

UDC 378

FOOTPRINTS OF THE ESG MODEL IN SOUTH AFRICA'S HIGHER EDUCATION

Damiyano David*

Post-Doctoral Researcher, Department of Development Studies, Faculty of Business and Economic Sciences, Nelson Mandela University, Gqeberha & Honorary Research Associate, Faculty of Management Sciences, Durban University of Technology, Durban, South Africa

Mago Stephen, Professor

Department of Development Studies, Faculty of Business and Economic Sciences, Nelson Mandela University, Gqeberha, South Africa

Dorasamy Nirmala, Professor

Faculty of Management Sciences, Durban University of Technology, Durban, South Africa

*E-mail: davydamex@yahoo.co.uk

ABSTRACT

The study investigated the applicability of the Economic- Social- Governance (ESG) model in universities and high education in South Africa. The study covered the period spanning from 2010 to 2023. A bibliographic analysis procedure was used in this study to retrieve results from the Scopus search and VOSviewer software packages. The study found a rising trend in the number of documents published by affiliation, donor funding, and type. The study also visualizes numerous citations and high collaboration among authors. The study also compared GNP, education, and the number of published documents related to the ESG model and obtained a positive trend during the period under study. The study recommended that universities or higher education institutions embrace the applicability of ESG models in their operations. They should not only focus on financial benefits and government issues while neglecting the welfare of the students.

KEY WORDS

ESG (Environmental, Social, Governance), university, education.

Sustainability has become a fundamental goal for all stakeholders across the world. Whether commercial or public; governments and leaders of organizations should recognize their critical role in supporting sustainability. Sustainability is when a country meets its present objectives by utilizing existing resources without jeopardizing future generations' capacity to access sufficient resources to satisfy their requirements (UN, 2023). According to the 17 SDGs of the United Nations, to achieve sustainable development, the world must focus on three dimensions: ecological, social, and economic. The issue of sustainability is not just the government's responsibility; institutions should play a role in prioritizing sustainability (Huang et al., 2022). University or higher education officials, including chancellors, academic deans, student affairs officers, student representatives, and lecturers, should contribute to promoting sustainability, much like any other sector (Shaw, 2022). Universities and higher education are considered reservoirs of information where intellectuals, such as researchers, congregate; hence, participation and promotion of sustainability should be their responsibility (Liao et al., 2020). The primary goal of this research is to concentrate on the environmental, social, and governance (ESG) paradigm at South African universities or higher education institutions. The ESG approach emphasizes environmental, social, and governance concerns.

The Edelman Trust Barometer (2020) survey shows that institutions and higher education are progressively adopting the ESG model. For example, a survey showed that around 87% of South African institutions considered universities or higher education the most significant stakeholders responsible for promoting sustainability. Constantiello (2023) stated

that in universities, chief sustainability officers, supply chain heads, and chief finance officers are accountable for ensuring that all stakeholders emphasize the environmental sustainability agenda. As shown in Table 1, some of the key elements engulfed in the "E" of the ESG model have the mandate to ensure shared values and commitment, ensure stakeholder accountability, and incorporate the framework into how funds and portfolios are used and managed over time. This ESG framework "E" component is also one of the 17 SDGs' main goals, specifically SDG7 and SDG13.

Table 1 – The ESG framework

Environmental	Social	Governance
1. The use of alternative energy sources 2. Waste management and garbage collection in the cities of South Africa, 3. Response to climate change, pollution, and biodiversity	1. University learning environment 2. Leaders and student relationships 3. Policies towards sexual harassment and abuse 4. Skills development	1. University or higher educational policies 2. Accountability and transparency 3. The effectiveness of the governing boards, academic councils, and other respective members

Furthermore, Clement et al. (2022) said that university administrators are responsible for developing cultural values by establishing an atmosphere where students and other stakeholders feel appreciated and supporting students in all aspects of their lives on and off campus. All these factors are constituted by "S" in the ESG model. Furthermore, in terms of governance, university leaders are accountable to all stakeholders, including students, the community, and the government, for their institutions' financial insight, openness, and responsibility. As a result, several scientific studies have analyzed the ESG model in South African higher education and offered their analysis based on diverse views. Laureti et al. (2023) asserted that ESG models in university management are important because they help students focus on sustainability, inclusivity, and adopting governance ideals. Leongrade (2023) added that the use of ESG models in South African colleges or higher education aids in the achievement of the United Nations' 17 Sustainable Development Goals.

Furthermore, in terms of governance, university leaders are accountable to all stakeholders, including students, the community, and the government, for their institutions' financial insight, openness, and responsibility. As a result, several scientific research have analyzed the ESG model in South African higher education and offered their analysis based on diverse views. According to Laureti et al. (2023), ESG models in university management are important because they help students focus on sustainability, inclusivity, and adopting governance ideals. Leongrade (2023) argued that the use of ESG models in South African colleges or higher education aids in the achievement of the United Nations' 17 Sustainable Development Goals. On the other hand, Huang et al. (2022) saw ESG in higher education as a complicated model that brings together numerous parts and may lack the depth to examine individual features in the area of ESG structures. Mutia et al. (2023) emphasized that the ESG model has failed to measure diverse environmental sustainability characteristics appropriately; therefore, its implementation in any context would be controversial. Other scientific research postulated that colleges and higher education have become overly selective in their adherence to the ESG model; that is, they tend to neglect the "S" in the ESG model and focus on the "E" and "G." This discussion among scientific researchers has generated an explicit request for this study to investigate the relevance of ESG models in South African institutions or higher education between 2010 and 2023.

The investigation will also examine whether the South African government has done enough to encourage using the ESG model in South African universities and other institutions. More specifically, to determine if there is a growth in the number of documents produced by year, authors key terms, co-citations, co-occurrences, and so on the ESG model over the research period, To accomplish these goals, the research conducted a thorough examination of the ESG model and its relevance in South African institutions of higher education. The study has four components, the first of which is an introduction and overview of the ESG model in South African higher education institutions. The second

portion contains the bibliometric analysis technique and material used to assess the acceptance of the ESG model in South African institutions of higher education. The final part presents Scopus findings and VOSviewer graphic data on the ESG model in South Africa. The fourth part focuses on data interpretation, and the chapter concludes with a conclusion.

MATERIALS AND METHODS OF RESEARCH

The bibliometric technique was used in this study to examine the application of the ESG model in universities or higher education in South Africa. The researcher performed a Scopus search to select and retrieve documents that are relevant to the subject area. The Scopus search is chosen over the Web of Sciences and PubMed because it combines Scopus data's excellent quality and breadth with solid analytics and technologies in a single package. More so, Scopus can help combat predatory publications while safeguarding the scholarly record; it also increases the efficiency and effectiveness of the research workflow and provides institutions with the power they need to improve their performance, position, and reputation. The information is obtained using the VOSviewer program. Waltman, asserted that VOSviewer software is a tool used to conduct bibliometric analysis and create visualizations from specified databases such as RIS files, APIs, and CSVs. The primary benefit of utilizing VOSviewer software is that it gives a platform for staying up to date with the literature in a particular field. The program also displays collaborative author and subject networks and the concentration of referenced publications. This study used VOSviewer software to present network visualization data on co-citation, co-occurrences, and authors' keywords. The study conducted a thorough literature search on the ESG model in South Africa and its link with universities or higher education to identify all related keywords to create a search query. The criteria used for search query in this study comprised phrases related to ESG models in South Africa and phrases related to universities or higher education in South Africa. The research query uses inclusion and exclusion criteria to address particular terms and phrases connected to ESG models in South African colleges and higher education. The first exclusion criterion is the elimination of any papers that do not fall within the research period of 2010-2023. Furthermore, the analysis rejected any items that were not published in English. The inclusion and exclusion criteria help the researcher avoid unnecessary words.

RESULTS AND DISCUSSION

Based on the number of published documents by year, the study indicated that an aggregate of 101,341 cited document results was retrieved from the Scopus search website. The study exhibited a steeply rising trend in the number of published documents by year related to the ESG model in universities or higher education in South Africa. The study also revealed a positive relationship between the number of published documents by year and South Africa's GNP percentage change, as shown in Figure 2. This implies that, as the concept of ESG model is gaining a huge ground in South Africa, universities or higher education becomes more aware of sustainable development practices which leads to sustainable production, thus increasing country's Gross National Product (GNP) during the period under study. After reviewing empirical research, the author determined that colleges or higher education are important in defining the basic causes and processes that drive ESG success. The findings of this study provide the first comprehensive assessment of the relationship between higher education and the ESG model in South Africa, as well as indicating that ESG-related education is critical to ESG success, which has hitherto been ignored and buried in research.

The study compared the number of papers published during the period under investigation, the change in GNP, and the percentage change in the literacy rate for South Africa. The study revealed a positive relationship between the number of documents published on ESG in higher education, the gross national product (GNP), and the level of

education. The publication progression implies that ESG models play a significant role in improving the level of education and GNP in South Africa.

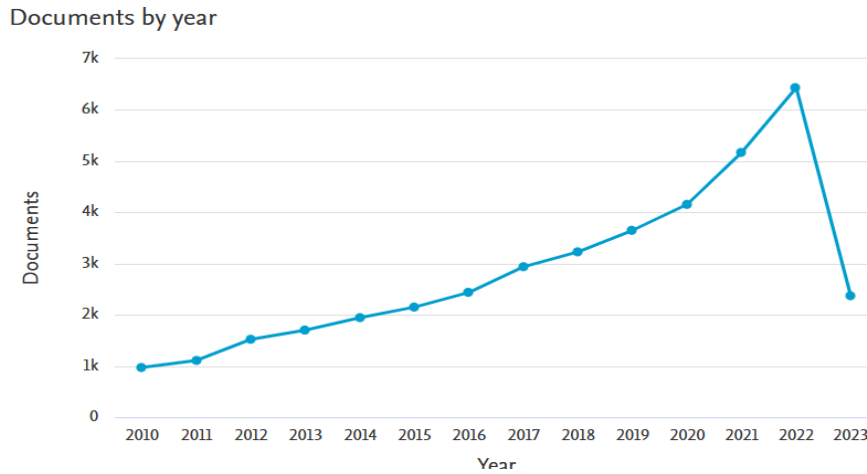


Figure 1 – Number of papers published (Source: Scopus, 2023)

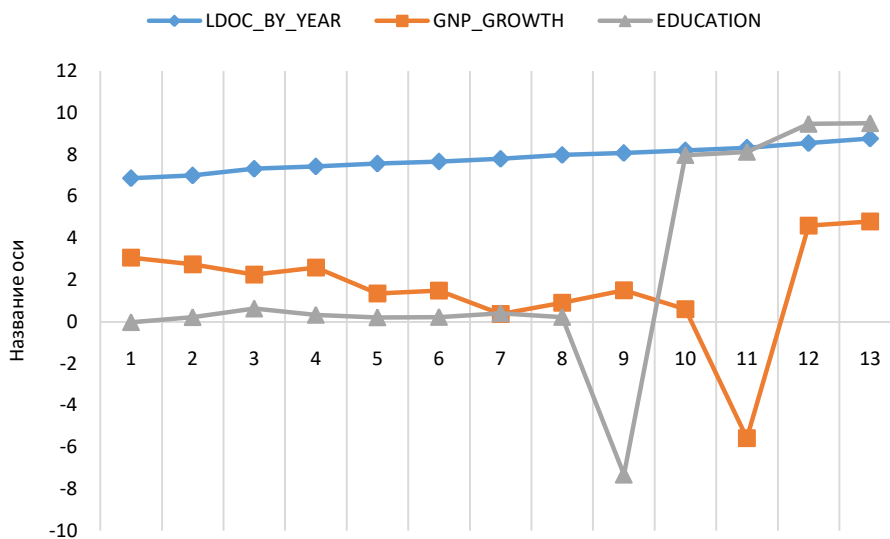


Figure 2 – Relationship between the numbers of documents published on ESG in higher education, the Gross National Product (GNP) and the level of education

Figure 3 below shows the bar chart for the document by affiliation. The Scopus results indicated that the ESG model in South Africa is gaining momentum based on document affiliation, with the University of Johannesburg being the top in publishing documents related to the ESG model in universities or higher education. The second is the University of Cape Town, followed by the University of the Witwatersrand, University of KwaZulu-Natal, University of Pretoria, University of South Africa, Stellenbosch University, North-West University, University of Oxford and Wageningen University, respectively.

Figure 4 indicates documents by territory. The Scopus results exhibited that worldwide, South Africa is leading all other countries in the number of papers published per year that are related to the ESG model in universities or higher education, with more than 10 000 documents, followed by the United States (7.900), the United Kingdom (7.300), Australia (3.500), Canada (2.800) documents, China (2.700), Germany (2.400), the Netherlands (2.100), India, and Nigeria with less than 2000 documents published between 2010 and 2023.

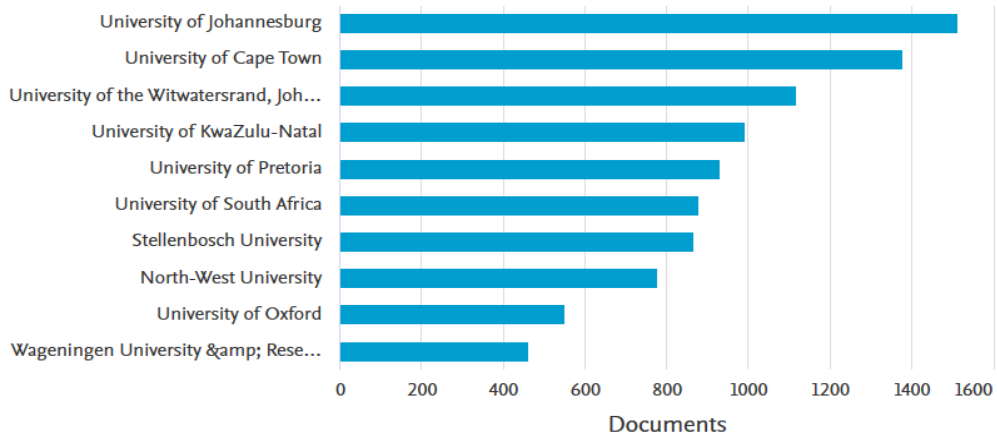


Figure 3 – Document by university affiliation (Source: Scopus, 2023)

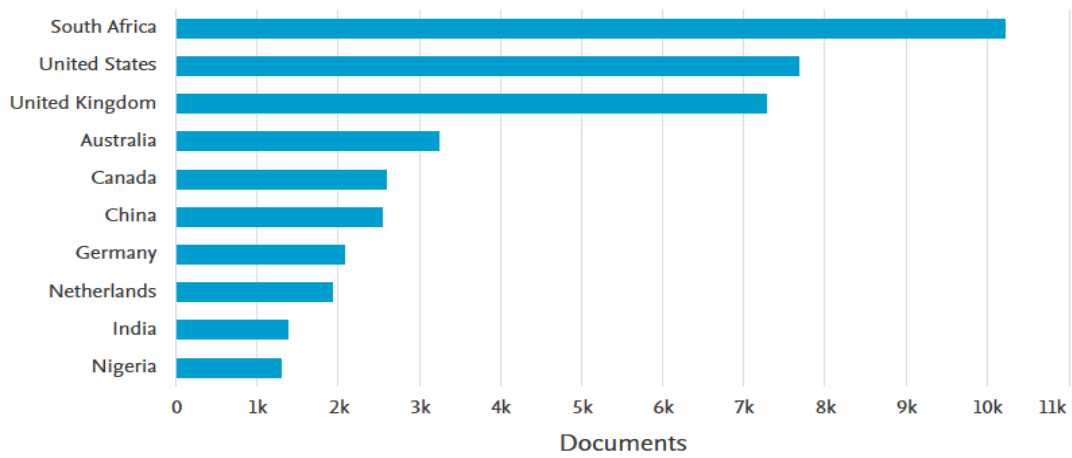


Figure 4 – Documents by country or territory (Source: Scopus, 2023)

The Figure 5 results retrieved documents by funding sponsor and revealed that China, through National Natural Science Foundation sponsored a total of 685 documents per year, followed by Economic and Social Research Council who, supported a total of 493 documents yearly, National Science Foundation and National Research Foundation sponsored a total of 425 documents respectively. The study has only mentioned the top 3 funding sponsors who promoted the study on the applicability of ESG models in higher education or universities.

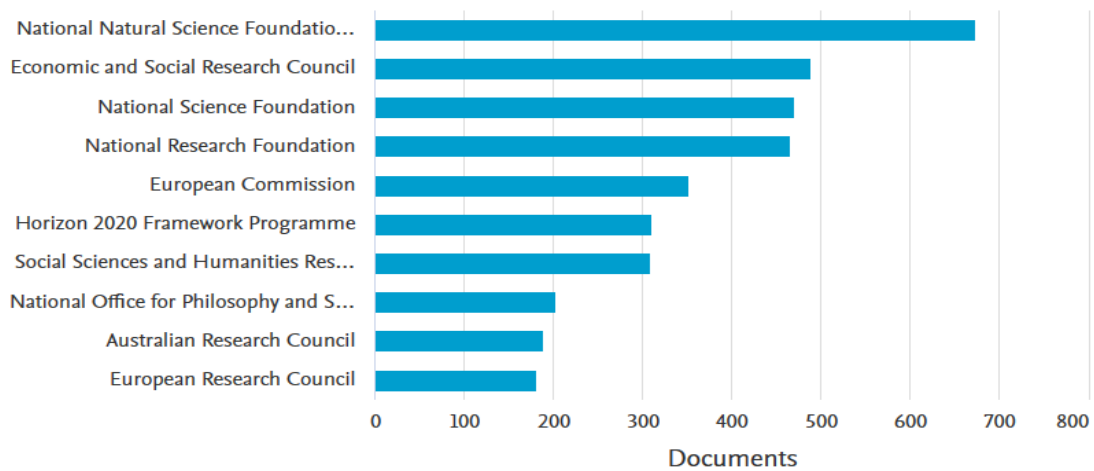


Figure 5 – Documents by funding sponsor (Source: Scopus, 2023)

The pie chart (Figure 7) below indicates the Scopus results for documents by type. It is shown that about 63.3% of articles published were for the last 13 years, and 33.4% are from the Social Sciences, which published 15668 documents, while about 11.9% of books related to the ESG model in education and universities were published. Book chapters accounted for 11.6%, peer reviews accounted for 7.3%, conference papers accounted for 1.8%, short surveys accounted for 0.1%, editorials accounted for 0.6%, and notes accounted for 0.3% of documents published between 2010 and 2023.

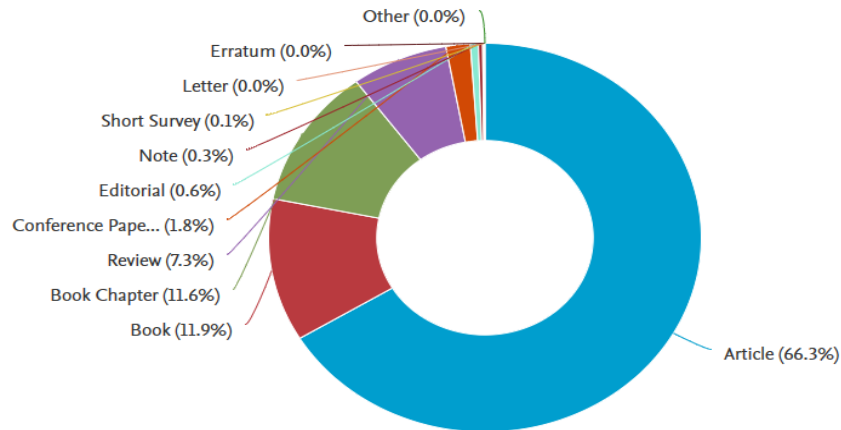


Figure 7 – Documents by type (Source: Scopus, 2023)

Yu et al. (2018) argued that authorship is the smallest unit of publication in a paper. Therefore, when analyzing co-authorship, the researcher should remember that the publication status is at the micro-level. The visual map below depicts the network visualization of author co-authorship for the ESG model in universities or higher education in South Africa.

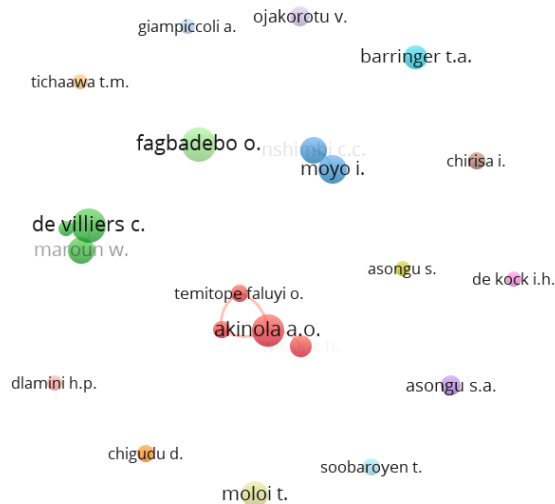


Figure 8 – Author co-authorship analysis (Source: VOSviewer; 2023)

The above network visualization graph exhibited the results for author co-authorship and showed the research collaboration between authors. To improve bibliometric robustness on co-occurrence graphs, the study set parameters that limited the study field by exonerating some of the nodes that contained authors published before the year 2010. Therefore, the study only focused on phrases related to the subject area (ESG model, university or high education, and South Africa). The criteria used to analyze the nodes follow their size; the

bigger the node, the stronger the connection between authors. The lines that connect the nodes represent the collaboration between the authors. Figure 8 above shows that this network visualization's most prolific research team contains three authors, led by Akinola a.o., Temitope Faluyi o., and Khan s., followed by Devilliers c. and Maroun w. This study shows that the group of authors that comprises three members has a total linkage of 38 and a collaboration density of 0.0021, which entails weak collaboration. However, the study found that Akinola a.o. is leading the group with the most significant influence on the analysis of the ESG model in South Africa.

The network visualization shown in figure 9 below indicates keywords in the co-occurrence analysis of the ESG model and higher education or universities. Adkin et al. (2019) asserted that keywords provide a platform to identify the research's core content easily. As the study notices the changes over time, the network visualization graph of keyword co-occurrence mirrors the prominent topics in a specific field. Yu et al. (2017) noted that keyword co-occurrence is comprised of the words frequently mentioned over time, which reflect the cutting-edge topic. In this study, the researcher created a citation space in which each node represents a term, and the thickness of the node is proportional to the frequency with which that keyword occurs. The rationale behind creating the citation space is that it justifies the network of authors' collaborations as well as revealing the study's hotspots of ESG in different periods. The study used a time frame spanning from 2010 to 2023.

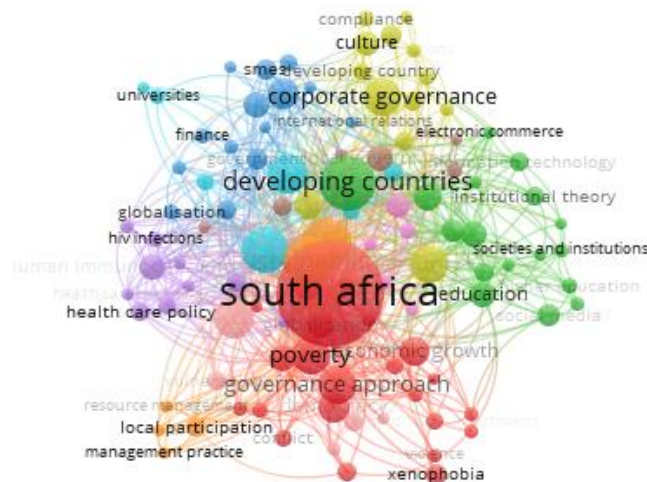


Figure 9 – Authors-Co-occurrences (Source: VOSviewer; 2023)

The results retrieved for keyword co-occurrence analysis show that, firstly, through the cluster analysis of co-keywords, it can be observed that the topics focus on South Africa, sustainable development, governance, environmental sustainability, corporate governance, universities, education, poverty, health care policy, local participation, etc. In addition, the study also focused on word frequency, and only the top 10 keywords were included in the analysis. The results show that South Africa has 175 occurrences and 504 total link strength; sustainable development has 47 occurrences and 432 total link strength; governance has 131 occurrences and 419 total link strength; environmental sustainability has 29 occurrences and 283 total link strength; corporate governance has 25 occurrences and 265 total link strength; universities have 59 occurrences and 248 total link strength; education has 49 occurrences and 207 total link strength; poverty has 18 occurrences and 199 total link strength; health care policy has 17 occurrences and 192 total link strength; local participation has 17 occurrences and 176 total link strength. The study also revealed that the co-occurrences of words in this study show the most prominent words related to the ESG model.

A systematic review was employed in the study to investigate the ESG model in South African institutions and higher education. The study examined the trend of published papers, authors' keywords, authors' co-occurrences, and co-citations using bibliometric analysis.

Furthermore, the findings highlight three important clusters: environmental, social and governance. The findings examined the upward trend in the number of publications, indicating that the ESG model has found a home in South Africa, with research evaluating its applicability in many sectors of the economy. The study also compared South Africa's GNP to the degree of education (literacy rate), and the findings revealed that the notion is growing increasingly popular in South Africa. Environmental challenges "E," such as using alternative energy sources, waste management, and garbage collection in South African cities, as well as reacting to climate change, pollution, and biodiversity, have been recognized by university leaders and all stakeholders. The study also demonstrated that, contrary to other academics' claims that most universities and other institutions have ignored the "S" of ESG, South Africa has a distinct situation, as evidenced by empirical Scopus data. There is no question that "S" is considered in South African colleges or high schools.

CONCLUSION

Furthermore, governance concerns continue to be hot topics in South Africa, as the quantity of published materials on governance grows. The study demonstrates that openness and accountability have been approved for sustainable government in South Africa, particularly at universities. The VOSviewer displays the author's co-authorship analysis, co-occurrence, and co-citation data. The findings revealed that the cluster issues highlighted on the co-occurrence map reflect the most common ideas connected to ESG; this also shows that these ESG models are gaining traction among South African scholars. Using systematic reviews, researchers strive to explore the application of ESG in universities and higher education. The study also found that author citations increased between 2010 and 2023. This study signifies that the nation has done enough to promote the value of ESG models in various South African institutions. This study advised that the relevance of ESG practices be recognized by university stakeholders concerned in business environmental and social performance in addition to financial success. High education or universities should invest extensively in accomplishing development goals at all levels, not just financial success. Future studies will be very interested in this. Internal ESG policies at universities should be established to optimize financial performance and achieve sustainable development goals such as reducing climate change, pollution, and social and gender inequality. Future studies should look at multiple datasets to establish the ESG model's usefulness in universities and secondary schools. This study only looks at documents that have been published in the Scopus database. Despite these limitations, this study thoroughly assesses previous and current studies on the ESG model's applicability.

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