businesses have opportunities for adopting green practices that are motivated primarily by profitability and cost problems, not even just social responsibility [4], [5]. Many commercial organizations ensure the realization of a greening strategy based on green business practices. Also, Enterprises are developing various green business frameworks to gain various benefits by sustainability [6]. The 21st-century entrepreneurial environment encourages the development and modernization strategies of companies to adopt green business [7].

Green business is a corporation dedicated to and working on the standards of sustainability. In an effort to use renewable resources and to reduce the negative effect of its operations on the environment [8]. Green Business corresponds to meeting the needs of consumers without creating environmental and social issues and is a significant method of achieving sustainable business [9]. Green business is related to the green economy, green society, and environmental policy resulting from environmentally sustainable chain systems [1]. Business processes in the form of reusing wasted material, reducing the quantity of waste, and recycling it as a by-product or as raw material for other products can reduce costs through environmentally friendly processes [10]. The green business aims to introduce processes, products, business models, and services at low cost, resource-efficient, or reproduced. The green business implementation provides significantly more sustainability than its closest competitors [9]. Green business can be built with an entrepreneurial spirit.

Green business focused on social, economic, and technical innovation is the mainstay of green growth and global adaptation to climate change [11]. In general, however, previous publications relating to green business have been restricted to one sector [12] and one nation [13]. To understand this, there is still a need for research. Unfortunately, despite presenting a broad image map visualized year over year with details from several published studies at the global scale, there has not been much publication on green business. The strong positive relationship regarding affiliation, scholars, and the impact of scholarly studies has also not been explicitly discussed by any publication. This paper aims to review the status and visual map position of research in the internationally green business publication indexed Scopus that used a bibliometric perspective.

2. Research Methods

This review mapped the status of the study conducted in the last 29 years at the global level on the basis of Green Business. In July 2020, this study collected data from Scopus utilizing document search queries [14]. The research was carried out using bibliometric techniques. Data analysis as well as visualization utilizing VOSViewer program and the Scopus function for analyze search results. The VOSViewer tool is used to create and visualize bibliometric networks, namely the number of studies, nations, academic affiliations, keywords, researchers, fields, and author collaborations [15]–[18].

This study identifies green business keywords to recognize and look for Scopus database publications with 388 globally published documents from 1990 through 2019. The research confined the collection of data to 2019 and excluding 2020. In order to reflect the state of the study over the entire year, the annual academic data collected from January to December. (TITLE-ABS-KEY ('green business') AND PUBYEAR <2020) is the query input command which is implemented while mining academic publication data on the online database of Scopus.

The research applies a co-authorship analysis with authors' analysis units and full calculation systematic techniques utilizing VOSViewer to gain the collaborative research network of the international researcher. The research conducted an in-depth co-occurrence analysis with keyword relation analysis as well as a full systematic technique of calculation utilizing VOSViewer to generate a keyword map network.

3. Result and Discussion

This section describes the growing results of data based on the most common organizational affiliation, nations, individual studies, the largest frequency of subject areas, types of fields, yearly source documents, annual documents and cited papers, the publication of the map, and networks of authorship in the field of the green business.

3.1 Green Business Publications Most Common Organizational Affiliations

The higher research organizations in green business publications was Universität Stuttgart with 7 documents. Then followed by Bucharest University of Economic Studies, Universiti Sains Malaysia, the Queensland University of Technology QUT, Universität Göttingen, Universität des Saarlandes, Universiteit Gent, Universidad de Los Andes, Colombia and Universiti Utara Malaysia.

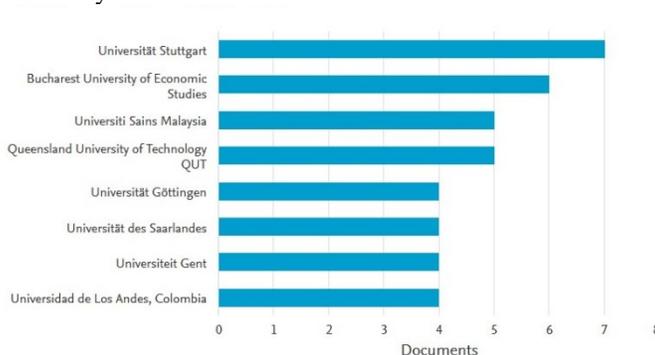


Figure 1. Organizational Affiliation Number of Annual Publication of Green Business

3.2 Green Business Publications Most Individual Researcher

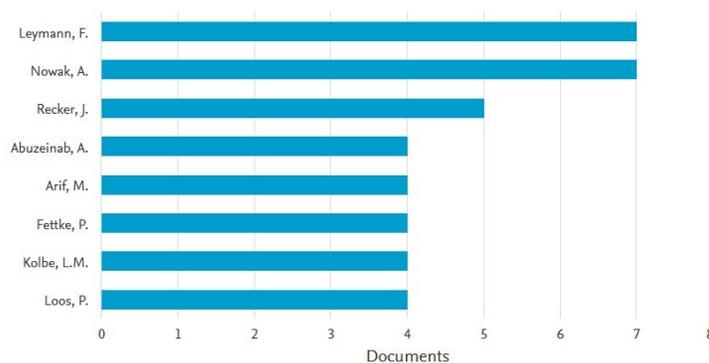


Figure 2. Most individual Green Business Publication Researcher

The researcher in the area of green business to the most writings was Leymann, Frank with seven documents with it. Pursued by Nowak, A. with seven documents, Recker, J. with five documents, Abuzeinab, A. with four documents, Arif, M. with four documents, Fettke, P. with four documents, Kolbe, L.M. with four documents, Loos, P. with four documents, Couckuyt, D. with three documents, Cruz-Machado, V. with three documents and Duarte, S. with three documents. Frank Leymann is a researcher at the University of Stuttgart, Germany.

3.3. Green Business Publications Most Common Nation

In green business publications, the United States with 80 academic documents was the leading research nation. Then, with 34 articles, the United Kingdom followed. Then India, Germany, Australia, Italy, China, Denmark, Indonesia, and Malaysia followed.

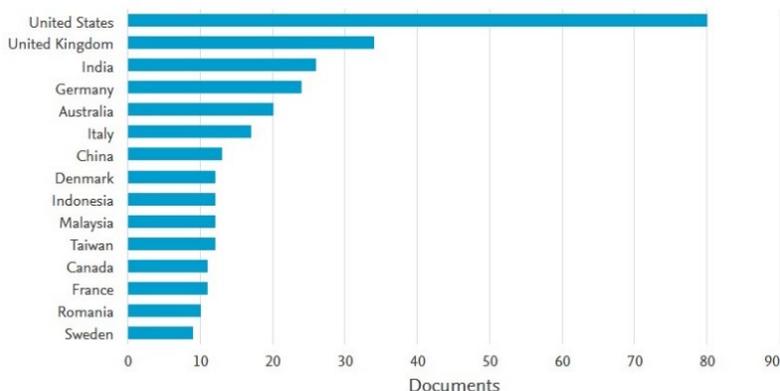


Figure 3. Nation Number of Annual Publication of Green Business

3.4 Green Business Sector Publication on Sponsor Funding

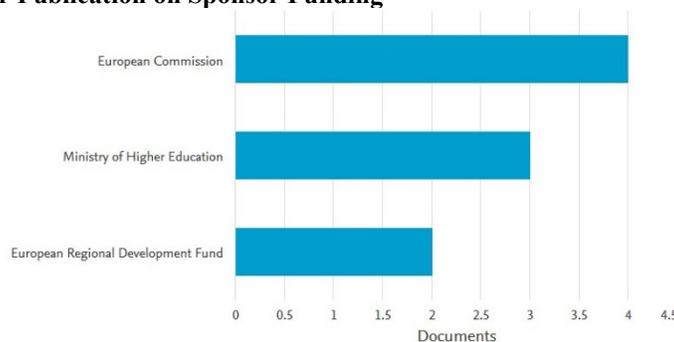


Figure 4. Number of Green Business Sector Publication on Sponsor Funding

The European Commission, with 4 papers, was the largest funding sponsor for green business publications. Followed by the 3-document Ministry of Higher Education, the 2-document European Regional Development Fund, the 1-document Abu Dhabi Education Council, the 1-document Bundesministerium für Bildung und Forschung, and the 1-document Bundesministerium für Bildung und Forschung, Council on grants of 1 document to the President of the Russian Federation, 1 document to the Deanship of Scientific Science, 1 document to King Saud University and 1 document to the Department of Commerce and Industry. This indicates that, for green business magazines, there are not many supporting supporters who provide special funding.

3.5 The Largest Frequency of Publication of Green Business by Subject Area

Businesses, Management, and Accounting with 173 documents (22.2 percent) were the most important subject areas in green business publications. Environmental science with 117 papers (15.0 percent), social sciences with 109 papers (14.0 percent), engineering with 98 papers (12.5 percent) and economics, econometrics and finance with 74 papers (9.5 percent), Computer Science with 59 documents (7.6%), Energy with 44 papers (5.6%) and Decision Sciences with 22 papers (2.8%). As part of business studies, green business is dominated by business, management, and accounting topics.

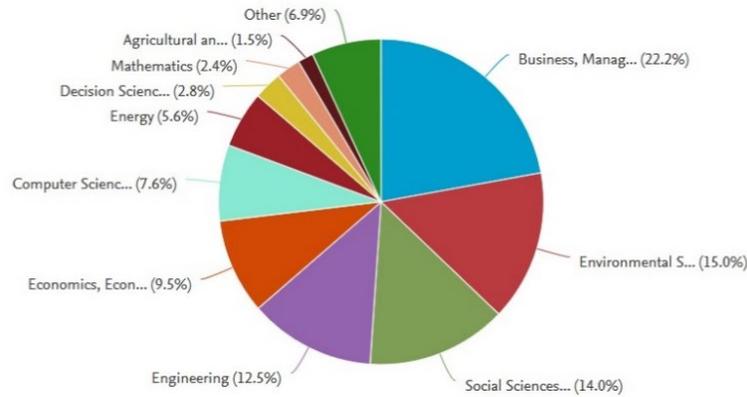


Figure 5. The Largest Frequency of Publication of Green Business by Subject Area

3.6 The Largest Publication of Green Business Sector by Types

Articles with 249 documents (64.2 percent) were the most common types of documents in green business publications. This was followed by conference papers with 71 papers (18.3%), book chapters with 31 papers (8.0%), reviews with 13 papers (3.4%), and books with 10 papers (2.6%).

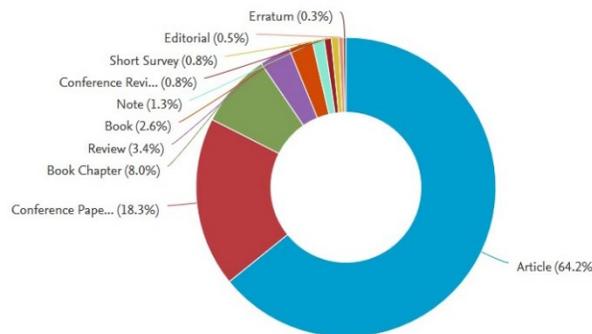


Figure 6. The Largest Publication of Green Business Sector by Types

3.7 Year Documents of Green Business Publication Sources

The leader in the annual number of sources of green business publications is the “Journal of Cleaner Production” with 12 documents. Then followed by “Quality Access to Success” with eight documents, “Sustainability Switzerland” with eight documents, “Business Strategy and The Environment” with seven documents, “Lecture Notes in Computer Science Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics” with six documents and “Corporate Social Responsibility and Environmental Management” with five documents.

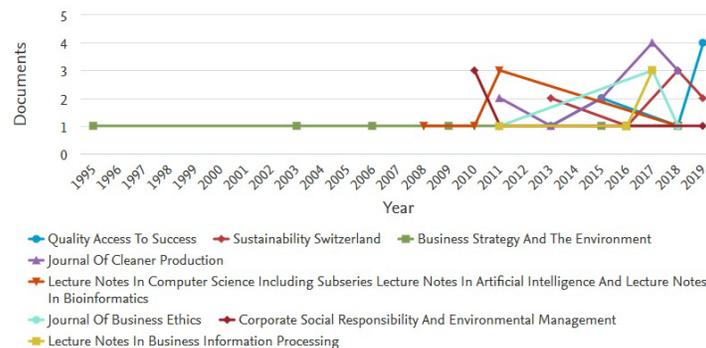


Figure 7. Number of Annual Documents Based on the Green Business Publication's Sources

1. Business cluster (green). We can find business themes in this cluster. The green business, business models, industry, commerce, marketing, green marketing, decision making, profitability, human, supply chain management, and corporate social responsibility dominated this cluster. Many of these keywords are linked to themes in business.
2. Enterprise resource management cluster (purple). The keywords of the business process, business process management, information system, information management, administrative data processing, sustainable business, and environmental sustainability dominated this cluster. Many of these keywords are linked to themes in enterprise resource management.
3. Energy cluster (yellow). We can find energy themes in this cluster. The energy utilization, energy policy, renewable energy, renewable energy resources, carbon footprint, carbon dioxide, global warming, and technology. Most of these keywords were connected to this cluster.
4. Sustainable development cluster (red). The keywords of sustainability, green economy, green business models, entrepreneur, environmental management, environmental protection, environmental policy, and innovation dominated this cluster. Many of these keywords are linked to themes in sustainable development.
5. Technology cluster (blue). We can find technology themes in this cluster. The keywords of information technology, reengineering, green computing, industrial research, planning, knowledge management, and optimization.

3.11 Network of Authorship

With the VOSViewer program, construction was developed on the green business researcher framework for the authorship network map. One document was one of the requirements for the minimum collection of publications per author. Thus, out of 808 researchers, 3 researchers who reached the thresholds were recognized. As shown in figure 10, there were two group partnership networks between international researchers in green business publications. The green cluster of green business publication which contains Nowak, A., Leymann, F. And The red cluster which contains Recker, J.



Figure 10. Authorship Network Map

4. Conclusion

The results of this research revealed that there is an annual trend towards a spike in the amount of international publications on green business, there were maps and visual patterns. With 80 papers, the United States was the country with the greatest contribution to publications in Green Business studies. In the publication of the green business publications, Universität Stuttgart was the most active research institution with 7 papers. In the green business publication, the individual academic researcher with the most prolific publications was Frank Leymann 7 papers with it. With 173 documents (22.2 percent), the most intensively studied areas published in the green business publication were Business, Management, and Accounting. The “Journal of Cleaner Production” with 12 documents was the majority of annual documents by the source in the green business publication. With 46 papers, the highest publication of worldwide scholarly publications in green business studies was in 2019. The works of Mudgal's, Shankar, Talib, Raj's were mostly publications with the most citations. In 2010, the “International Journal of Logistics System and Management” cited 163 documents entitled " Modeling The Barriers of Green Supply Chain Practices: An Indian Perspective". There were two researcher partnership groups linked to the publication of green business.

In terms of contributing knowledge implications, this study recommends a classification of the convergence axis comprising of publication in green business to classify the body of knowledge created from twenty-nine years of academic publication: Business, Enterprise resource management, Energy, Sustainable development, and Technology, abbreviated as BEEST. The identification of key themes in the green business area, as practical implication,

contributes to an awareness of the creation of practical studies to clarify general contexts and topics, as well as research gaps. All this will lead to fresh research addressing a lack of study and specialized expertise in the disciplines. The most studied themes often reflect the ability to contribute to Green Business to entrepreneurs, businesses, and enterprises.

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