

GREEN ACCOUNTING AND SUSTAINABLE DEVELOPMENT

Dr. Dharmpal Yadav*

ABSTRACT

This study's objective is to determine the connections that exist between green accounting, sustainable development, and financial performance, as well as the impacts that are mediated between the two variables. Additionally, the research will investigate the implications of these connections. For the purposes of this study, the population consists of a manufacturing business that is listed on the Indonesia Stock Exchange, employs techniques that are environmentally friendly, and operates between the years 2017 and 2020. A method of systematic sampling is used in order to collect data from fifty-two different companies. A route analysis performed using EViews was the approach that was used to evaluate the data. Within the context of this scenario, green accounting has an impact on both sustainable development and financial performance. However, financial performance does not have an impact on sustainable development, and vice versa. The ability of a firm to remain in business over the course of a long period of time is now evaluated based on how well it implements environmentally responsible accounting procedures and how well it performs financially.

Keywords: Green Accounting, Sustainable Development, Green Industry.

Introduction

The idea of sustainability has expanded over the years to encompass everything that its proponent believes a society ought to strive for. These include: environments that are safe and healthy, climates that are stable, the elimination of poverty, care for future generations, communities that are inclusive, strong corporate and social governance, and the preservation of small-scale lifestyles and communities. The research highlights the need of addressing both short-term and long-term demands, which is one of the most often cited topics. Rather than being impressed by the progress that is being made toward the goal of sustaining civilization, one is struck by the vagueness of the word while reading about themes related to such matters. When we speak about a society being sustainable, what precisely do we mean by that term? Can the "degree" of sustainability be quantitatively measured?

The reality of this concept is called into doubt by an economist, who is explicitly looking for evidence that would demonstrate the degree to which society is successful in maintaining it. Due to the fact that market data does not take into consideration these assets, statistics do not confine themselves to only reporting the "essential" policy. argues that there are environmental problems as well as other relevant concerns with the use of pricing to evaluate intangible goods and services like services and commodities.

According to Prajapati and Bhatt's (2019) article titled "A Study of an Influencing Factor in the Expansion of Brand in the Road Machine Market: An Impassive Study on the Heavy Machinery Production Company (HEPCO)" (), there is no straightforward method to compare the market share and value of lemonade with the environment because there is no clear price. Statistics gathered by government statistics institutions provide information on a variety of economic topics, including consumer spending, company turnover, and the activities of nonprofit organizations. A significant amount of effort

* Assistant Professor, Department of ABST, University of Rajasthan, Jaipur, Rajasthan, India.

has been put into attempting to comprehend the figures and assessments of the worth of assets that are not useful. In nature, there are many "things" that have a measurable value, yet they do not have any inherent value. For the purpose of determining the level of social stability, a number of economists have presented statistical approaches that are comparable to these.

These types of facts may be used to show a significant portion of the issues that are pertinent to modern society; nonetheless, they will not be able to do so for everything. In the event that individuals are going to utilize the figures to make judgments on the policy, the explanation has to be completely transparent. In the community, there are still a number of environmental decisions that need to be made, including the amount of land that should be designated as wildlife reserves, the amount of money that should be spent on pollution control, and other environmental choices. To do this, it is necessary to acquire values for things that are not categorized as naturally occurring. Furthermore, a refusal cannot produce an endless number; it is likely that these persons are revealing their lack of information, preference for a certain transaction, or preference for a particular price structure. Each and every market activity is constructed from the fundamental elements of value, price, and the total of these three components, which is revenue.

Green Accounting

The term "green accounting" or "environmental accounting" refers to a method that integrates environmental costs and benefits into the conventional procedures of financial accounting. The degree of environmental responsibility that a business demonstrates is directly proportional to the level of financial success that it achieves, and the purpose of this project is to measure and report on this association. With green accounting, which takes into account natural resources, pollution, and ecosystem services, it is possible to have a better understanding of the actual expenditures experienced by a company as well as the value that it generates. With the assistance of this approach, businesses have the potential to enhance their efforts in terms of resource management and sustainability. More importantly, this strategy also promotes accountability and transparency for stakeholders. It is crucial to have green accounting in order to promote environmental responsibility and ensure long-term economic sustainability, both of which are becoming more relevant as businesses recognize the value of sustainable practices.

Sustainable Development

Sustainable development is an integrated growth strategy that seeks to achieve a balance between economic growth, social equity, and the preservation of the environment. The priority is to make certain that the needs of the present are satisfied while at the same time protecting resources so that they may be used by future generations. Intergenerational equity ensures that future generations inherit a healthy planet; economic viability encourages responsible management of natural resources; participatory governance encourages community involvement in decision-making processes; and social inclusion ensures that all individuals, regardless of their socioeconomic status, have a voice in shaping that trajectory. Sustainable development promotes growth that is both resilient and inclusive; economic viability promotes responsible management of natural resources; and social inclusion ensures that all individuals have a voice in shaping that trajectory. For the purpose of addressing pressing global concerns such as climate change, inequality, and poverty, the United Nations has established a framework for sustainable development known as the Sustainable Development Goals (SDGs). Through the adoption of sustainable behaviors, societies have the potential to enhance living circumstances, reinforce resilience, and create a future that is more equitable and sustainable.

Objective

- To Review the history and significance of green accounting in India.
- To Investigate green accounting's impact on sustainable development.

Method

Manufacturing companies operating in the green sector and listed on the Indonesia Stock Exchange between 2017 and 2020 make up the study's population. Purposive sampling was a method of sampling that was used without depending on probability. In order to qualify for this sampling strategy, a corporation must be the second to use PROPER between 2017 and 2020. The business must also be the first to openly declare in its annual reports and financial statements that it has implemented green accounting procedures. Thirteen businesses met the requirements for selection. Given that the observation period was four years long, fifty-two data points in all were gathered and analyzed.

Research approaches that provide explanations and quantifiable data form the study's basis. Determining the significance of the relationships and outcomes related to the dependent variables is the

goal of explanatory study. In contrast, shedding light on the links between the variables utilized in the process of assessing the study hypotheses is the goal of research aimed at explaining the phenomena that have been observed. By using this line of reasoning, one might argue that the goal of this kind of study is to identify how green accounting influences sustainable development, which is the dependent variable, and financial success, which is the intervening variable. This is the study's objective. The secondary nature of the data used in the research indicates that they came from other sources. Information taken from the Indonesia Stock Exchange's financial statements is referred to as secondary data. Our approach for analyzing the data that we get is called EViews-processed route analysis. Here, the following equations are being utilized:

$$FP = \alpha + \beta_1 GA + \varepsilon_1 \dots\dots\dots (1)$$

$$SD = \alpha + \beta_2 GA + \beta_3 FP + \varepsilon_2 \dots\dots\dots (2)$$

Information

- α = Constant
- β = Regression Coefficient
- GA = Green Accounting
- FP = Financial Performance
- SD = Sustainable Development
- ε = Error

Define and Measure Variables

- **Green Accounting:** The method by which a business keeps track of the positive and negative effects that its operations have on the environment is referred to as "green accounting," and the term "green accounting" itself is a representation of the strategy. For the goal of determining environmental performance characteristics, the Ministry of Environment and Forestry (KLHK) makes use of a tool known as the Company Performance Rating Assessment Program (PROPER) in Environmental Management. This program is a means of assessing environmental performance. When the color categorization is taken into consideration, it is possible to make use of the Company Performance Rating Assessment Program, often known as PROPER. By way of illustration, the following is an example of how a Likert scale might be used to assess the performance of an institutional environment:

Table 1: Scale for Assessing Green Accounting

| Level | Information | Score |
|-------|-------------|-------|
| Red | Better | 5 |
| Gold | Excellent | 4 |
| Green | Pretty Good | 3 |
| Black | Good | 2 |
| Blue | Bad | 1 |

- **Financial Performance:** A statistic called Return on Assets (ROA) was used to assess the study's financial success. The return on assets (ROA) is an important measure because it demonstrates how well an organization makes use of its assets to generate revenue and how much it is able to invest with all of its assets. Additionally, it demonstrates how well a company is able to generate net income off of all of its assets. There are a few formulas that may be used to calculate the ROA ratio:

$$ROA = \frac{Net\ Income\ After\ Tax}{Total\ Assets} \times 100 \dots\dots\dots (3)$$

- **Sustainable Development:** A company's ability to maintain a profit margin over time is closely correlated with its profit margin. The ability of a business to sustain its current level of profitability is positively correlated with the likelihood of that business growing in the future. This evaluation is pertinent to studies carried out by the following institutions:
 - Economy, society, environment, and technology all contribute to sustainable development. Well, well, well. (4) Details: (1) Sales, net income, and investment choices are only a few of

the economic elements included in the annual report. (2) Salary payment fees, severance payment costs, and Corporate Social Responsibility (CSR) expenses are used to illustrate the social components of the annual report. Two examples of environmental concerns are K3 and utility expenses, sometimes known as consumption costs. Another example of an environmental factor is the infrastructure used by the firm in its manufacturing, such as energy and PDAM expenses. A technical perspective is offered by R&D expenses, which are defined as the sum of money that an organization must spend on high-quality research and development.

Result

Table 2 displays the results of the determination of the sample size for the investigation.

Table 2: Selection Results from Purposive Sampling

| No. | Information | Amount |
|-----|---|--------|
| 1. | Companies implementing PROPER for the period 2017-2020 | 169 |
| 2 | Manufacturing companies listed on the Indonesian Stock Exchange 2017-2020 | (131) |
| . | Non-green accounting companies issue yearly reports and financial statements. | (25) |
| 3. | Number of businesses for this research | 13 |
| | Research years (2017–2020) | 4 |
| | Seen sample total | 52 |

Table 3 displays the descriptive statistics for each variable that was previously mentioned.

Table 3: The Outcomes of Statistical Descriptions

| Variable | n | Minimum | Maximum | Mean | Std. Deviation |
|-----------------------------------|----|---------|---------|-------|----------------|
| Sustainable Development (SD) | 52 | -6.030 | 24.260 | 3.988 | 6.439 |
| Sustainability in Accounting (GA) | 52 | 3.000 | 4.000 | 3.230 | 0.429 |
| FP is Financial Performance | 52 | 6.450 | 12.580 | 8.511 | 2.067 |

As can be seen in Table 3, the whole observation data set that was taken into consideration for this inquiry consisted of 52 observations that were gathered over the course of four years. The years 2017–2020 were covered in the research, and the scale for green accounting evaluations ranged from a minimum score of three to a maximum score of four. The standard deviation of the data was 0.42967, and the average value of green accounting assessments for the whole green industry was 3.2308. In light of the fact that descriptive data derived from green accounting variables indicate that environmental awareness is still inadequate, it is imperative that efforts be made to enhance environmental consciousness in every aspect of every firm.

Taking a look at the outcomes of the study about finances, we can see that the value that was kept at its lowest point was 6.45 from 2017 to 2020. The resulting number of financial performances reveals that a significant percentage of businesses continue to perform poorly financially, with the green sector obtaining the highest grade of 12.58. The green industry's financial performance value is 8.511, with a standard deviation of 2.06736, when all of the elements' contributions are taken into consideration. According to the descriptive data, a significant share of total assets may be attributed to the achievements of environmentally conscious businesses. In the context of sustainable development, the values of this variable varied from -6.03 to 24.26 throughout the course of the whole period from 2017 to 2020. It was found that the variable representing sustainable development had a standard deviation of 6.43977, while the average value was 3.9881. Given the descriptive data that is collected from the many components of sustainable development, it can be concluded that the company is not taking enough efforts to safeguard its own survival. This is something that will continue to remain the case regardless of how much money the organization obtains.

- **Inductive Analysis:** The primary objective of this study is to investigate the ways in which green accounting and financial performance may help to promote the growth of the green economy over the long term. It is required to create a problem and hypotheses in order to obtain empirical contributions during the course of the outcomes. In the next step, it employs Eviews to carry out an inductive analysis by using a statistical research methodology.

- **Panel Regression Model Pre-Requisite Test:** In order to proceed with the process of hypothesis testing, it is necessary to make sure that the following precondition testing is completed:

The equation for regression analysis. The following is a summary of the results obtained from the regression test, which can be seen shown in tables 4 and 5 below:

Table 4: 1 Regression Result Structure

| Dependent Variable: Y1 | | | | |
|------------------------|-------------|-----------|-------------|-------|
| Variable | Coefficient | SW. Error | t-Statistic | Prob. |
| GA | -1.333 | 0.4556 | -2.926 | 0.003 |
| C | 12.769 | 1.480 | 8.626 | 0.000 |

Table 5: Structure 2 Regression Results

| Dependent Variable: Y2 | | | | |
|------------------------|-------------|------------|-------------|-------|
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| FP | -1.704 | 0.439 | -3.880 | 0.785 |
| C | 4.776 | 6.893 | -0.692 | 0.492 |
| GA | 7.394 | 1.365 | 5.414 | 0.000 |

The values that are created for the dependent variable Y1 by the regression equation are shown in Table 4 of the structure that presents the outcomes of the regression. The following is a list of these values: There is a probability of 0.000, the coefficient is 12.769, the t-statistic is 8.626; the standard deviation is 1.480; the standard error is 1.480; and the probability is 0.000. As can be seen in Table 5, the dependent variable Y2 has the following statistical values: a t-statistic of -0.692, a probability of 0.492, a coefficient of -4.776, and a standard error of 6.983. Every single one of these numbers corresponds to the information that is now on the table.

An LR-test is most often referred to as a ratio of likelihood test. The following executive summary was produced as a result of the LR study, and it may be found in tables 6 and 7 below:

Table 6: Fixed-effect Likelihood Test Results Substructure 1

Redundant Fixed Effects Tests

Equation: Untitled

Test cross-section fixed effects

| Effects Test | Statistic | d. f. | Prob. |
|---------------------------|-----------|--------|-------|
| Cross-section Chi-squares | 250.172 | 42.000 | 0.000 |
| Cross-section F | 22.216 | 12.380 | 0.000 |

Table 7: Fixed-effect Likelihood Test Results Substructure 2

Redundant Fixed Effects Tests

Equation: Untitled

Test cross-section fixed effect

| Effects Test | Statistic | d. f. | Prob. |
|--------------------------|-----------|-------|-------|
| Cross-section Chi-square | 27.233 | 2.400 | 2.400 |
| Cross-section F | 12.167 | 9.000 | 0.002 |

As can be observed in tables 6 and 7, the value of the chi-square prob cross-section that was finally determined is 0.000. 0.050 is the error rate that is used in the test. Due to the fact that the obtained results demonstrated that the prob value of 0.000 is lower than the alpha value of 0.050, it is possible to continue with the further phases of data processing. This indicates that the independent variables that were used and included into the panel regression model are considered to be accurate or applicable.

Discussion

- **Green Accounting Impacts Financial Performance:** The conclusions of this research indicate that the green industry PROPER assessment of green accounting has an influence on ROA estimates for financial performance from the years 2017 to 2020. Therefore, firms that use environmentally responsible accounting procedures will be able to improve the financial performance of the organization. Accounting information that contains information on the results

of an organization's efforts to improve the environment need to be the major emphasis of reporting on the company's financial success. As a consequence of this modification, the company will voluntarily comply with all environmental standards that are specifically relevant to its activities. In addition to this, it is simultaneously accompanied by an increase in favorable community attitudes, which may result in increased public loyalty to the company, which in turn leads to increased sales and profits.

Accounting that is environmentally responsible has a substantial impact on financial success. The fact that the company has been open and honest about its environmentally responsible accounting procedures is what this indicates. The analysis also verifies what many people have suspected: that green accounting methods, when properly adopted and analyzed, have the potential to dramatically influence the bottom lines of industrial organizations. There has been a gradual decline in public and investor support for this research due to the fact that it is in conflict with suitable grading. Although it is the responsibility of the Ministry of Environment and Forestry to provide information about appropriate rankings, investors who are searching for information about the firm will go straight to other websites or the media in order to get the information they want. This action is taken in an attempt to protect the environment that the firm does business in. It is feasible that this will occur if the general population is unaware of the financial incentives that the government provides for initiatives that have the objective of conserving the environment. This is a possibility.

- **What Green Accounting Does for Sustainable Development:** The second hypothesis was explored, and the findings demonstrated that environmentally responsible accounting techniques had a significant impact on the process of sustainable development. According to the findings of this specific kind of research, ecologically responsible accounting practices seem to have a positive impact on the process of sustainable development. The ability of businesses to enhance their sustainable development, which is represented in their annual report, may be improved by increasing the amount of money they spend in activities related to environmental preservation and other green accounting initiatives. The reason for this is that companies are given the opportunity to improve their sustainable development. It is envisaged that the expenditures that have been supplied would finally lead to the construction of an environment that is not only healthy but also sustainable. When it comes to determining whether or not a firm is devoted to sustainable development, one of the most important indications that can be employed is the use of green accounting practices. In addition, waste from products has the potential to be a source of revenue for expenses that are associated with environmental responsibilities. Companies that use environmentally responsible accounting procedures will be able to steer their business in the right path, which may be considered a kind of shareholder responsibility inside the firm.

Previous study has shown that green accounting has a significant impact on sustainability and has the capacity to complement an organization's efforts to develop an all-encompassing environmental management system. The results of this initial test give support for the findings of prior research, which showed that green accounting has the potential to supplement these objectives. Green accounting disclosures, which show care for the preservation of the environment, would result in a rise in the value of the company's shareholders, according to the results of the study. Green accounting disclosures are important because they reflect concern for the environment. When shareholders are able to obtain information more rapidly, it will be possible for choices to be made more swiftly and with less effort.

- **Financial Performance and Sustainable Development:** It is possible to draw the conclusion that there will be no possible influence on sustainable development from the analysis of manufacturing companies' financial performance from 2017 to 2020, based on the results of this study. When it comes to determining how a company's financial performance impacts its long-term survival, the green sector is utterly unaffected. This is because the green sector is committed to sustainability. A lack of trust exists among managers about the capability of the financial performance methodologies to assist activities pertaining to sustainable development. The realization that sustainable growth is the key to improved performance is an essential realization for managers to have. It is abundantly evident that a sustainable development index is one of the most important factors in determining the quality and reputation of a firm when it publishes its performance. This study, like others that have come before it, comes to the conclusion that the financial success of an organization has very little influence on sustainable development. This is because there is a disparity between the sustainable business model and the amount of orientation demonstrated by stakeholders, especially agents inside an

organization, in relation to market growth. This is the reason why this is the case. The company, as a result, disregards its sustainable growth in favor of increasing the amount of money it receives from shareholders.

- **Green Accounting's Financial Performance Impact on Sustainable Development:** Green accounting is significantly associated with sustainable development, as measured by financial performance, according to the study's findings. That green accounting affects sustainable development indirectly via financial performance is supported by this evidence. A company's bottom line determines how much of an impact green accounting has on long-term sustainability. By demonstrating their dedication to environmental responsibility via the application of green accounting techniques, companies may enhance their chances of securing financial backing for their endeavors towards sustainable growth. A company is said to be engaging in "green accounting" if it discloses its environmental impact in its annual report. This company's dedication to social and environmental responsibility is shown by its disclosure practices. Companies having an Indonesian registration were formerly exempt from complying with this law, but now they are required to do so. You can find out how the firm is helping to achieve sustainable development in this report. This data is available for stakeholders to peruse in order to learn more about the environmental impacts of the company's main operations and the steps to lessen those impacts.

It is now feasible to achieve sustainable development goals without compromising the needs of future generations. Sustainable development is an essential need since the present economic system is the main culprit harming ecosystems worldwide and preventing future generations' aspirations from being satisfied. This is why it's so important to have everyone on the planet, individually and collectively, invested in making sustainable development a reality.

Conclusion

A new environmental profile will be created via environmental protection measures, which will save money and increase market potential. Some businesses may find success by prioritizing sustainability. In doing so, they may attract more clients, adapt to shifting market conditions, and stand out from the crowd. Everyone from people to communities to corporations to governments has a role to play in ensuring sustainability. Concerns about sustainability are at an all-time high. On our planet, we face enormous environmental challenges and massive inequity. The implementation of socially and economically responsible activities that are also sustainable requires our undivided attention. Incorporating sustainability into financial performance is now seen as a prudent business strategy that might boost profits, lessen risk, and foster resilience in a dynamic marketplace. Environmental and social concerns are integral to every successful business model, and this fact is acknowledged. We can no longer afford to do nothing. In order to ensure a better and more equitable future, sustainability must be prioritized.

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