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Green Accounting Practices and Firm's Performance, Evidence from Ghana's Manufacturing Sector

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Abstract

The study examined green accounting practices and firm's performance. The relationship between green accounting and return on capital employed, return on assets and dividend per share of listed manufacturing firms on Ghana stock exchange were explored. The quantitative research approach and longitudinal research design were adopted for the study. The population of the study comprised all listed manufacturing firms on the Ghana stock exchange, of which eight were purposively sampled. Data for the study was obtained from 160 published financial reports of the selected firms. The panel regression model was used to establish a relationship between the variables. The revealed that green accounting significantly affect return on capital employed. However, green accounting does not significantly affect return on assets and dividend per share. Also, a positive connection was observed for green accounting and return on capital employed and return on assets whilst negative association was observed for green accounting and dividend per share. It is recommended that management of manufacturing firms should take matters of green accounting serious in other to protect the immediate environment. The government of Ghana should pass legislation to make green reporting mandatory for companies and also, green reporting should be made a mandatory requirement for listing status on the Ghana stock exchange.

Keywords: Green accounting • Return on capital employed • Return on assets • Dividend per share • Financial performance

Introduction

According to green accounting is a path to a viable future. Giving reports on an organization's financial performance alone is no longer the primary focus of reporting in this modern era since stakeholders, including investors, are gradually demanding that businesses also produce accounting of their impact on the environment and society. Because there is a clear correlation between an organization's environmental and social performance and its financial health, the relevance of green reporting or accounting has lately increased among stakeholders and organizations. Therefore, it can be said that green accounting instructs every company's stakeholder to consider the demands of the environment in order to maintain the company's operations. As demonstrated in Info Cat, corporate social responsibility of businesses now includes a company's obligation to the environment in which it works [1].

All expenses related to environmental protection are taken into account in green accounting, including the processing of emissions as waste materials, labor and capital, also known as "non-product output," which is brought on by inefficient production processes.

The growing industrial operations in the modern business is posing a lot of challenges to human existence. The expansion of industrial activity has a significant impact on the environment, which is essential to human survival. Clean water, clear air, land, greenhouse gases, energy, ecosystems, biodiversity and other natural aspects are being destroyed, putting the sustainability of the environment in jeopardy. The mechanized agricultural system for better yield in commercial farming has resulted in deforestation, animal and plant habitat loss, and the extinction of several significant environmental species as a result of the adoption of contemporary agriculture systems. As a rising industrial power with lots of natural resources like bauxite, petroleum, limestone, timber, good vegetation, fertile land and the sea and its habitats, Ghana is confronted with several environmental challenges. This is because the country consistently engages in activities that have a negative impact on the environment in an effort to use these resources to expand its economy and improve the welfare of its citizens [2].

In Ghana, green accounting is not a compulsory requirement for firms that are listed in the Ghana stock exchange. However, with regards to an increasing environmental activity within the society and

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the continued degradation of the environment brought on by an increase in industrial activities, with the aim of keeping track of environmental actions and determining if the data generated has a major impact on the performances of organizations, there is an increase in calls for environmental accounting inside businesses, particularly manufacturing firms, which are the major organizations responsible for the highest levels of toxic pollution in society. Yet, majority of firms do not demonstrate their willingness to spend the appropriate amount of money in an effort to safeguard the environment, hence, human safety cannot be guaranteed and the environment is being destroyed daily as a result of these businesses' tendency to view costs associated with societal performance as financial burdens [3].

Due to the traditional accounting practices' concealment of significant environmental costs and actions with detrimental environmental effects, this accounting system has proven to be insufficient. In this regard, traditional cost accounting methods have been the norm for most businesses. The accurate reporting of financial data is hampered by corporate negligence and a refusal to pay environmental costs. Users of financial data, including shareholders, regulatory agencies, environmentalists and potential investors in the financial sector, lack access to analyses of the data that are comprehensive, accurate or fair. As stated when the cost of destroying the environment is not fully incorporated in an organization's financial reports, it will be perceived as serving the interests of the stakeholders by achieving the required rate of return, regardless of how harmful it is to society and the environment, endangering the firm's ability to survive. Without taking into account the negative quantitative externalities to society, this will not accurately reveal whether a company can cover its cost of capital [4].

According to there is little doubt that green accounting has gained popularity, with the coming into existence of the Global Reporting Initiative (GRI) in 1997 and the Environmental Sustainable Goal in 2005. The conventional school of thought, which prioritizes maximizing owner value while ignoring the impact it has on the environment, is steadily evolving. Also, experiential evidence also suggests that many companies that are performing well generally support their less sustainable counterparts in a big way.

But there are no many studies conducted in the area, thus finding out the impact of green accounting practices on the financial performance of manufacturing firms. The few studies came across by the researcher focused on listed firms and were not narrowed to manufacturing firms, which this study focused on. Again the studies came across by the researcher used only 5 to 10 years' data from the firms but this study extended the investigations and used 20 years data [5].

Again, when it comes to green accounting and profitability metrics, there are conflicting data that produce inconclusive outcomes. While some research has shown that there is a positive connection between green accounting and profitability.

In furtherance whiles a positive connection was found to exist between green accounting and some profitability determinants like the return on assets and return on equity, a negative association was equally found to exist between green accounting and other profitability proxies like; share price and dividend per share. The fact that previous research on green accounting and firm performance indicators among businesses in Ghana and elsewhere has been equivocal is what spurred this study [6].

Theoretical review and hypothesis development

This study was rooted on the stakeholders' theory, and the legitimacy theory. Studies on environmental issues mostly used these theories. The stakeholder theory establishes a connection between an organisation and its stakeholders. The theory argues that the ability of a firm to survive is dependent on its relationship with the public. According to the core business, according to the stakeholder theory's view, is ethics. The approach lends ethics a far more utilitarian perspective. In business, we attempt to comprehend the kinds of goods and services to provide to consumers in order to improve their lives, to provide work, to sustain jobs and salaries for workers as well as having excellent relationships with suppliers. To do this, the firm needs to establish some sort of relationship with the community in which it works so that there are conducive conditions for business success and it was this that distinguished stakeholder theory. However, in an attempt to meet the demands or needs of all these stakeholders, most firms are always attempted to violate the community norms and laws. This cause the emergence of the legitimacy theory [7].

Legitimacy theory opines that organizations should continuously try to ensure that they carry out activities in accordance with societal boundaries and laws. Legitimacy theory places emphasis on how businesses engage with society. Rahmawati, asserts that firms and their management act and make reports in agreement with the demands and authority of diverse stakeholder groups. Through the existence of this legitimacy theory, it is believed that businesses engaging in CSR activities will no longer see these activities as requirements that have a negative impact on the company, but rather as chances to promote social congruency in accordance with social norms and values, thereby achieving company legitimacy.

Green accounting practices and firm's performance (return on capital employed)

According to green accounting refers to the recognition and disclosure of environmental costs. He continued by saying that using green accounting, every sort of organization's environmental performance can be evaluated economically. The purpose of this is to share data on how the business operates on a daily basis to safeguard the environment. In the conventional type of accounting, shareholders are only given economic data that is financial in character for use in making decisions. However, as a sign of accountability to the environment,

environmental reports must be included in a company's financial data [8].

Return on Capital Employed (ROCE), a financial measure, can be used to assess an organization's profitability and capital efficiency. To put it another way, this ratio can be used to assess how well a company is recovering its capital investment. Investors look at a firm's ROCE to decide whether or not to buy its shares. A higher ROCE demonstrates that the business earns greater returns per unit of an amount of invested capital.

Although, some studies have found a positive relationship between green accounting and firm performance for instance the relationship between green accounting and return on capital employed among oil and gas companies in Ghana was found to be positive, other past studies conducted in different contexts have found a negative relationship between green accounting and firm's performance. For instance, the effect of green accounting practices on firm performance was found to be negatively significant for Nigeria oil and gas firms [9].

H_1: Green accounting practice has a significant positive relationship on return on capital employed.

Green accounting practices and firm's performance (return on assets)

Green accounting, in the opinion of Lewis and Chopparapu, primarily refers to the attitude an organization has toward the environment. Environmental change has an impact on both the economy and the environment. Few businesses have adequate knowledge of environmental issues and those that do tend to focus on specific techniques related to pollution control, energy usage, waste water generation, etc. As a result, appropriate information about resource usage is not always available, despite the fact that such information is essential for implementing sustainable growth.

The return on assets indicator, which demonstrates whether a business can earn a respectable return on its invested assets, is one of the common accounting and profitability measures used to assess financial performance. The effectiveness of management's resource management is also gauged by ROA. Environmental accounting disclosure and return on assets have a strong correlation, according to research on the financial performance of Nigerian food and beverage enterprises [10].

H_2: Green accounting practice and return on assets are insignificantly positive related.

Green accounting practices and firm's performance (dividend per share)

Green accounting refers to the identification, quantifying and assigning environmental expenses as well as incorporating them into business operations in order to make stakeholders of the firms aware of this information. This makes it a comprehensive method of ensuring appropriate corporate governance, which includes openness in its socially responsible actions. The lack of seriousness with which many businesses approach environmental accounting cause them to fall short of expectations.

The total of all declared dividends paid by a company for each outstanding share of its common stock is known as dividend per share and in short DPS. In a study titled "The Effect of Green Accounting on Profitability of Companies Listed in Bombay Stock Exchange," discuss this topic. A dependent variable in the study was dividends per share, while an independent variable was the amount spent on environmental protection. The findings showed that the dependent variable dividend per share and the independent variable environmental protection cost had a positive association (Figure 1) [11].

H_3: There is an insignificant negative relationship between green accounting practices and dividend per share.

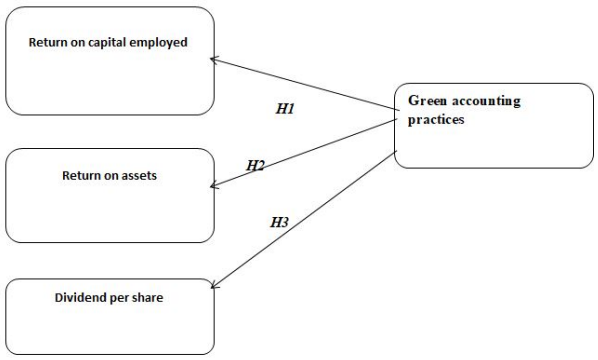

Figure 1. Conceptual framework.

Materials and Methods

Sample and data collection

The population of the study covered all companies that undertake any form of manufacturing and processing of products and were listed on the Ghana stock exchange. In all there were 12 manufacturing firms that served as the population of the study. This is because the study intended to make conclusions on all listed manufacturing firms in Ghana. Out of this population, eight (8) of the manufacturing companies that are publicly traded on the Ghana stock exchange served as the study's sample. Though there were many manufacturing firms, eight of them were selected. These firms were selected based on the fact that they were listed on the Ghana stock exchange and also have published their annual reports for the period of 20 years thus starting from 2003 to 2022. This criterion was used because the researcher was interested in using data over a twenty-year period as a result the following firms included in the study; Guinness Ghana plc, Aluworks Plc, Fan Milk Ghana, Benso Oil palm plc, Uniliver Ghana, Cocoa processing Company, Camelot Ghana limited and Sam woode ltd [12].

One hundred and sixty (160) annual reports from the selected companies, covering the years 2003 to 2022, were used to gather the data. The researcher initially obtained the data from the GSE using the selected companies' annual reports and for each of the 20 years, the reports were examined and the three performance indicators: Return on

assets, return on capital employed and dividend per share, were calculated for each firm. Additionally, the GRI standards document was used and ten of the criteria were taken out in order to assess the level of green accounting practiced by each of the companies. The companies were then graded based on the guidelines; a company received a score of one (1) if it followed a particular guideline in any given year and a score of zero (0) if it did not in any of the years. The green accounting percentage for each company over the course of the twenty years was then calculated [13].

Measures

The dependent variables of the study were calculated using the formulae as indicated in the table below (Table 1).

Variable	Formula
Return on Capital Employed (ROCE)	(Profit it before interest and tax/Total asset less current liabialities) × 100
Return on Assets (ROA)	(Profit it before interest and tax/Total asset) × 100
Dividend per Share (DPS)	Dividend paid/Proposed number of equity shares

Table 1. Formula for calculating the variable of the study.

Data analysis technique

The examination of data is the most crucial component of research. Data analysis, according to Fouche and Delport, is the act of giving a mass of data order, structure and meaning. It entails sifting, sorting, selecting and organizing obtained data to develop a deeper understanding of events. Data analysis is the process of arranging unstructured data in an effort to break it down into manageable pieces. This can be done by searching for patterns to identify important information. It entails the analysis of unprocessed data. It involves the interpretation of raw information obtained by using analytical tools as well as rational thinking to get patterns, relationships or trends [14].

Stata software was used to statistically analyze the raw data collected for the study. During the analysis, the study used descriptive statistics such the mean and standard deviation. Additionally, p-values and R-square values were used to carry out correlation and regression analyses. The variables' co-efficient show how dependent and independent variables are related to one another as well as the pertinent statistics needed to evaluate the performance of the given dependent variables.

Descriptive statistics was employed in the analysis, in contrast to inferential statistics, this method attempted to define the data but did not attempt to extrapolate research results to the full population. This implies that descriptive statistics, as opposed to those based on probability confluence, are also more accurate. The median propensity of the data required is the mean score. That is, a Figure around a sample set. In essence, one number has the same worth as a complete set of data. The average interval distribution between each amount and the average might be referred to as standard deviation. Additionally, this is how most information is disseminated. A low rate of divergence suggests that the indicators somehow match the data set, whereas a high standard deviation suggests that the variables are spread across a broader spectrum of values. The study made use of mean, standard deviation, minimum and maximum values to describe the nature and extend of the study's variables [15].

Again, regression analysis was utilized in the study that is, a type of quantitative research approach that is employed in investigations that call for the creation and assessment of many variables and the connection between dependent and independent variables. Regression analysis is the process of examining relationships between independent and dependent variables using numerical approaches. The p-values, R-square, co-efficient of the variables and the modified R-square values were used in this study's regression analysis to establish the association between environmental accounting and financial performance.

Findings

Table 2 provides a descriptive analysis for the study's variables. The findings indicate that green accounting has a mean score of 0.5113 and an SD of 0.1930. The manufacturing companies have, on average, accounted on 54.5% of the green reporting determinants out of the ten Global Reporting Initiatives standards on environmental issues used in this study. In addition, green reporting was observed to have a minimum score of 10% and a maximum score of 90%. This demonstrates that many of the manufacturing companies took

environmental issues seriously. The minimum value suggests that some businesses did not, however take environmental issues seriously.

The observed mean and standard deviation for Return on Capital Employed (ROCE) were (M=0.2780, SD=0.5533), indicating that the average ROCE was 28%, which implies that the selected firms average return on capital employed was 28%. Also noted are a minimum ROCE of -152% and a maximum ROCE of 224%, which demonstrates that the return on assets of the firms fluctuates. As a result, some of the listed manufacturing firms were performing well in their profit margins while others were making significant losses. A firm could also perform well in a given year with regard to its return on capital employed but also experience some losses in subsequent years.

The average Return on Assets (ROA) for the companies was 9%, which indicates that the firms were making a profit from their assets or economic resources on their balance sheet at a rate of 9%. The Return on Asset (ROA) has a mean and standard deviation of (M=0.0901 and SD=0.1525). The minimum ROA among the chosen companies for the twenty-year period is -58% and the maximum ROA for the period among the chosen companies is 65%. This implies that some businesses were losing money using their financial resources or assets, while others were using their assets wisely and turning a 65% profit on their entire assets.

The average dividend per share that the listed manufacturing firms paid to their investors was (M=0.1764 SD=0.5954), meaning that the average dividend per share of the listed manufacturing firms were paying to their investors was 0.1764 per share however, the minimum DPS for the period was 0.00 Ghana cedis per share and the maximum DPS for the same period was 4 Ghana cedis per share. This means the price of investing in the manufacturing sector is volatile, that the price of money as far as the manufacturing sector is concern is not stable.

Variables	Obs	Mean	Std. dev.	Min.	Max.
GA	160	0.5113	0.193	0.1	0.9
ROCE	160	0.2799	0.5534	-1.52	2.24
DPS	160	0.1764	0.5954	0	4
ROA	160	0.0901	0.1525	-0.58	0.65

Table 2. The descriptive statistics of the variables.

In order to ascertain the connection between green accounting practices and return on capital employed for listed manufacturing firms, a regression analysis on the green accounting score and return on capital employed was conducted. A summary of the results is shown in Table 3.

Table 3 shows the model summary of one of the factors affecting firm's performance (return on capital employed) revealed that green accounting is not a significant factor in determining firm's performance (return on capital employed), as indicated by the f-ratio's value of 7.50. However, the R square was found to be 0.393, which indicates that, all factors being equal, green accounting could account for 39.3% of the variation in firm's performance with regards to the return on capital employed as shown in the financial statements. Whiles the remaining variation in the return on capital employed is explained by other factors [16].

Variable	Number of obs.	F (1,158)	Prob>F	R-square	Adj. R-square	Root MSE
ROCE	160	7.5	0.0069	0.453	0.393	0.54242
Source	SS		df		MS	
Model	2.2065		1		2.2065	
Total	48.6929		159		0.3062	
Residual	46.4864		158		0.2942	

Table 3. Model summary of green accounting on return on capital employed of listed manufacturing firms.

Table 4 further shows that green accounting, the independent variable, is statistically significant on return on capital employed. Because a p value of 0.007 at the 5% level of significance was observed meaning $p<0.05$. However, there is evidence of a positive relationship between green accounting and the return on capital employed, as indicated by the coefficient of 0.61, which suggests that a unit change in the manufacturing firms' green accounting practices will lead to 61% change in the company's firm's performance with respect to return on capital employed.

ROCE	Coef.	Std. err.	t	P>|t|	(95% Conf. interval)
GA	0.6105	0.2229	2.74	0.007	0.1702-1.0508

_cons	-0.0322	0.1218	-0.26	0.792	-0.2727-0.2083

Table 4. Regression coefficient of green accounting index on return on capital employed of listed manufacturing firms in Ghana.

Table 5 contained the model summary of the firm's performance determinant (return on assets) which demonstrates that green accounting is not a significant determinant of the firm's performance proxy (return on assets), with an f-ratio of 0.05 and R square of -0.0060. This means that green accounting practice could not explain the firm's performance variation with respect to return on assets experienced by the listed manufacturing firm.

In furtherance, as shown in Table 6 green accounting and return on assets have no substantial correlation, in that a p value of 0.831 at 5% significance level which means that p>0.05. In addition, there is a positive relationship between green accounting and the firm's performance determinant (return on assets). The coefficient of 0.135 suggests that a unit change in green accounting practices of the listed manufacturing firms will result in a 13.5% same directional change in the firm's performance (return on assets) of the sector when all other things remain the same. These statistics is shown below.

Variable	Number of obs.	F (1,158)	prob>F	R-square	Adj. R-square	Root MSE
ROA	160	0.05	0.8306	0.0003	-0.006	0.15299
Source	SS		df		MS	
Model	0.0011		1		0.0011	
Total	3.6992		159		0.0233	
Residual	3.6981		158		0.0224	

Table 5. Model summary of the effects of green accounting on return on assets of listed manufacturing firms.

RAO	Coef.	Std. err.	t	P>|t|	(95% Conf. interval)
GA	0.01348	0.0629	0.21	0.831	-.1107 .1377
_cons	0.08324	0.0343	2.242	0.017	.0154 .1511

Table 6. Regression coefficient for green accounting index on return on assets of listed manufacturing firms in Ghana.

Table 7 shows the model summary of the firm's performance determinant (dividend per share) and revealed that green accounting is not a significant determinant of the firm's performance proxy (dividend per share), as the f-ratio showed a value of 3.45 and the R square of to be 0.0151, which means that green accounting practice could only explained about 1.51% of the dividend per share variation experienced by the manufacturing firms, whiles the other 98.49% of the variation in the dividend per share was as a result of other factors.

The regression analysis shown in Table 8 further demonstrates that there is no significant association between green accounting practice and dividend per share because at a significance level of 0.05, a p value of 0.065 was discovered, implying that p>0.05. Additionally, the coefficient of the dividend per share indicates a negative correlation between the two variables. The coefficient of -0.451 indicates that, if all other factors remain constant, a unit change in the green accounting practice of the firms will result in a change of 45.1 percent in the dividend per share of the firms but in the opposite direction.

Variable	Number of obs.	F (1,158)	prob>F	R-square	Adj. R-square	Root MSE
DPS	160	0.05	0.8306	0.0003	-0.006	0.15299
Source	SS		df		MS	
Model	1.203		1		1.203	
Total	56.3642		159		0.3545	
Residual	55.1613		158		0.3491	

Table 7. Model summary of green accounting on dividend per share of listed manufacturing firms.

DPS	Coef.	Std. err.	t	P>|t|	(95% Conf. interval)
GA	-0.45079	0.242849	-1.86	0.065	-.9304438 .0288559
_cons	0.406906	0.132653	3.07	0.003	.1449034 .6689085

Table 8. Regression coefficient for environmental accounting index on the dividend per share of listed manufacturing firms in Ghana.

Results and Discussion

On the extend of green accounting issues, the various green practices of the selected firms include employee's health and safety, environmental protection policies, corporate social responsibilities reveal, proper disposal of waste, recycling of waste products, support to community member and government. These practices of green accounting conform to those stated in the Global reporting initiatives guidelines 2005 and the definition of green accounting who assumes that "Green accounting" refers to the recognition and disclosure of environmental costs. He continued by saying that using green accounting, every sort of organization's environmental performance can be evaluated economically. The purpose of this is to share data on how the business operates on a daily basis to safeguard the environment, the inhabitants and the workers of the business. The findings obtained conform to that their paper 'accounting for the environment: A lesson from a developing nation. They found that the mining, oil and gas industries have included information on environmental sustainability in their accounting and financial reporting. The content analysis reveals that the annual reports only contained positive qualitative disclosures with regard to the type of green disclosure. Again, almost all of the businesses have improved the caliber and volume of their environmental disclosures over time. Similarly, the findings revealed conform to Eze, who looked into environmental accounting disclosure and its impact on the financial performance of listed manufacturing companies in Nigeria. Some environmental accounting disclosure in the annual reports of Nigerian manufacturing firms included employee's health and safety cost, cost of protecting the green cover of the immediate environment of the firm and among others. Finally, on this findings, it conforms to Nwaiwu and Oluka who undertook a study to examine the association between environmental costs and financial performance metrics for listed oil and gas firms in Nigeria. The study's data were derived from the chosen companies' published financial records and used in the analysis. Waste management costs, environmental taxes and fines, rules and regulations, and abatement charges were all found to relate to environmental costs.

Regarding the relationship between green accounting practice and financial performance (return on capital employed), this section of the findings states that there is significant relationship between green accounting and firm's performance proxy Return on Capital (ROCE) as it was discovered in the analysis and the findings agreed with Ifurueze, Lydon and Bingilar who looked into the impact of environmental costs on oil companies' performance on the corporate level in Nigeria's Niger Delta. The study employed return on equity and return on capital employed as a stand-in for corporate performance costs. The study found a strong correlation between environmental costs to employee health and safety and business performance. Whiles the findings contradict the findings of Segun and Adeoye which found an insignificant relationship between green accounting and financial performance. Once more, the findings disagree with Yolanda Sugiarto's experiment with agency theory, which examined how corporate governance affected listed businesses' values over the period of 2010-2014 on the Indonesian stock exchange. According to the findings, between 2010 and 2014, firms listed on Indonesia's stock exchange's LQ-45 had a positive but not statistically significant impact on CSR and GCG's effect on company value. In other words, a company's financial performance will improve if it applies the agency theory to the way its operations are structured. In the same way this finding disagree with who published a study titled "The effect of environmental accounting on profitability of companies listed in Bombay stock exchange." Spending on environmental protection was seen as an independent variable, but the return on capital employed, return on assets, return on net worth or equity, net profit margin and dividend per share were all regarded as dependent variables. An adverse relationship between the independent and dependent variables was found in the study's analysis of the relationships between the variables.

Again, on the relationship between green accounting and Return on Assets (ROA). The results showed that there is no significant relationship between green accounting practice and firm's performance (return on assets). This disagree with a study that looked at the relationship between green accounting disclosure and financial performance of food and beverage companies in Nigeria and Again, the results contradict, who said that the stewardship theory predicts that stewards would act in a pro-social way that is focused on the interests of the principal, the community in which they operate, the entity's employees, and ultimately the organization as a whole. And that doing so will improve the business's financial and long-term fortunes. This section of the research findings however is consistent with paper on the impact of environmental accounting on profitability of companies listed in Bombay stock exchange, where the results showed a positive relationship between environmental protection and return on asset. This study's finding might be consistent with the legitimacy theory's interpretation. In terms of adhering to society standards and values, the community wants the corporation to be legitimate, which is another word for trust. Because the company has benefitted from the implementation of socially and environmentally responsible practices, since a company has benefited from using the resources of society, it is expected that some of the profits are re-invested in the community and the environment

in addition to being geared toward financial profitability. Additionally, by operating in a socially responsible manner, businesses can indirectly increase the level of community trust they enjoy as well as make a positive impression on investors and the general public hence increasing the value generation capacity of the firm's assets.

Finally, on the link between manufacturing companies' dividend per share and green accounting. The analysis revealed that there is a statistically insignificant correlation between the firm's performance (dividend per share) and the green accounting practice. A unit change in green accounting practice will result in a 45.1% change in the firm's dividend per share negatively, the coefficient of correlation further revealed a negative link between green accounting practice and dividend per share, the findings contradict who examine how environmental accounting affect the profitability of companies listed on the Bombay Stock Exchange, a favorable relationship between environmental protection and dividends per share was observed. The findings however agreed which explore the effect of environmental accounting on the financial performance of Nigerian businesses. Ten non-consumer goods companies that were listed on the Nigerian stock exchange between 2012 and 2016 were selected using an expo-facto research design. There was no obvious association among environmental accounting and investment ratios like the Dividend per Share (DPS). In the same way, this finding confirmed that who carried out a study that "investigated how environmental reporting by firms operating within the manufacturing sector in Nigeria affects their operational performance." The findings indicated that there is a link between environmental reporting and businesses' operational performance. This again agreed with who papered a study titled 'accounting for the environment: A lesson from a developing nation'. The study's findings showed that there was a positive association between financial performance and green accounting.

Conclusion

On exploring the relationship between green accounting practices and firm's performance in the manufacturing sector, a positive relationship between, green accounting practices and return on capital employed as well as between, green accounting practices and return on assets was found. It was then concluded that green accounting practices positively affect return on capital employed and return on assets. In view of this, the expenses incurred by manufacturing firms on environmental protection affect their profitability.

Even though a negative connection between green accounting and dividend per share was found, this study makes an important theoretical contribution in that it helps in articulating the underlying processes by which green accounting influences manufacturing firms' performance in the area of their profitability margins. Unlike previous studies such as which found green accounting to have significant negative effect on firms' profitability, this study opposes that green accounting reduces firm profitability. Because, firms' green practices increase the goodwill of the firm, thereby increase the customer base as well as volume of sales thereby reducing any negative effect and improve the firm's performance as far as profitability margin is concern.

Limitations and Future Research Suggestions

The study was confined to manufacturing firms listed on Ghana stock exchange. Future studies may look at the effect of green accounting on firm's performance in different countries. In addition, manufacturing firms may react differently towards green accounting practices due to different market conditions. Hence, future studies may assess how manufacturing respond to the issue of green accounting practices during market fluctuations. Additionally, this study on only secondary data for data collection. Future studies may consider adding interview to encourage respondents to express themselves.

Because majority of manufacturing firms in Ghana are not listed, future studies may therefore employ both primary and secondary data to assess the extent of green accounting practices among manufacturing firms whether listed or not. This will give a wider perspective of the issue green accounting practices and the firm's performance. Future studies can also be carried out among only non-listed firms so that the results obtained can be compared with listed companies to find out if there is any significant difference between listed and unlisted firms with regards to green accounting practices and the firm's performance. These limitations give opportunity to future research to expand and validate the study's findings in different contexts and with larger samples.

Credit Authorship Contribution Statement

Augustine Badii: Conceptualization, data computations, methodology, formal analysis, writing-original draft.

Declaration of Competing Interest

There is no competing financial interests or personal relationships whatsoever in the cause of this study that could have appeared to influence the work reported in this paper.

Data Availability

Data will be made available on request.

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