

GREEN ECONOMY. THE CONNECTION BETWEEN ACCOUNTING AND SUSTAINABLE DEVELOPMENT

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Abstract: *The green economy is a concept that brings sustainability into discussion through the promotion of ideas such as caring for the environment, promoting economic growth through sustainable methods and creating equitable opportunities for all individuals in society.*

This transition can be achieved by accounting, which helps in combining sustainable development goals into economic decision-making. The current paper presents a bibliometric analysis of the most recent publications in the existing literature to investigate the relationship between accounting and sustainable development. This research investigates trends, collaborative networks, and significant papers and publications in the domain of quantitative analysis methods. This illustrates the positive effects of implementing a green economy. The study shows green accounting is gaining recognition, alongside sustainable reporting standards and the role of accounting in evaluating company performance concerning environmental and social aspects. In order to promote the transition to a healthier economy, interdisciplinary research must be enhanced and a better accounting framework developed.

Key words: *green economy, sustainable accounting, sustainable development.*

JEL: M40, M41, Q01.

1. Introduction

The green economy brings an innovative addition to the financial sphere by merging sustainability, care for the environment, and economic growth with long-term, sustainable perspectives.

The key fields of priority are to promote the effective management of natural resources, decrease carbon emissions, or encourage the companies to improve the general social conditions for all community members. Sustainable accounting brings into discussion what the actual significant impact of businesses is during the course of their operational and production services. (Gonzalez et al.,2020)

In order to deepen the research in understanding the relationship and connections formed between sustainable development and green accounting, this paper explores a bibliometric analysis of academic publications focusing on the green economy. The quantitative analysis emphasizes the connections made between research published in the financial accounting sphere.

Thus, accounting is intertwined with economic activities aiming at sustainable development, as sustainable development is becoming a highly publicized topic of great interest for all actors in the economic space.

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Companies are interested in creating a much bigger picture by setting and meeting sustainability goals that will be achieved by applying green accounting practices such as environmental cost accounting and sustainability reporting.

2. Basic content

Within the context of the economic industry, the current research investigates the implications of the interconnections that exist between the accounting and sustainable development, based on the context of green economy.

The current research aims to accomplish two goals:

1. The current study's major objective is to investigate how green economy concept relates to accounting's role in sustainable development. The business sector and international economy have begun to place a greater emphasis on this notion.
2. The study explores into the consequences of the financial sector's interdependencies among sustainable development, accounting, green economy, and sustainability.

We applied a bibliometric analysis to help us to identify recurrent patterns in the research that was conducted on the sustainable development. This was performed in order to emphasize the interdependent nature of these three components of our research.

The paper aims to map the green economy relationship with accounting and sustainability at the international level. The economic space has been analyzed in academia by different specialists, and there is a need for further research on the connections between accounting and sustainability. The current exploration consists in analyzing the types of publications, which writing languages were most often used, the countries where these studies were made public, and their connections regarding the research on SDG goals and WOS categories. The sample used for the present bibliometric research was extracted from the Web Of Science Core Collection on August 13, 2024.

In order to start our investigation, the keywords selected for the study case were:

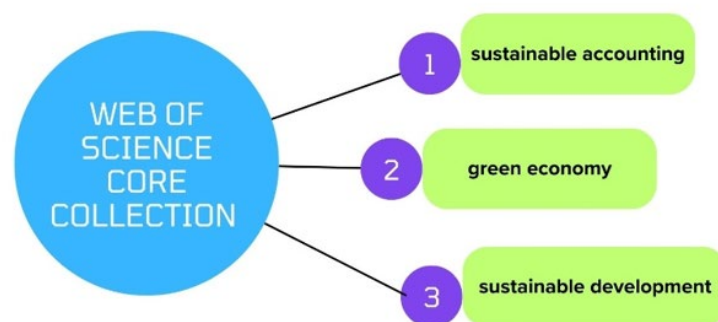


Figure 1. Keywords used on the Web of Science Core Collection database

Source: authors' own research, 2024

The subject of sustainable development in the economy is characterized by a wide network of interdisciplinary connections. This network allows for the gradual introduction of a sustainable business system with the intervention of experts and in accordance with established protocols and guidelines.

Numerous national and international sectors and industries are showing interest in sustainability.

Thus, for academics and economists who use this data, sustainable development in accounting is a relatively unexplored field.

We opted to limit our research to materials published between period 2022 and 2024 to ensure the validity of our findings. In view of this, papers that were found as published within the period selected were subjected to a detailed review.

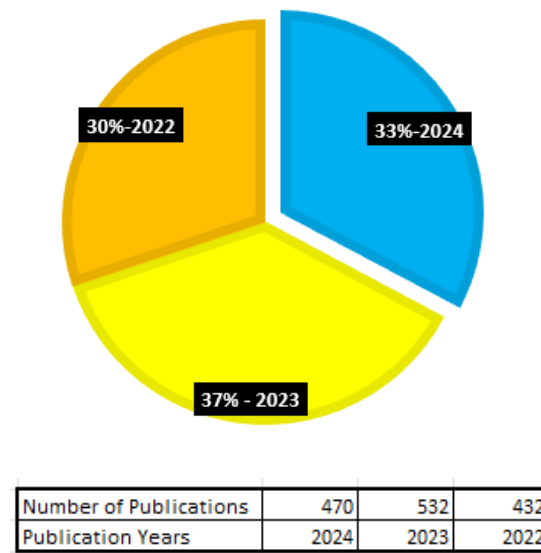


Figure 2. The annual distribution of published research

Source: authors' own research, 2024

Based on the preliminary search completed by the WOS core collection platform, an entire set of 1,434 results have been determined that fulfilled the specified criteria. Such terms have been encountered in an extensive variety of fields, including Economics, Environmental Studies, Energy Fuels, Management, and Ecology, to name among others. The number of academic publications that covers topics as green economy and sustainable development has been on the rise in the last period, fact that has been shown by the yearly allocation of these articles.

The publication data indicates a rising trend from 2022 to 2023, with the quantity of papers increasing by approximately 23%. This signifies an increasing interest and awareness within the academic and research community regarding the relationship between accounting and sustainable development in the framework of the green economy. The significant increase in 2023 may indicate heightened global focus on sustainability reporting, corporate accountability, and environmental impact assessment, which are essential elements of connecting accounting to sustainable development.

Figure no. 3 sheds light on the results obtained which shows that the green economy and the relationship between accounting and sustainable development predominantly dominates the Economic area with a percentage of over 49%, followed by the Business Finance sector with a percentage of 14%, Environmental Studies represents 6%, but we find studies in a significant number also in sectors such as Green Sustainable Science Technology, Agricultural Economics Policy or Ecology and others. Incorporating environmental concerns as a major topic further emphasizes Green Accounting's emphasis on ecological considerations. Rising environmental consciousness and the

demand for businesses to disclose their effects on the environment and their role in promoting sustainability are likely factors driving this trend.

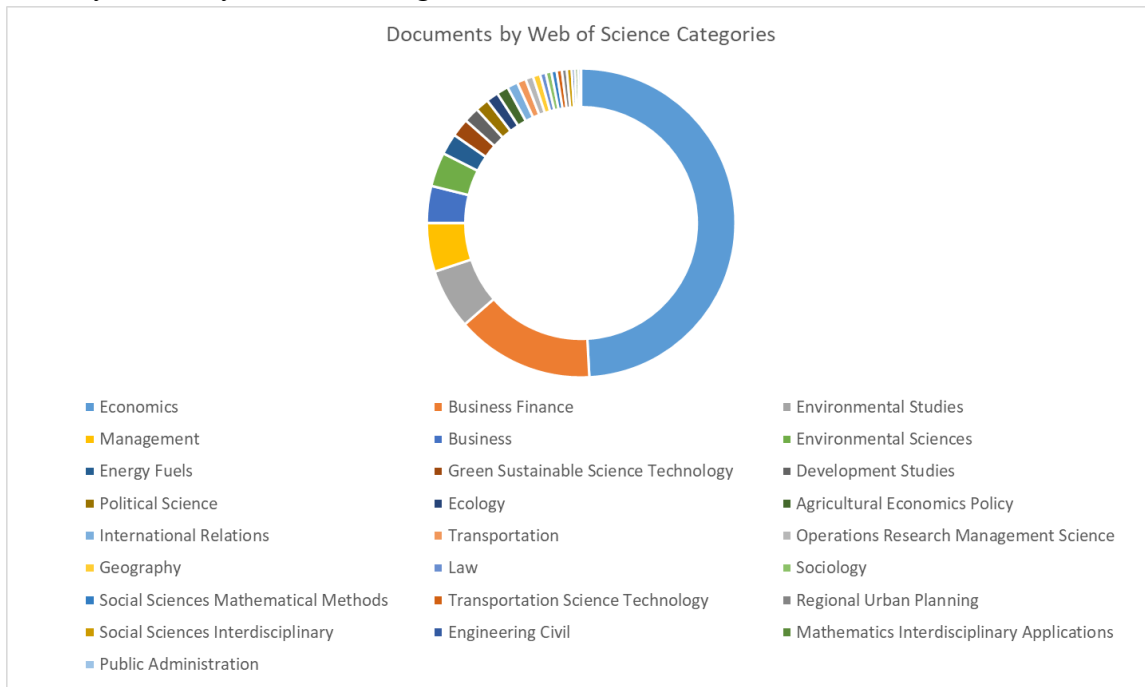


Figure 3. WOS Categories of the selected papers

Source: authors' own research, 2024

The Economics category includes about 49% of all papers, showing that the green economy is mainly considered from an economic point of view. This shows that most research centers around the financial and economic implications of environmental sustainability and the role of accounting in supporting economic progress closer to more sustainable systems. Topics will likely encompass cost-benefit analyses of environmentally friendly procedures, marketplace mechanisms for protecting the environment, and the economic aspects of green policies. In the Business Finance category, an amount of papers concentrate on the financial aspects of enterprises, including methods for financing green initiatives, investments in sustainable practices, and the inclusion of environmental factors into financial reporting. Categories of Management and Business present that a substantial part of the sample analyzed focuses on business strategies and management in correlation with sustainability. The data presented on Figure no. 4 shows the allocation of research papers according to Sustainable Development Goals (SDGs), highlighting the research focus areas.

40% of the presented research is discussing also about to Climate Action (SDG 13), the papers highlight that combating climate change is one of the main priority. This fact indicates that the environmental issues are associated with climate change and represent a high interest for academic researchers.



Figure 4. Presentation of published papers according to the SDGs addressed in the research
 Source: authors' own research, 2024

The following strongest SDGs mentioned are Industry, Innovation, and Infrastructure (SDG 9) and Decent Work and Economic Growth (SDG 8) with 13% and 12%. These two values express the idea that there is a substantial accent on the promotion of a new healthy economy and the which is expected to be connected to green activities and initiatives.

The data regarding SDG allocation reveals an extensive focus on environmental concerns, especially climate action, whereas health and social problems remain comparatively not fully yet explored.

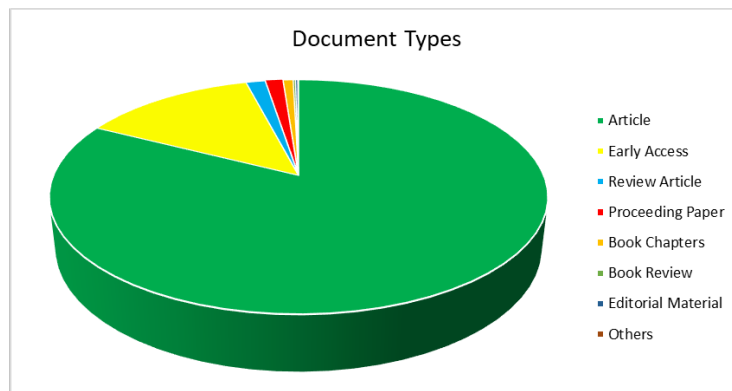


Figure 5. The data categorizing research papers by document types
 Source: authors' own research, 2024

The articles category represents 82.5% of publications. This reflects that the vast majority of research in this domain has been released as conventional research papers. These articles therefore offer original research findings, case studies, and empirical analyses, effectively improving academic knowledge and expanding theorists and practitioners in the green economy and sustainability accounting. The major volume of articles reflects a growing and active research field, that produces a constant flow of comprehensive research aimed to contribute to the ongoing discussion concerning the relationship of green economy and sustainable development.

Table 1. Distribution of the analyzed articles by countries

| Countries | Distribution |
|--------------|--------------|
| China | 30% |
| England | 7% |
| USA | 7% |
| Ukraine | 5% |
| Australia | 4% |
| France | 4% |
| Germany | 4% |
| Italy | 4% |
| Pakistan | 3% |
| Malaysia | 3% |
| Spain | 3% |
| India | 3% |
| Russia | 3% |
| Romania | 2% |
| Poland | 2% |
| Lebanon | 2% |
| Taiwan | 2% |
| Vietnam | 2% |
| Netherlands | 2% |
| Japan | 2% |
| Canada | 2% |
| Turkey | 1% |
| Denmark | 1% |
| Saudi Arabia | 1% |
| Turkiye | 1% |

Source: authors' own research, 2024

The review of research articles by country shows interesting distribution about the contributions of various nations to the area of sustainability in relation to accounting. According to Table No.1, China is identified as the global leader in this area of research related to the green economy and sustainable development, with a total of 30% of the total publications in those domains. Next countries on this list are England and the United States, with 7%. Romania stands 14th, having published a total of 43 articles for the period between 2021 and 2024.

According to the Table no.2, English publications analyzed correspond to a total of 96.7% (1395 records) from all investigated papers. That means that the most common language of publication in the academic environment is English.

This present the big picture of the academic distribution in this field of study, with English serving as the universal language of the actual community. The common usage of English suggests significant research contributions to the green economy and sustainability accounting area are part of the countries where English is the primary language of academic communication.

Table 2. Distribution of the analyzed papers by language of publication

| Languages | Record Count |
|------------|--------------|
| English | 1395 |
| Russian | 16 |
| Turkish | 6 |
| Spanish | 4 |
| Ukrainian | 4 |
| French | 3 |
| Polish | 2 |
| Slovak | 2 |
| Portuguese | 2 |

Source: authors' own research, 2024

3. Conclusions

The analyzed data present an increasing interest for this research area of the exploration for the relation between green economy, accounting and sustainability.

The upward trend shows that a lot of publications are influenced by the global policy changes and the international corporate sustainability initiatives. The sample selected for the bibliometric analysis presents the dimensions of the green economy and the upward trend of writings about sustainability in the economy

This research possesses specific limitations. The bibliometric analysis may be limited to certain accessible publications, as it depends on data from particular databases. The analysis is confined to the parameters of the chosen tools and databases. The findings may not encompass research disseminated in alternative languages or non-indexed publications.

Further study should concentrate on the clusters identified as underexplored in the co-occurrence analysis. Exploring the complex interconnections between social responsibility in business, finance, environmental leadership, finance, sustainable development, and associated variables can yield a more comprehensive understanding of the resulting implications for Green Accounting. This investigation may enhance theoretical development and practical application within the discipline.

Bibliographical references

1. Al Husaeni, D.F., Nandiyanto, A.B.D. (2022), Bibliometric using vosviewer with publish or perish (using google scholar data): From step-by-step processing for users to the practical examples in the analysis of digital learning articles in pre and post covid-19 pandemic.
2. Deegan, C. (2013). The accountant will have a central role in saving the planet ... really? A reflection on “green accounting and green eyeshades twenty years later.” *Critical Perspectives on Accounting*, 24(6), 448–458.
3. Dwianika, A., Purwanto, E., Suyoto, Y. T., & Pitaloka, E. (2024). Bibliometrics Analysis of Green Accounting Research. *International Journal of Energy Economics and Policy*.
4. Garcia. I. (2020). e-Leadership: A Bibliometric Analysis. *International Journal of Advanced Corporate Learning*, 13(1), 19-34.
5. Gonzalez, C.C., Pena-Vinces, J. (2022), A framework for a green accounting system-exploratory study in a developing country context, Colombia. *Environment, Development and Sustainability*.
6. Gonzalez, et. al., (2020). Green accounting in Colombia: A case study of the mining sector.
7. Hodi Hernádi, B. (2012) “Green Accounting for Corporate Sustainability”, *Theory, Methodology, Practice*, 8(02).
8. Markandya, A., Tamborra, M. (2005a), *Green Accounting in Europe: A Comparative Study*. Vol. 2. United Kingdom: Edward Elgar Publishing.
9. Nguyen, et. al., (2023), Determinants influencing the application of green accounting: The case of Vietnamese constructions firms. *Corporate Governance and Organizational Behavior Review*, 7(2, special issue).
10. Riyadh, et. al., (2020), The analysis of green accounting cost impact on corporations financial performance. *International Journal of Energy Economics and Policy*.
11. Saputra et. al. (2021). Combining the concept of green accounting with the regulation of prohibition of disposable plastic use. *International Journal of Energy Economics and Policy* 11 (4), S. 84 – 90.
12. Shen. X. and Wang. L. (2020). Topic evolution and emerging topic analysis based on open source software. *Information Science*, 5(4), 126-136.
13. Sukmadilaga, C., Winarningsih, S., Yudianto, I., Lestari, T.U., Ghani, E.K. (2023a), Does green accounting affect firm value? Evidence from ASEAN countries. *International Journal of Energy Economics and Policy*, 13(2).
14. Toke, L.K., Kalpande, S.D. (2022), Critical analysis of green accounting and reporting practises and its implication in the context of Indian automobile industry. *Environment, Development and Sustainability*.

15. Turner, P., Tschirhart, J. (1999), Green accounting and the welfare gap. *Ecological Economics*-30
16. Van Eck, N. J. and Waltman, L. (2010). Software survey: VOSviewer. a computer program for bibliometric mapping. *Scientometrics*, 84(2).
17. Ul Haq, S., & Boz, I. (2019). Measuring environmental, economic, and social sustainability index of tea farms in Rize Province, Turkey. *Environment, Development and Sustainability*..
18. Hens, L., Block, C., Cabello-Eras, J. J., Sagastume-Gutierrez, A., Garcia-Lorenzo, D., Chamorro, C., et al. (2018). On the evolution of “cleaner production” as a concept and a practice. *Journal of Cleaner Production*.