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CONCEPTUAL REVIEW AND COMPARATIVE ANALYSIS OF METHODOLOGICAL APPROACHES USED IN ASSESSING THE APPLICATION OF GREEN ACCOUNTING IN NIGERIA

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ABSTRACT

The application of green accounting in Nigeria is suboptimal, hence, this study carried out a thorough review on the conceptual and methodological approach used in assessing the application of green accounting in Nigeria in comparison with other emerging countries such as India, Bangladesh and Indonesia. This study is qualitative and exploratory research design was adopted. The aim of this study was to carryout conceptual review of previous studies on green accounting in Nigeria and other emerging economies, examine the legal framework of green accounting in Nigeria and finally, conduct methodological review of the application of green accounting in Nigeria. Findings from the literature reviewed showed that studies conducted specifically on green accounting in Nigeria are scanty and it is at infant stage. This study also discovered that there is no generally accepted method of measurement and reporting of environmental cost in Nigeria. This study recommend scale up of research on green accounting in Nigeria and that Financial Reporting Council of Nigeria saddled with the responsibility of development of accounting standards should develop methods of measurement and reporting of green accounting and enforce compliance.

Keywords: Green Accounting, Sustainability Reporting, Environmental Information, Environmental cost.

Introduction

Green accounting is a recent phenomenon which is interrelated to environmental information and ecological eco-system (Yeasin, 2021). It is a new branch of accounting that provides for the accounting of environmental impact (Bouarar, 2020;Sadiku, Ashaolu, Adekunte& Musa, 2021).This is because human activities have led to damages to the environment, including depletion of natural resources, environmental pollution and abnormal climates (Tu& Huang, 2015).More so, nations of the world mine and drill natural resources not regarding the impact it leaves on the environment (Amaka& Florence, 2020).

Gonzalez and Pena-Vinces (2022) infer that current accounting systems assume a purely financial approach, without including environmental information, such as environmental costs and companies' expenses. Green accounting attempts to take into attention the ecological expenses in the calculation of operating profits of an enterprise. It takes into consideration not only the value of natural resource but also the charge of pollution and reduction of natural properties and emphasizes more about the quality of economic growth in terms of sustainable development.

Almaliki(2020) opined that green accounting has three dimensions: first, compliance dimension, it has to with protecting the environment and adhering to efficient compliance with environmental laws and permanent instructions applied in environmental policies. Secondly, eco- efficiency, it involves reducing costs and environmental impacts simultaneously, through efficient use of energy, water and materials in internal processes and end products. Thirdly, strategic position, this has to do with the evaluation and implementation of environmental programs, and cost efficiency to ensure the organization's strategic position and long-term objectives are achieved.

Historic environmental costs were classified into four categories: waste disposal and emission treatment, prevention and environmental management, wasted material purchase value and production cost of non-product cost (Wahyuni, 2009). However, in contemporary green accounting, environmental cost include emissions treatment as well as wasted material, capital and labour which is so called 'non product output' as a result of inefficiency production activities. Well-implemented green accounting will improve environmental performance, cost control, environmental use of technology, and the use and manufacture of environmentally friendly products (Dura &Suharsono, 2022).

Green accounting disclosures are voluntary and discretional in Nigeria, likewise many other countries globally, the voluntary nature of green accounting is more pronounced in emerging countries such as Nigeria. Sumiati et al. (2021) infer that the use of modern technology and the use of cheaper resources to increase productivity and efficiency have a direct impact on the environment around the company. Similarly, the study of Egbunike and Okoro (2018) posit that the absence of appropriate green accounting models or techniques has also compounded the problems of the applicability of green accounting in Nigeria, in addition to the decay in the infrastructure, deficiencies in the suitable technology and the regulatory framework, as well as a high level of corruption.

Statement of the problem

Unlike in developed economy where green accounting is widely practiced, the application of green accounting in Nigeria is suboptimal as evidenced from the literature review of studies conducted in Nigeria(Emmanuel, 2021; Obiora&Nwamah, 2022; Meshack& Eunice, 2022; Benson et al, 2021; Amaka& Florence, 2020; Egbunike&Okoro, 2018;Okoli, Onuora&Emeka-Nwokeji, 2021).Even where company's management with the responsibility of preparation of financial statement are aware of green accounting, most times it not incorporated in total cost ascertainment. On the national scale, the impact of pollution and reduction of natural properties should be included into the computation of Green Gross Domestic Product (GGDP), in addition to the normal Gross Domestic Product (GDP) being computed annually, this has not been implemented in Nigeria. Finally, there is scare research on the conceptual framework of green accounting in Nigeria (Amaka& Florence, 2020), also this study discovered that there are limited studies conducted on the methodological approaches used in assessing the application of green accounting in Nigeria, hence making it an area to explore.

Objectives of the Study

The aims of this study are:

1. Carryout conceptual review of previous studies on green accounting in Nigeria and other emerging economies
2. Examine the legal framework of green accounting in Nigeria
3. Elaborate on the benefits and challenges of green accounting
4. Conduct methodological review of the application of green accounting in Nigeria

Review of Conceptual Literature

According to Shanker, Barik and Ratchana (2020) green accounting is a contemporary type of accounting system that factors environment costs into the financial statements of an organization. Dura and Suharsono (2022) argued that green accounting is a concept in which businesses focus on efficiency and effectiveness in the long-term use of resources in their manufacturing processes to integrate corporate growth with environmental functions and deliver societal benefits. The goal is to provide information about the company's operational performance based on environmental protection (Benson,Ita,Ohanya&Adesola, 2021).

Gomathi (2021) opined that green accounting involves estimation of environmental expenditures/cost, capitalization of those environmental expenditures and identification and measurement of environmental liabilities. Unlike conventional accounting, green accounting accounts for the environment and its well-being, it add environmental costs and long-run effects of economic activity on the environment into the financial results of operations (Sadiku, Ashaolu, Adekunte& Musa, 2021).

Nguyen, Ha and Tran (2023) defined green accounting as an accounting method that uses accounts in the System of Environmental Economic Accounting (SEEA), focuses on the depletion of scarce natural resources, and convert behaviours with environmental and social impacts into costs/revenues, and profits in monetary units. Green accounting attempts to factor environmental costs into the financial statement (Rewadikar, 2014). It has also been argued that at the national level, the computation of Gross Domestic Product (GDP) ignores environment cost and therefore decision makers need a revised model that incorporates green accounting.

Bouarar (2020) described green accounting as the ability to provide accurate information in the financial statements regarding the estimated social cost occasioned by the production externalities on the environment and how much deliberate intervention cost had been incurred to bridge the gap between the marginal social cost and the marginal private cost by a firm. Green accounting is a modern and comprehensive accounting system and it is developed to help an organization record, synthesize data and make reports so that all of the aspects related to an organization including assets, liabilities, investment, revenues and expenditures are ensured to be transparent, complete and accurate (Huong& Hang, 2020).

There are five types of green accounting: Environment Management Accounting (EMA), Environmental Financial Accounting (EFA), Environmental National Accounting (ENA), Natural Resource Accounting (NRA) and Ecological Accounting (EA), however, the study of Gomathi (2021) reviewed only three types of green accounting (EMA, EFA and ENA), while the study of Benson et al. (2021); Rewadikar (2014); Kumari (2019) reviewed all the five types of green accounting (EMA, EFA, ENA, NRA and EA). This study operationalizes green accounting (also known as sustainable accounting or environmental accounting) as the act of measurement and reporting the combined impact of environmental and economic activities by companies and the government.

Development of Green Accounting

Environmental disruption could be traced to the era of industrial revolution in the 18th century when the use of mechanized system or technology began to take over from the traditional approach of doing things in organizations (Emmanuel, 2021).The thought about green accounting began when the United States of America imposed stricter regulations on pollution between 1973 and 1982, the regulation led to a 0.09% decrease per year in the national output growth of pollution. Singh, Singh, Arora and Mittal (2019) opined that green accounting, being an environmental accounting, was introduced in 1980 by an economist and Professor Peter Wood, it plays a vital role in today's corporate social responsibility.

In 2013, the World Bank reported on the progress of five nations, Botswana, Colombia, Costa Rica, Madagascar and the Philippines on implementing its Wealth Accounting and Valuation of Ecosystem Services (WAVES) project 6, the goal of WAVES is to promote sustainable development by making sure the value of natural resources is taken into account in the measurement and plans for economic growth. The study of Huong and Hang (2020) noted that in 2014, the United Nations implemented the applicable program of "System of Environmental Economic Accounting" known as green accounting. But even before then, a non-profit organization in USA known as Sustainability Accounting Standards Board founded by Jean Rogers in 2011 has developed accounting standards for different industries that will enable companies to carryout sustainability reporting in their annual reports.

In Nigeria, the enactment of the Petroleum Industry Act (PIA) 2021 will promote exploration and exploitation of petroleum products for the benefit of the Nigerian people, and above all will ensure sustainable development and green accounting in the petroleum industry. Finally, it will create a conducive business environment within the petroleum industry.

Legal Framework of Green Accounting in Nigeria

1. Mineral Act Cap. 286, LFN 1990.
2. National Environmental Protection (Protection Abatement in Industries And Facilities Generating Waste) Regulations S49 OF LFN 1991
3. Environmental Impact Assessment (EIA) Act 1992
4. Nuclear Safety and Radiation Protection Decree, 1995 (No. 19 of 1995)
5. Hydrocarbon Oil Refineries Act, Cap H5, LFN 2004
6. Oil in Navigable Waters Act, Cap 06, LFN 2004
7. Water Resources Act, Cap W2, LFN 2004
8. Harmful Waste (Special Criminal Provisions) Act, Cap H1, LFN 2004
9. Associated Gas Re-Injection Act
10. Oil Pipelines Act, Cap 07, LFN 2004
11. Nigerian Mining Corporation Act. Cap N120, LFN 2004
12. Factories Act, Cap F1, LFN 2004.

13. Sea Fisheries Act, Cap S4, LFN 2004
14. Inland Fisheries Act, Cap I10, LFN 2004
15. National Oil Spill Detection and Response Agency (Establishment) Act, 2006
16. National Environmental Standards Regulations and Enforcement Agency (Establishment) Act 2007 (NESREA)
17. Nigerian Minerals and Mining Act, 2007
18. Petroleum Industry Act (PIA) 2021

The study of Okoli et al (2021) assert that despite the above mentioned environmental laws and policies targeted at ameliorating environmental problems in Nigeria, the situation seems degenerating owing to the fact that these laws are not effectively enforced. For instance, Egbunike and Okoro (2018) opined that oil and gas companies, as well as non-consumer goods companies in Nigeria are involved in environmental pollution. Also, it is obvious that there is no generally accepted method of measurement and reporting of green accounting in Nigeria (Obiora&Nwamah, 2022).

Benefits and Challenges of Green Accounting

The benefits derived from the application of green accounting is that green accounting encourage both the government and companies to invest in cleaner and efficient technologies (Wahyuni, 2009; Sinha, 2022), the study of Singh et al. (2019) argued that through green accounting, nations can observe their economic growth at a sustainable level, it will lead to increase in corporate profits and share value of company (Sebastian, 2022), green accounting will help in improving environmental performance and costs control (Sadikuet al, 2021; Kumari, 2019),firms can also decide how much of an environmental resource to use and when to use it (Gupta, 2022). Green accounting assist accountants to estimate environmental impacts, thereby helping policy makers and business administrators to have a way to cope and deal with them properly (Huong& Hang, 2020).

Some of the challenges of green accounting and reporting is thatit is difficult to accurately measure the pollution level of each industry since all industries do not pollute the same amount (Rewadikar, 2014; Sadiku, Ashaolu, Adekunte& Musa, 2021), there is no standard accounting method for environmental accounting and reporting (Kumari, 2019; Sebastian, 2022; Gupta, 2022).It is not possible to value every component of natural capital and human capital in an accurate manner (Ritu&Chawla, 2021), the cost involved in training staffs and employees on green accounting is high (Demdoum, Meraghni&Bekkouche, 2021; Singh et al. (2019).

Table 1: Summary of Prior Literature Review

S/No	Authors	Research Article Title	Journal Title	Year	Country	Methodology	Findings
1	Benson, N., Ita, A., Ohanya, I. &Adesola, F.	Effect of green accounting on financial performance of oil and gas companies in Nigeria	Journal of university of shanghai for science and technology	2021	Nigeria	**Method**: Quantitative **Research Design**: Ex-post facto **Coverage:** 2010-2020 **Source of Data:** Secondary **Population:** 11	The results showed that environmental cost accounting has a significant effect on the financial performance.

						Sampling Method: Census **Sample:** 11 **Tool of analysis:** Regression analysis **Dependent Variable:**Financial performance **Independent Variables:** Green accounting	
2	Okoli, C., Onuora, J. &Emeka-Nwokeji, N.	Green accounting and firm performance in Nigeria	International journal of trend in scientific research and development	2021	Nigeria	**Method**: Quantitative **Research Design**: Ex-post facto **Coverage:** 2012-2019 **Source of Data:** Secondary **Population:** 80manufacturing firms listed on the Nigerian Stock Exchange that disclosed green accounting information **Sampling Method:** Purposive sampling **Sample:** 72 **Tool of analysis:** Regression analysis **Dependent Variable:** Firm performance (Tobin's Q) **Independent Variables:** Green accounting (material and energy disclosure)	From the analysis it was discovered that material and energy disclosure have positive and significant effect on firm performance, however, there is low level disclosure for material. This can be attributed to the voluntary nature of green accounting in Nigeria
3	Obiora, F. &Nwamah, K.	Impact of green accounting disclosures on sustainability of manufacturing firms in Nigeria	International journal of trend in scientific research and development	2022	Nigeria	**Method**: Quantitative **Research Design**: Ex-post facto **Coverage:** 2016-2020 **Source of Data:** Secondary **Population:** 13 listed industrial goods companies on Nigerian Exchange Group **Sampling Method:** Purposive sampling **Sample:** 12 **Tool of analysis:** Ordinary Least Squares (OLS) regression **Dependent Variable:** sustainability reporting (1 if an item was reported, 0 if otherwise) **Independent Variables:** Green accounting **(**waste Management, pollution control and environmental remediation disclosure)	Finding of the study indicated that waste management disclosure, pollution control and environmental remediation disclosure have significant and positive impact on firms' sustainability
4	Egbunike, A. &Okoro, G.	Does green accounting matter to the	Ekonomskihorizonti	2018	Nigeria	**Method**: Quantitative **Research Design**: Ex-post facto	The study revealed that there was no significant relationship

		profitability of firms? A canonical assessment.				**Coverage:** 2012-2016 **Source of Data:** Secondary **Population:** All listednon-consumer goods companies on the Nigerian Stock Exchange **Sampling Method:** Purposive sampling **Sample:** 10 **Tool of analysis:** Canonical correlations **Dependent Variable:**profitability (return on equity and Tobin's Q) **Independent Variables:** Green accounting (expenses of community involvement and environmental protection)	between green accounting and profitability
5	Emmanuel, E.	Green accounting reporting and financial performance of manufacturing firms in Nigeria	American journal of humanities and social sciences research	2021	Nigeria	**Method**: Quantitative **Research Design**: Ex-post facto **Coverage:** 2010-2019 **Source of Data:** Secondary **Population:** 66listed manufacturing firms on Nigerian stock Exchange **Sampling Method:** Purposive **Sample:** 40 **Tool of analysis:** Regression analysis **Dependent Variable:** Financial performance (Return On Asset (ROA), return on equity and share price) **Independent Variables:** Green accounting disclosure	This study revealed that green accounting disclosure has a positive and significant effect on return on asset and return on equity respectively. However, a negative effect subsists between green accounting disclosure and share price
6	Meshack, S. & Eunice, M.	Green accounting and material flow analysis in oil producing companies in Nigeria	Journal of accounting and financial management	2022	Nigeria	**Method**: Quantitative **Research Design**: Ex-post facto **Coverage:** 2018-2020 **Source of Data:** Secondary **Population:** All quoted oil and gas companies on the Nigerian Exchange Group **Sampling Method:** Purposive sampling **Sample:** 5 **Tool of analysis:** Regression analysis **Dependent Variable:**Material flow (Material turnover	Finding showed thatgreen accounting disclosure has a significant positive effect on material turnover

						measured as net sales/bought in materials) **Independent Variables:**Green accounting disclosure	
7	Almaliki, N.	Impact of green accounting on improving environmental costs and performance	International journal of engineering technology research & management	2020	Iraq	**Method**: Quantitative **Research Design**: Descriptive **Coverage:** 2019 **Source of Data:** Primary **Population:** 100 executive managers of listed companied in Iraq **Sampling Method:** Snowball **Sample:** 79 **Tool of analysis:** Regression analysis **Dependent Variable:** Green accounting (eco-efficiency and strategic position disclosure) **Independent Variables:** Environmental Performance	This study found that adopting green accounting contributes effectively to reducing costs and improving environmental performance.
8	Dhar, B., Sarkar, S. &Ayittey, F.	Impact of social responsibility disclosure between implementation of green accounting and sustainable development	Journal of corporate social responsibility and environmental management	2021	Banglades h	**Method**: Quantitative **Research Design**: Descriptive **Coverage:** 2010 - 2019 **Source of Data:** Secondary **Population:** 604 listed companies from Dhaka Stock Exchange **Sampling Method:** Purposive **Sample:** 212 **Tool of analysis**: Regression analysis **Dependent Variable:** Sustainable development for each company (Dummy variable) **Independent Variables:** Green accounting (if a company implement green accounting assign 1, otherwise 0)	The study discovered that the effective implementation of green accounting has significantly improved the sustainable development capabilities of heavily polluting companies
9	Shanker, M., Barik, M. &Ratchana, R.	Private corporates'green accounting reporting practices - perception and awareness among employees	UGC Care Journal	2020	India	**Method**: Quantitative **Research Design**: Ex-post facto **Coverage:** 2000-2020 **Source of Data:** Primary **Population:** 200 employees fromLarsen & Toubro, Tata consultancy services, Tech Mahindra, and Essar Oil **Sampling Method:** convenience sampling	This study found that sustainable environment and rational utilisation of natural resources are the major factor for the increased need of green accounting

						Sample: 140 **Tool of analysis:** Pearson's chi-square **Dependent Variable:** awareness level, perception and cost of implementation of green accounting practices. **Independent Variables:** Age and gender	
10	Ulupui, G., Murdayanti, Y., Marini, A., Purwohedi, Mardi, A. &Yanto, H.	Green accounting, material flow cost accounting and environmental performance	Journal of accounting	2020	Indonesia	**Method**: Quantitative **Research Design**: Descriptive **Coverage:** 2013-2018 **Source of Data:** Secondary **Population:** 6 cement Companies listed in Indonesia Stock Exchange **Sampling Method:** Purposive sampling **Sample:** 4 cementCompanies **Tool of analysis:** SmartPLS **Dependent Variable:** Environmental performance (measured by PROPER rating) **Independent Variables:** Green accounting data obtained from the Global Reporting Initiative (GRI)	This study found that green accounting affects environmental performance
11	Susanti, I., Hertati, L. &Putri, A.	Effect of green accounting and environmental performance on company profitability.	Current advanced research on sharia finance and economic worldwide	2023	Indonesia	**Method**: Quantitative **Research Design**: Descriptive **Coverage:** 2018-2021 **Source of Data:** Secondary **Population:** All Mining Sub-Sectors traded on the Indonesia Stock Exchange **Sampling Method:** Purposive sampling **Sample:** 12 **Tool of analysis:** Linear regression analysis **Dependent Variable:** Profitability (inventory turnover = net profit /total asset) **Independent Variables:**Green accounting **(**environmental costs = cost/profit). Environmental performance was measured using PROPER	This study found that mining companies listed on the Indonesia Stock Exchange benefited financially from green accounting and environmental performance between 2018 and 2021.

12	Rahman, M. & Mohammad, I.	The impact of green accounting on environmental performance: mediating effects of energy efficiency	Environmental science and pollution research	2023	Banglades h	**Method**: Quantitative **Research Design**: Ex-post facto **Coverage:** 2022 **Source of Data:** Primary **Population:** 400responses frompharmaceutical and chemical companies **Sampling Method:** Simple random sampling **Sample:** 326 **Tool of analysis:** Partial Least Squares Structural Equation Modeling **Dependent Variable:** environmental performance **Independent Variables:** green accounting	This study found out that green accounting has a significant positive impact on both energy efficiency and environmental performance.
13	Dura, J. &Suharsono, R.	Impact of green accounting on financial performance in Indonesia green industry	Jurnalakuntansi	2022	Indonesia	**Method**: Quantitative **Research Design**: Descriptive **Coverage:** 2017-2020 **Source of Data:** Secondary **Population:** 52 manufacturing companies listed on the Indonesia Stock Exchange. **Sampling Method:** purposive sampling **Sample:** 13 **Tool of analysis:** Regression analysis **Dependent Variable:** Financial performance, measured using (ROA) **Independent Variables:** Green accounting was measured using the Company Performance Rating Assessment Program (PROPER)	This study found that green accounting has an impact on financial performance
14	Nguyen, T., Ha, H. & Tran, M.	Determinants influencing the application of green accounting: The case of Vietnamese constructions firms	Corporate governance and organizational behavior review	2023	Vietnam	**Method**: Quantitative **Research Design**: Descriptive **Coverage:** 2022 **Source of Data:** Primary **Population:** 125 construction firms in Vietnam **Sampling Method:** Snowball **Sample:** 243 questionnaires **Tool of analysis:** Regression analysis **Dependent Variable:** Decision on application of green accounting	This study found out that there are five determinants affecting the application of green accounting in Vietnamese construction firms: staff levels and resources, legal and regulatory systems, customer demands, legal and educational systems, stakeholder, managers' perceptions

						Independent Variables: Firm size, Management awareness, Financial resources, Legal and regulatory system, Education and training system, Stakeholders, Staff level, Competitiveness, Business lines	
15	Sukmadilaga, C., Winarningsih, S., Yudianto, I., Lestari, T. &Ghani, E.	Does green accounting affect firm value? Evidence from ASEAN countries	International journal of energy economics and policy	2023	Association of SouthEast Asian Nations (ASEA) countries	**Method**: Quantitative **Research Design**: Ex-post facto **Coverage:** 2017-2021 **Source of Data:** Secondary **Population:** 29 companies that won the Asia sustainability reporting awards (Singapore, Indonesia and Malaysia) **Sampling Method:** Purposive sampling **Sample:** 15 companies from the population **Tool of analysis:** Multiple linear regression analysis **Dependent Variable:**Firm value was denoted by Economic Value Added (EVA) **Independent Variables:** Green accounting (energy, water and emission)	Findings revealed that energy and emission have significant positive and negative effect respectively on EVA, while water has an insignificant negative effect on EVA.
16	Sumiati, A., Susanti, S., Maulana, A., Indrawati, L., Puspitasari, D. &Indriani, R.	Influence of green accounting and environmental performance on profitability	Proceedings of the international conference on social, economic, business, and education	2021	Indonesia	**Method**: Quantitative **Research Design**: Descriptive **Coverage:** 2016-2018 **Source of Data:** Secondary **Population:** 107 mining and consumer goods companies listed in Indonesia Stock Exchange **Sampling Method:** Purposive sampling **Sample:** 37 **Tool of analysis:** Multiple linear regression **Dependent Variable:** Profitability **Independent Variables:** Green accounting (environmental cost)	It was discovered from the study that green accounting has a significant negative relationship with profitability.

17	Yeasin, H.	Green accounting	Journal of infrastructural development in Bangladesh	2021	Bangladesh	**Method**: Quantitative **Research Design**: Descriptive **Coverage:** 2016-2020 **Source of Data:** Articles fromScopus, Emerald, EBSCOS and Science Direct **Population:** 1162 articles **Sample:** 792 articles reviewed **Tool of analysis:** Bibliometric network creation and visualization software tool	In contrast to the western counterparts, minimal literature is obtainable on social & green accountancy in developing countries
18	Amaka, E. & Florence, A.	Green accounting: The way to economic sustainability	International journal of advanced economics and sustainable development	2020	Nigeria	**Method**: Qualitative **Research Design**: Exploratory	This study discovered that Nigeria is still in the initial stages of development in regards to green accounting
19	Sadiku, M., Ashaolu, T., Adekunte, S. & Musa, S	Green accounting: A primer	International journal of scientific advances	2021	Texas	**Method**: Qualitative **Research Design**: Exploratory	Government of each nation must proactively promote environmental awareness by bringing green accounting practices to the forefront of accounting.
20	Gomathi, A.	Green accounting for sustainable development	Virtual international conference on make in India : Redefined in a digital erafor sustainable development	2021	India	**Method**: Qualitative **Research Design**: Exploratory	This study found that there are several challenges of green accounting and reporting such a green accounting method, social values in applicable assumptions, economic value and lack of reliable industrial data.
21	Singh, S., Singh, A., Arora, S. & Mittal, S.	Revolution of green accounting: a conceptual review	2nd international conference on power energy, environment and intelligent control, institute of technology and management, Greater Noida	2019	India	**Method**: Qualitative **Research Design**: Exploratory	This study found that countries such as Norway, Philippines, Namibia, Chile, USA, Japan and India comply with environmental protection laws and regulations.
22	Jundong, M. &Juntao, M.	A research review of corporate green accounting information disclosure	IOP Conference Series: earth and environmental science	2019	China	**Method**: Qualitative **Research Design**: Exploratory	This study found that Chinese research focuses on the theory interpretation while international research focuses on wild fields
23	Yadav, M.	Green accounting: A review paper	*Environmental investigation reports*	2018	India	**Method**: Qualitative **Research Design**: Exploratory	It was discovered that environmental accounting is at

							preliminary stage in India
24	Gupta, M.	A study of green accounting practices in Indian companies: A way to sustainable development	Business Studies Journal	2022	India	**Method**: Qualitative **Research Design**: Exploratory	This study found that there is little awareness about green accounting in India, also, there is the need for accounting standard bodies to develop standard for green accounting.
25	Gonzalez, C. & Pena-Vinces, J.	A framework for a green accounting system-explorato ry study in a developing country	Environment, development and sustainability journal	2022	Colombia	**Method**: Qualitative **Research Design**: Exploratory	It was discovered that from the 150 sample industrial and commercial companies, Colombia are yet to implement environmental practices within the accounting system.
26	Sebastian, M.	A study on green accounting: Concept and its importance	International journal of creative research thoughts.	2022	India	**Method**: Qualitative **Research Design**: Exploratory	This study found that the implementation of green accounting in India is still low.
27	Wahyuni, D.	Environmental management accounting: techniques and benefits	Jurnalakuntansi universitasjembe r	2009	Australia	**Method**: Qualitative **Research Design**: Exploratory	This study revealed that environmental management accounting is associated with innovation, cleaner production, increased shareholder value and improved firm reputation
28	Moorthy, K. &Yacob, P.	Green accounting: cost measures	Open journal of accounting	2013	Malaysia	**Method**: Qualitative **Research Design**: Exploratory	This study found that SMEs in Malaysia often resistthe implementation of green accounting,the resistance is as a result oflack of awareness and lack of ethical education.
29	Tu, J. & Huang, H.	Analysis on the relationship between green accounting and green design for enterprises.	Journal of sustainability	2015	Taiwan	**Method**: Qualitative **Research Design**: Exploratory	It was discovered that the advent of green accounting was because clean products generate pollution and that the external production costs are not internalized.
30	Muhaiminul, I. &Rahman, N.	Green accounting practices in financial & non-financial sectors and its applicability	International journal of advances in engineering and management	2022	Banglades h	**Method**: Qualitative **Research Design**: Exploratory	This study found that in Bangladesh, information on minerals, energy sources, and the searchfor environment,

							economic potential and growthstrategies are not used as inputs in the macroeconomic models.
31	Deshwal, S.	Green accounting and practices	International journal of applied research	2015	India	**Method**: Qualitative **Research Design**: Exploratory	The result disclosed that there is significant difference on the application of green accounting practices between manufacturing and non- manufacturing companies.
32	Dhar, B.	Can green accounting save the environment?	OAJRC environmental science	2022	Indonesia	**Method**: Qualitative **Research Design**: Exploratory	This study disclosed that integrating green accounting into heavily polluting companies can significantly enhance their ability to manage sustainable development
33	Lako, A.	Conceptual framework of green accounting	Majalahakuntan	2018	Indonesia	**Method**: Qualitative **Research Design**: Exploratory	Finding revealed that the presentation of integrated green accounting information will assist users of financial statement to carry out assessments of economic and non-economic decisions that impact on the environment.
34	Farouk, S., Cherian, J. & Jacob, J.	Green accounting and management for sustainable manufacturing in developing countries	International journal of business and management	2012	Abu Dhabi, United Arab Emirates (UAE)	**Method**: Qualitative **Research Design**: Exploratory	This study discovered that there arelimited empirical studies on green accounting.
35	Bouarar, A.	Effect of green accounting adoption on companies' performance in developing economies: literature review.	Journal of the new economy	2020	Algeria	**Method**: Qualitative **Research Design**: Exploratory	From the literature reviewed, most studies indicated that there is positive effect of green accounting on the performance of companies, but with a varying degree based on countries, industries, companies, and greening adoption level.

Research Methodology

This study carried out a thorough review on the conceptual and methodological approaches used in assessing the application of green accounting in Nigeria in comparison with other emerging countries such as India, Bangladesh and Indonesia. To this effect, the method of this research becomes qualitative and exploratory research design adopted. In this study, 35 research articles were reviewed of which 7 were published in Nigeria while 28 were published in other countries mostly emerging countries. The period of publication on the articles reviewed ranged from 2009 to 2023.

Discussion of Finding

There are few studies conducted specifically on green accounting in Nigeria from the literature reviewed above. Six out of the seven studies were empirically driven (Obiora&Nwamah, 2022; Benson et al, 2021; Emmanuel, 2021; Egbunike&Okoro, 2018; Meshack& Eunice, 2022; Okoli et al, 2021) while the study of Amaka and Florence (2020) was a conceptual review. In comparison with those studies conducted in emerging economies such as India and Indonesia, this clearly shows the need to scale up both conceptual and empirical research on green accounting in Nigeria.

This study also discovered that from the literature reviewed that the environmental laws enacted in Nigeria were not effectively implemented by companies and government institution, this could be as a result of the absence of a generally accepted method of measurement and reporting of environmental cost in Nigeria. Another setback to environmental reporting in Nigeria is that reporting is voluntary.

Conclusion and Recommendations

This study concludes that studies on green accounting in Nigeria are scanty and it is at infant stage. Also,very few studies exist that has examined the conceptual and methodological approaches in the application of green accounting in Nigeria. This study recommends first,there should be scale up of research on green accounting in Nigeria. Secondly, companies and government institutions should ensure they implement those environmental laws enacted in Nigeria by reporting the environmental costs and benefits in their annual report. Finally,Financial Reporting Council of Nigeria saddled with the responsibility of development of accounting standards should develop methods of measurement and reporting of green accounting and enforce compliance.

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