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Environmental Accounting and Competitive Advantage at Sudan Paint Companies

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Abstract

The study aims to clarify the relationship between financial and non-financial information disclosure for environmental accounting and the competitive advantage of paint companies in Sudan. The study assumed the existence there is a relationship between the disclosure of financial environmental accounting information and the competitive advantage of paint companies, and the existence of a relationship between the disclosure of non-financial environmental accounting information and the competitive advantage of paint companies. The researcher used a descriptive-analytical approach. The study found a positive relationship between the disclosure of environmental accounting information and the competitive advantage of Sudan paint companies.

Keywords: Environmental Accounting, Competitive Advantage.

INTRODUCTION

Companies always try to adjust to fulfill the market's demand in order to maximize their earnings. During its operations and activities companies unintentionally damage the surrounding environment by generating wastage. Therefore the company should not only aim for profit but also must take into consideration the environmental and social responsibility toward the community. Indah Fajarini S.W. and Arum Triasih, (2020),

In fact, studies in different markets found that companies from industries considered to be more aggressive toward the environment than others due to their activities and environmental strategies, which increases the degree of disclosure. (Albertini, 2013; Legendre & Coderre, 2013). furthermore, results presented by (Delmas et al., 2011) signaled that firms classified as potentially aggressive toward the natural environment would have a greater motivation to undertake social and environmental actions, which could increase their levels of social and environmental disclosure (Rover & Santos, 2014) (Viana Junior &Crisóstomo, 2016).

This study is based on studying the relationship between disclosure of financial and non-financial information for environmental accounting and the competitive advantage of paint companies in Sudan.

Literature review:

Edirin Jeroh (2020) analyzes the internal determinants of environmental disclosure practices among firms in Sub-Saharan Africa (SSA). They found that the characteristics of the measures of the board and the audit committee were significant determinants of the environmental disclosure of firms in Kenya and Nigeria, the same cannot be said of firms in South Africa.(Dante Baiardo Cavalcante Viana Junior, Vicente Lima Crisóstomo) study aimed to analyze the effects of voting ownership concentration on the social and environmental disclosure of Brazilian companies in their Annual Financial Statements. They found that the social and environmental disclosure of Brazilian companies is positively correlated with their voting ownership concentration. Indah Fajarini S.W. and Arum Triasih, (2020) examine the effects of company characteristics, company financial performance, and type of audit firm on environmental disclosure. They found that o company size and industry type have a significant positive effect on environmental disclosure. While company age, leverage, profitability, and audit firm type do not affect environmental disclosure. (Marino. p& et al) evaluates the influence of the institutional environment on the extent of social and environmental disclosure of companies from institutionally distant countries. he found that the extent of environmental and social disclosure is positively correlated to the political and labor systems in Brazil, and negatively related to the financial system. In Canada, disclosure is

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negatively influenced by the financial system and the education system. (Biswas, P et al) identify the environmental disclosures made by Bangladeshi companies and analyze the overall disclosure practice of the countries' industries. His study shows evidence that reinforces the fact that Bangladeshi companies are disclosing less environmental information than an ideal company should. Also, there is lack of regulation and interest in disclosing proper information. (Adhe Eva Andriana & Indah Anisykurlillah,2019) identify the effects of environmental performance, profit margin, and firm size on economic performance and its effect mediated by environmental disclosure. They found that environmental performance and environmental disclosure have a significant positive effect on economic performance, but this cannot be applied to Profit margin and firm size. Profit margin has a significant effect on economic performance through environmental disclosure. (Jianhua Yin and Sen Wang, 2018) analyze the moderating effects of different proportions of institutional investor holdings and types of enterprises on the relationship between environmental disclosure and environmental innovation. They found that corporate environmental disclosure has a positive role in promoting environmental innovation. However, there is no significant difference between state-owned enterprises and private enterprises in terms of the effect of environmental disclosure on environmental innovation, which possibly arises because both types of enterprises make full use of their own advantages to instigate environmental innovation through environmental disclosure.

Theoretical Frame:

Environmental Accounting

Brown & Deegan (1998) stated that environmental disclosure is essential because through disclosing environmental information in a company's annual reports, the financial report users can monitor the company's activities in order to fulfill their environmental and social responsibility.

Edirin Jeroh (2020) has defined Environmental disclosure as the process of measuring, allocating, and integrating costs related to activities that affect the environment in the financial statements of firms.

According to D. Campbell (2003), environmental disclosures are any disclosure related to the effect of a company's activities on nature and the environment. Hence, companies should report all information about the environment elaborately and their financial ramifications on the company's environmental management and other strategic decisions and operations.

(Ismail, Rahman &Hezabr 2018) also defined Environmental disclosure as the act of communicating environmental information through company reports either separately or as one report. (Iatridis 2013) defined Environmental disclosure "as information disclosed by companies pertaining key environmental matters, policies on environmental issues, the number of emissions and waste, compliance to environmental regulations, expenditures on environmental activities, contribution to sustainability projects and etc".

In the financial system –financial market- companies struggle to draw the attention of lower-cost investments. Ioannou and Serafeim (2012. Environmental Disclosure offer adequate and relevant information about company performance that can help in attracting investor and decreases informational asymmetry (Dhaliwal, Li, Tsang, & Yang, 2014). Haig and Hazelton (2004) signaled that conducting environmental and social practices assist in increasing financial returns compere to traditional investments because it pay better since it have a competitive advantage based on innovation and product differentiation. Furthermore (Dante Baiardo Cavalcante Viana Junior, Vicente Lima Crisóstomo,2019) study documented evidence signaling that firm profitability and firm size have a positive influence on the level of social and environmental disclosure.

Companies seek to build a good reputation with the community to gain the trust of customers and maximize their profit. Hence companies comply with the legitimacy theory that assumes there is a social contract between the company and the community in which the company operates. Moreover, companies acquire a competitive advantage when it satisfy the community through social and environmental disclosure. (Deegan, 2002)

(Petrini &Pozzebon 2010; Montiel 2008) point out that voluntary environmental disclosure enhances the possibility of attracting potential investors and improving the company's image to the public. Moreover, they believe that corporate social responsibility and corporate sustainability are the same and they both cover three dimensions of economic, social, and environment. Environmental disclosure is one of the corporate social responsibility elements and that prove that it's important to reveal environmental information in the company's annual report.

As far as ethically qualified economic performance, companies carry out social and environmental responsibility activities to harmonize with stakeholders. Stakeholder theory stated that the shareholder's position is very powerful so management must cope with them by conducting environmental (Ulum et al., 2008). according to Freeman &McVea (2001), shareholders is an individual or group that influences or is influenced by the organization as a result of its activities and becomes a major consideration for the company in disclosing information in financial statements.

From Auditor's perspective, they give their opinion on company's annual report independently and objectively. Also, auditors give their advice about company's operations to improve and add value of company organization. This lead to a perception that auditor may have influence on environmental reporting practices of company. (Ibrahim T. N, et al,2018).

Ahmad, Salleh, and Junaini (2003) claim that there is a positive correlation between auditors and environmental disclosure. They pointed out that company which audited by big firms is complying to environmental disclosure more than those who are audited by small firms. (Lu and Abeysekara, 2014) believed that Society trusts the auditors because of their

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reputation of having professional expertise and knowledge, therefore they could influence the company to disclose more on corporate social and environmental responsibility. Society also thinks that larger audit firm -due to their reliable judgment and opinion- encourage companies to make greater efforts and show more transparency in their financial statement than smaller audit firms.

In terms of shareholders, it has been classified into two terms ownership distribution and ownership concentration. Ownership distribution refers to the widely held shares by small shareholders and the public. Studies signaled that the greater the ownership distribution, the greater level of environmental disclosure in financial reporting because more disclosure means better quality and reduce information asymmetry between management and shareholders. (Cormier and Gordon, 2005). On the other hand, ownership concentration means to the closely held shares of company by large shareholders. In line with legitimacy theory, the larger company needs to be more visible to appear in a legitimate state in the eye of the public (Sulaiman et al, 2014). This creates urge for the company to disclose more environmental and social information. However, in some situations, there are practices of 'retrenchment benefit' whereby shareholders have less demand for voluntary environmental disclosure since they can readily assess it through internal information. In closely held shares company where outside shareholders are absent, the need for environmental information is low. (Ibrahim T. N, et al, 2018)

Competitive Advantage:

The term sustainable competitive advantage was seriously developed in 1985 by Porter and in terms of a variety of competitive strategies (cost leadership, differentiation, and focus) to achieve long-term competitive advantage. Nevertheless, Porter did not provide a formal definition of sustainable competitive advantage. Barney (1991) has provided the closest definition of sustainable competitive advantage as the continuity of benefits and application of unique value-creation strategies asynchronously with potential competitors that are not able to copy such benefits.

A competitive advantage exists when the firm is able to deliver the same benefits as competitors but at a lower cost (cost advantage), or deliver benefits that exceed those of competing products (differentiation advantage). Competitive advantage is a theory that seeks to address some of the criticisms of comparative advantage. Competitive advantage theory suggests that states and businesses should pursue policies that create high-quality goods to sell at high prices in the market. (Porter,1985) emphasizes productivity growth as the focus of national strategies. Competitive advantage rests on the notion that cheap labor is ubiquitous and natural resources are not necessary for a good economy. Competitive advantage is necessary for satisfied customers who will receive higher value in delivered products for higher income what the owners request from management and such requirements can be fulfilled with organization of production, higher application, and as low as possible production costs (Ranko, Berislav, and Antun, 2008).

One of the key objectives of any business strategy is to achieve competitive advantage that is sustainable (Stonehouse et al, 2004). This implies that a strategy will result in better performance in the industry that is sustainable over a period of time. Competitive advantage gets explained by a number of interlinked concepts such as (a) Superior performance – is often assessed in terms of increased profit returns against sales or investment, higher unit revenue, lower unit costs, higher market share, etc. (b) Strategy – is the plan of action by which the business hopes to achieve competitive advantage. (c) Core competencies – the distinctive awareness, skills, and organization of activities that make the firm different and better than its competitors, acting as the basis of its generic strategy. (d) Innovation – The pace of change in the global business environment means that firms must continuously develop new skills and core competencies, so as to innovate faster than competitors. (e) Configuration – the way in which the value-adding actions of the organization are configured on a worldwide basis. (f) Coordination or integration – refers to the way the value-adding actions are coordinated on a transnational or global basis. (g) Responsiveness – refers to the capability of the firm to respond to local requirements.

The contribution of proactive environmental management to competitive advantage is in terms of costs and differentiation (Galdeano-Go´mez et al,2008). Cost advantages typically arise from the adoption of practices that improve the production process (Hart, 1995) increasing its efficiency and reducing input and waste disposal costs (Hart, 1995). Decisions such as the purchase of new green technology, the consideration of greener distribution and transportation systems, or the eco-design of products and processes will allow firms to gain competitive advantages derived from cost reductions (Fraj-Andre´ s et al., 2008).

(Christmann 2000) provides evidence showing that the higher the firm's level of innovation in pollution proactive technologies, the larger the cost advantage it will gain from environmental strategies. Differentiation advantages typically arise from the perception on the part of customers that the product is more valuable (Lankoski, 2008). Thus, differentiation advantages usually depend on the fit of product characteristics and market needs, and on the firm's ability to market the environmental characteristics of their products and services (Galdeano-Go´mez et al., 2008).

Field study:

The study population includes accountants and administrators in Sudan paint companies, 55 questionnaires were distributed, and 40 questionnaires were retrieved, with a 73% recovery rate. The alpha-Cronbach coefficient test was used to measure the stability of questionnaire questions, and simple linear regression was used to test the study hypotheses.

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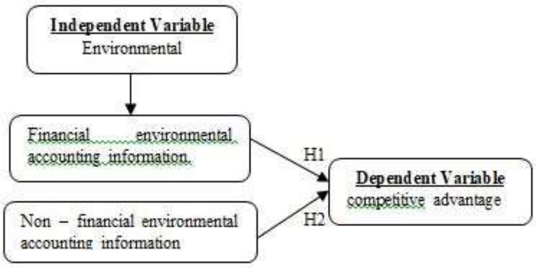
Table (1)
Reliability test (Alpha-Cronbach)

study axes	Number of phrases	Alpha Cronbach Coefficient
First (x_1)	5	0.971
Second (x_2)	5	0.974
Third (y)	12	0.976
All	22	0.990

The value of the Cronbach's rat for all the study axes is greater than (99%), which means a very high degree of "internal stability" for all the questionnaires hypotheses, whether this is for each axis separately or for all the axes of the questionnaire. This confirms that the measures that the study relied on enjoy internal stability for their phrases, which enables us to rely on these answers in achieving the study's goals and analyzing its results.

Hypothesis Testing
Variables and Model of the Study



1. **First Hypothesis Test:** "There is a relationship between disclosure of financial environmental accounting information and competitive advantage."

To validate the hypothesis, a simple linear regression is used in constructing the model where the disclosure of financial environmental accounting information as an independent variable (X_1), the competitive advantage (Y) as a dependent variable, and Table NO (2) illustrates this:

Table (2)
Simple linear regression analysis results for first hypothesis

	Regression Coefficients	T-test	(Sig)	Statistical significance
$\hat{\beta}_0$	1.134	7.228	0.000	significance
$\hat{\beta}_1$	0.767	21.13	0.001	significance
(R)	0.960			
(R^2)	0.922			
(F) test	446.75			
$Y = 1.134 + 0.767X1$				

Through Table (2):

- There is a direct correlation between the disclosure of financial environmental accounting as an independent variable, and competitive advantage as a dependent variable, where the values of the simple correlation coefficient (0.960).
- coefficient of determination value reached (0.922), and this value indicates that the disclosure of environmental accounting (independent variable) impact (92.2%) on competitive advantage (dependent variable).
- The simple regression model was significant, as test value (F) reached (446.75), which is a function of significance level (0.001).
- 1.134: Average competitive advantage when social responsibility toward society is zero.
- 0.767: Increased disclosure of financial environmental accounting, one unit, which increases the competitive advantage by 76.7%.
- From the above, it is clear that the first hypothesis of study has been validated.

2. **Second Hypothesis Test:** there is a relationship between disclosure of non-financial environmental accounting information and competitive advantage."

To validate the hypothesis, a simple linear regression is used in constructing the model where the disclosure of financial environmental accounting is independent variable (X_2), and competitive advantage (Y) as a dependent variable, and Table NO (3) illustrates this:

Table (3)
Simple linear regression analysis results for the second hypothesis

	Regression Coefficients	T-test	(Sig)	Statistical significance
$\hat{\beta}_0$	1.137	7.24	0.000	significance
$\hat{\beta}_1$	0.770	21.10	0.001	significance
(R)	0.492			
(R^2)	0.242			
(F) test	445.55			
$Y = 1.137 + 0.770X2$				

Through Table (3):

- There is a direct correlation between the disclosure of non-financial environmental accounting as an independent variable, and competitive advantage as a dependent variable, where the values of the simple correlation coefficient (0.492).

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- coefficient of determination value reached (0.242), and this value indicates that the disclosure of disclosure of non-financial environmental accounting (independent variable) impact (24.2%) on competitive advantage (dependent variable).
- The simple regression model was significant, as test value (F) reached (445.55), which is a function of significance level (0.001).
- 1.37: Average competitive advantage when disclosure of non-financial environmental accounting zero.
- 0.770: Increased disclosure of non-financial environmental accounting, one unit, which increases the competitive advantage by 77%.

From the above, it is clear that the second hypothesis of study has been validated.

Conclusion:

The aim of this paper is to know the interest of paint companies - in Khartoum State in disclosing environmental accounting information, whether this information is financial or non-financial, as well as to know the relationship between the disclosure of environmental information and the competitive advantage of the products of the paint companies, as there is a great interest of paint companies in the process of disclosure All its information, both financial and non-financial, whether the disclosure is related to society or the environment, and this information appears in the income and financial position statement.

Through the study, it was evident that there is a positive relationship between disclosure of environmental accounting information and competitive advantage.

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