



# CORPORATE SUSTAINABILITY FACTORS (CSFS) AND ENTERPRISE VALUE OF NIGERIAN FIRMS

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## Abstract

*This study investigates the relationship between corporate environmental performance and enterprise value in Nigeria, focusing on three key environmental metrics: Resource Use Score, Emissions Score, and Innovation Score. Data were collected from corporate publications, including annual and independent sustainability reports. The study employed content analysis to extract relevant data, followed by descriptive statistics and panel regression analysis to estimate the model and test the hypotheses. The Hausman test was used to determine whether a fixed-effects or random-effects model was more appropriate. The results show that overall corporate environmental performance significantly impacts enterprise value in Nigeria. Specifically, the Resource Use Score has a statistically significant positive relationship with enterprise value. However, no statistically significant relationships were found between Emissions Score and Innovation Score and enterprise value. The study suggests that integrating environmental sustainability practices, particularly in resource use, into corporate strategies can enhance enterprise value. The researchers' recommended that companies in Nigeria should prioritize environmental sustainability to boost long-term business performance.*

**Key words:** ESG, Environmental Score, Corporate Environmental Performance, Resource Use Score, Emissions Score.

## INTRODUCTION

The concept of corporate sustainability has occupied significant position in business literatures in recent years (Taliento *et al.*, 2019; Gnanaweera & Kunori, 2018; Sukitsch *et al.*, 2015). Normally, corporate sustainability is used in corporate procedures to represent a set of relevant environmental, social and governance-related factors that allow the assessment of long-term sustainability of a firm (Taliento *et al.*, 2019; Van-Duuren, Plantinga, & Scholtens, 2016; Bourghelle, Hager, & Louche, 2009). Though, the debate on the exact meaning, concept and measurement of corporate sustainability and its impact on firm performance is still ongoing. However, one of the notable definitions of corporate sustainability is “meeting the needs of a firm’s direct and indirect stakeholders, without compromising its ability to meet the needs of future stakeholders as well” (Dyllick & Hockerts, 2002; Bansal, 2005; Dufwa & Hammarström, 2015). Taliento, *et al.*, (2019) noted that the recent and more specific line of research in corporate sustainability which is connected to the stakeholders’ theory is known as ESG. Consequently, the current and more specific approach to measuring the concept of corporate sustainability clusters around the environmental impact, socially responsible behaviour and governance of companies (Taliento *et al.*, 2019; Maletic, Maletic, Dahlgaard, Dahlgaard-Park, & Gomiscek, 2015), meaning that the concept and measure of corporate sustainability could be classified into three main



groups: Environmental (E), Social (S), and Corporate Governance (G) (ESG). Hence, the concept of corporate sustainability is exclusively measured by ESG factors (Bassen & Kovács, 2008).

The first group relates to the Environment (E) and includes climate change, greenhouse gas emissions, exploitation of resources, waste, pollution and deforestation. These environmental issues have emerged in recent time as a major aspect of the discussion in the problems of economic growth and development (Uwaloma, 2011). The environmental issues have taken the form of global warming; atmospheric, soil and water pollution caused by industrial activities; and the quick decline of forest areas, noise pollution and chemical wastes and other wastes being dumped into oceans and rivers (Dutta & Bose, 2008). These issues are generally associated with industrialization and economic growth; but one remarkable question has been at the center of this issue: “*is it a necessary condition of economic growth that the environment has to suffer?*” In the view of sustainable development, the answer is NO! According to Jasch (2003), where the prospects of sustainable development are in sight it’s not a necessary condition for economic growth that the environment has to suffer.

Environmental sustainability with respect to business activities has been around for long. Tasneem, Hamza and Basit (2016), noted that environmental sustainability was first discussed in 1844 by Emerson in his study where he elaborated the importance of green marketing; it was further flourished by authors like Lepold (1940) and Carson (1962), where they legitimized the concept through their publications of cultural movements. Additionally, the first environmental sustainability reports published by organizations were witnessed during the late 1980s and early 1990s, and these reports were published for a range of reasons, but the main driver was the requirement of disclosing toxic emissions data, especially for US companies (Tasneem *et al.*, 2016). However, in the developing economies like Nigeria, environment reporting is still at voluntary stage.

The second group is the Social (S) dimension, and it deals with working conditions, health and safety, diversity, relationships with employees and host communities. The social factor of corporate sustainability, which is mostly known as corporate social responsibility (CSR) has the objective to balance business operations with the interests of employees, suppliers, business partners, customers, government, host communities, and the society. In fact, the dimension of CSR is very complex and it brings together the business and society. It relates to philanthropic programmes but the CSR supports long term programmes that initiate lasting and meaningful impact on employees and communities, and promotes the welfare of other stakeholders of the business. The corporate world is becoming more socially responsible, by having sensitivity towards social issues. Pita (2016) noted that it is essential for business to complement government’s efforts in social development, as it will affect the social structure and business sustainability.

In developed economies, the debate as to whether or not businesses should have social responsibilities is currently taking a direction; as consumers’ care about CSR and it is in the best interest of the business to have corporate social responsibilities (Pita, 2016; Boulstridge & Carrigan, 2000). Pita (2016) added that studies nowadays show that consumers expect corporations to have high level of CSR. In Nigeria, the practice of corporate social responsibility is not also a new idea but the concept is still not developed compared to the level practices in the developed nations (Uwuigbe *et al.*, 2018). This is terribly due to weak enforcement, low level of awareness and conservative thinking of the shareholders (Usman & Amran, 2015). Though, the government through the National Economic Empowerment Development Strategies (NEEDS) defined the role of corporations to reflect social responsibility and nation building. Calling the organizations to be more proactive in job creation, enhancing productivity, improving the quality of lives by investing in corporate and social development initiatives in the country (Usman & Amran, 2015; NPC, 2004).

The third group, finally, involves Governance (G) mechanisms/practices. Corporate governance mechanisms have been at the forefront of sustainable development debate internationally (Ibe,



Ugwuanyi, & Okanya, 2017; David, George, & David, 2007). The discussion has been around managerial compensation, the composition of the Board of Directors, audit procedures and Senior and Corporate Executives' behaviours in terms of compliance with the law as well as ethical principles and code of conduct. Then, corporate governance mechanisms could also be classified into board characteristics (Board Size, Board Independence, Board diversity), board committees (audit committee, remuneration committee, risk management committee), remuneration of directors, and ownership structures (Ibe *et al.*, 2017). The exceptional interest in corporate governance mechanisms with respect to sustainable development in recent time has been linked to corporate failures witnessed around the world. The failure of high-profile companies like Enron, which was evidentially linked to corporate governance collapse has forced all stakeholders in corporate world to recognize the place of corporate governance in sustainable economy (Ibe *et al.*, 2017; Ogbechie, 2012; Vaughn, & Verstegen, 2006 and Abdullah 2004).

Categorically, corporate sustainability has taken the main objective of business beyond the traditional shareholders' wealth maximization to a holistic stakeholders' centric objective. However, the extent to which companies are committed to integrating corporate sustainability is directly or indirectly linked to the potential benefits perceived in terms of cost reductions, efficiency gains, and improvements in market position, image, and company reputation (Escrig-Olmedo, Fernández-Izquierdo, Ferrero-Ferrero, Rivera-Lirio, & Muñoz-Torres, 2019). Hence, the objective of the present study is to perform an empirical test of the business reverberation of the corporate sustainability factors (CSF), that is, environment-social-governance (ESG) dimensions and enterprise value creation in the Nigerian Stock Market.

The unavoidable impact of industrial and business activities on the natural environment and social structures has created critical sustainable development concerns (Gnanaweera & Kunori, 2018; Sukitsch, Engert & Baumgartner, 2015). The exacerbation of the impact in forms of climate change, ozone depletion, over-exploitation of natural resources, air pollution, and toxic wastes, which in most cases lead to host communities' antagonistic behaviour (like the Niger Delta case) are harming the sustainable development of the planet and the economy (Uwaloma, 2011). To alleviate the effect of these issues, governments in both developed and developing economies have strategized policies and the role of corporations is crucial for the achievement of ecologically sustainable development agenda (Sukitsch *et al.*, 2015). The rational reason for this obligation lays in the fact that companies are the identified main sources of ecological troubles. Furthermore, most of these companies have the financial resources, the technological knowledge and the institutional influence to provide ultimate solutions; yet the response seems to be relatively passive (Uwaloma, 2011).

The movement towards corporate sustainability reporting has therefore become progressive and strategic within both the developed and developing economies due to demands from internal and external stakeholders of the business for holistic information regarding corporate sustainability factors (CSF). Hence, the debated on the relationship between corporate sustainability factors and firms' performance/value has been on significant increase in recent years (Taliento *et al.*, 2019; Uwuigbe *et al.*, 2018; Sanna-Lena, 2015). Though, according to Margolis and Walsh (2003) research on corporate sustainability has been around for more than fifty (50) years with inconsistencies in the results. However, Miralles-Quirós *et al.* (2019) noted that the periods before and during the global financial crisis of 2008 witnessed scarce and limited researches about corporate sustainability and its relationship with firms' value creation. While significant number of the previous empirical studies concluded that there is a positive relationship between corporate sustainability factors and firms' performance, there have also been several studies resulting in negative, neutral/non-significant findings or mixed relationships as well as various causal directions (Miralles-Quirós *et al.*, 2019; Taliento *et al.*, 2019; Uwuigbe *et al.*, 2018; Tarmuji, Maelah & Tarmuji, 2016; Dibia & Onwuchekwa, 2015; Osazuwa,



Francis & Izedonmi, 2013). These contradictory results could be explained by the inconsistencies in the framework adopted to measure or capture the corporate sustainability factors and financial performance/value creation (Umoren, Udo & George, 2015).

According to Miralles-Quirós *et al.*, (2019), Uwuigbe *et al.*, (2018), Umoren *et al.*, (2015), there is need for more researches concerning the relationship between corporate sustainability and financial performance of firms, especially with respect to value creation. Specifically, Uwuigbe *et al.*, (2018) noted that future researches in the area of the subject matter in Nigeria should consider other sectors apart from banking sector and conduct a comparative analysis across the sectors. This will help to determine the level of generalization that is possible between various empirical studies. A comparative study of corporate sustainability across the Nigerian sectors will fill this gap and offer a strategic sustainable development policy. Furthermore, there is also, to a certain degree, need for updated empirical studies in the subject matter, as several previous studies could be considered as outdated, due to the fast development of corporate sustainability practices, its measurement and index (Osazuwa, Francis & Izedonmi, 2013).

Furthermore, previous researches focused almost on developed economies (Surroca, Tribó, & Waddock, 2010). Hence, many developed countries have shown greater concern in responding to the issue of corporate sustainability, due to interest from stakeholders on the concept of environmental, social and governance of corporations, which are the three major pillars of corporate sustainability (Taliento *et al.*, 2019; Maletic *et al.*, 2015). Some of these countries have initiated mandatory environmental, social and governance disclosures in their corporate reporting requirements; but the case is different in most developing countries, as corporate sustainability disclosure is still at its emerging stage (Uwuigbe *et al.*, 2018; Umoren *et al.*, 2015; Uwaloma, 2011). In fact, a review of empirical studies shows that the disclosure of corporate sustainability factors, that is, environmental, social and governance factors in developed countries have gained substantial increase in both size and complexity. However, in Nigeria, despite being one of the world's largest producers of crude oil, the country's level of corporate sustainability reporting has remained predominantly very low, and the same is true of other developing countries (Umoren *et al.*, 2015). The empirical studies on corporate sustainability factors and enterprise value creation in Nigeria are equally not visible. The few available empirical studies on corporate sustainability factors have focused on investigating the effect of environmental, social and governance on performance of firms, which is mostly measured by profitability, with little or no focus on value creation and comparing the sustainability reporting practices across sectors and among Nigerian companies ((Uwuigbe & Jimoh, 2012; Uwuigbe & Olayinka, 2011).

In addition, while there is an extensive research using the Global Reporting Initiative and the International Organization for Standardization (ISO) guidelines in determining corporate sustainability factors' performance and the extent of disclosures in annual report in developed economies, in contrast, there is a dearth of studies conducted in the context of developing economies, particularly in Nigeria where more than 80% of the total industries operating in the country discharge liquid, solids and gaseous wastes (such as suspended solids, ammonia, carbon monoxide, nitrogen oxides, sulphur oxides, particulate matter, sox, iron oxide, cement kiln dust, hydrocarbons, acids, salt flux, solvent fumes and alkaline oxide emissions, etc.) directly into the environment in which they operate with inadequate treatment that meets the basic international standards (Uwaloma, 2011). In fact, there is need for more research on corporate sustainability in developing economies to be able to establish whether the findings in the developed economies are the same with the developing economies (Barman, 2018).

Based on these highlighted research issues, this study seeks to investigate the effect of corporate sustainability factors on enterprise value creation of companies listed on the Nigerian Stock Market.

## Objective of the Study

The main objective of this study is to examine the impact of corporate sustainability factors (CSFs) on enterprise value of Nigerian firms.

## Research Hypothesis

To guide this study, the following hypothesis formulated based on the objective was tested:

HO<sub>1</sub>: Corporate sustainability factors (CSFs) have no significant impact on firms' enterprise value (EV) in Nigeria.

## Conceptual Review

### Concept of Corporate Sustainability

The concept of sustainability extends beyond corporate boundaries and thus lacks a defined end-state (Papoutsis, 2018; Schaltegger, 2011; Gray, 2001). There is no generally agreed definition for sustainability (Papoutsis, 2018; Farneti & Guthrie, 2009; Carter & Rogers, 2008). However, the most persistent and highly cited definition of sustainability is that of the Brundtland Commission (1987), which describes sustainability as “*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*” (Berns *et al.*, 2009; Carter & Rogers, 2008, Schaltegger & Burritt, 2005). However, applying this macroeconomic definition seems difficult for organizations, since it provides little guidance on how corporations should effectively identify present and future needs, determine the technologies to meet those needs, and understand how to balance organizational capabilities between multiple stakeholders (Gimenez, Sierra & Rodon, 2012).

Hence, a good number of definitions for sustainability have been proposed in the literature in bid to provide insightful corporate strategies. All of these definitions have one thing in common which is that they refer to three components at a higher level: the natural environment, society, and economic performance. We refer to some of the most highly cited definitions of sustainability as captured by management literature.

- The pillars of corporate sustainability include: the environmental sustainability which emphasizes the management of natural resources; social sustainability is concerned with the management of social resources, peoples' skills and abilities, institutions, relationships and social values (Sarkis *et al.*, 2010).
- Sustainability includes environmental management, closed-loop supply chains and a broad perspective on triple-bottom-line thinking that integrates profit, people and the planet into corporate culture, strategy and operations (Kleindorfer *et al.*, 2005).

### Dimensions of Corporate Sustainability: Environmental, Social and Governance (ESG)

As earlier mentioned, the Environmental, Social and Governance (ESG) index is known as the three pillars or dimensions of corporate sustainability. Factually, ESG ratings have become a recognized sustainability performance measurement throughout the world (Dahlberg & Wiklund, 2018). ESG is a concept which aims to capture additional dimensions of corporate performance, which are usually not revealed in financial information (Bassen & Kovacs, 2008). According to Bassen & Kovacs (2008) traditional corporate financial statements lack the capacity to inform management and investors about the certain value of the firm, such as reputation, quality, brand equity, safety, workplace culture, strategies, know-how and a host of other assets that are more significant than ever in a knowledge-based global economy. Thus, ESG factors captures a wider scope of non-financial data on environmental, social performance and corporate governance and can be utilized to evaluate the sustainable capabilities of firms (Tarmuji *et al.*, 2016). The performance of ESG is a measure used to appraise how well firms are doing on corporate sustainability and it consists of three main dimensions; Environmental, Social, and Governance. These three dimensions are known as the three pillars of

corporate sustainability and having main categories with good numbers of underlying factors. The main categories of the ESG performance according to Thomson Reuters ESG methodology is presented in the table below.

**Table 2.1. Main Categories of Corporate Sustainability Dimensions – ESG**

Environmental Dimension	Social Dimension	Governance Dimension
<ul style="list-style-type: none"> <li>• Resource Use</li> <li>• Emissions</li> <li>• Innovation</li> </ul>	<ul style="list-style-type: none"> <li>• Workforce</li> <li>• Human right</li> <li>• Community</li> <li>• Product Responsibility</li> </ul>	<ul style="list-style-type: none"> <li>• Management</li> <li>• Shareholders</li> <li>• CSR Strategy</li> </ul>

Source: Thomson Reuters (2017).

Using the Thomson Reuters methodology, Sikacz & Wołczek (2018), extracted the following features as the underlying factors of the ESG main categories and presented in table 2.2 below:

**Table 2.2 Underlying Factors of ESG main categories**

Environmental	Social	Governance
Resource reduction policy	Health and safety policy	Corporate Governance
Water policy	Training and development policy	Committee
Energy efficiency policy	Diversity policy	Audit Committee
Sustainable packaging policy	Employee satisfaction	Compensation Committee
Environmental supply chain	Remuneration gap	Board structure
Policy	Net employment creation	Board diversity policy
Environmental management	Trade union representation	Board experience
Team	Turnover of employees	Audit committee independence
Reduction of toxic chemicals	Woman employees	Average board’s term of office
Content	Woman managers	Board member’s term of office
Total energy consumption	Flexible working schemes	Shareholders’ rights policy
Renewable energy use ratio	Injuries	Equal voting right policy



Renewable energy production	Accidents	Involvement of shareholders
Renewable energy use	Occupational diseases	Board structure
Green buildings	Fatalities among employees	CSR Sustainability Committee
Total water consumption	HIV/AIDS program	Global Compact signatory
Emission policy	Training hours	Sustainability reporting / CSR
Biodiversity impact reduction	Training costs	GRI Report Guidelines
Total CO2 emissions	Human rights policy	External audit
NOx and SOx emissions	Child labour policy	ESG reporting scope
VOC or particulates emissions	Anti-corruption policy	
Total waste	Business ethics policy	
Total hazardous waste	OECD guidelines for multinational enterprises	
Total recycling waste	Employee engaged in voluntary Work	
Environmental protection Expenditures	Corporate responsibility	
Total gross R&D expenditures	Crisis management systems	
	Fair trade policy	

Source: Sikacz & Wolczek (2018).

At this point, it is important to note that Thomson Reuters is one of the notable agencies evaluating the performance of environmental, social and governance (ESG) and turning the results into the ESG ratings. The ESG ratings are designed to assist investors and other interest parties in the economic system to know how the companies are doing in terms of sustainability (Dahlberg & Wiklund, 2018). The current increase in the use of ESG ratings in investment decision making is occasioned by the fact that investors perceive a strong correlation between corporate sustainability performance and financial performance (Unruh *et al.*, 2016). According to Schaltegger & Burritt (2010) and Dahlberg & Wiklund (2018) the main reasons for the significant consideration and inclusion of ESG ratings in investment and business decisions include:

- Integration gain: meaning that many investors believe that when incorporating companies with high ESG performance, they will increase their long-term returns and lower their risk.
- Personal values: many investors use ESG data as a tool to exclude companies that conduct operations which are against their own values.
- Responsible Investment: investors want their investments to have a positive impact, meaning that they choose to invest in companies where they can see direct positive results of their investments. ESG investing (Responsible investing) should be pursued even by investors who only care about financial returns, since there are so many studies which show that ignoring ESG

factors is to ignore risk and opportunities that can either harm or increase their clients' financial returns.

- Legislative and stakeholder pressure: stakeholder pressure and the introduction of mandatory information and reporting requirements through governmental legislation is another possibility factor driving the consideration of ESG issues in today's investment. It is necessary for continuation of corporate activities to enforce information requirements on sustainability, institutional compliance and stakeholder communication and dialogues (Cooper & Owen, 2007; Unerman, 2007; Murillo-Luna, Garce' s-Ayerbe, & Rivera-Torres, 2008).
- Reduction of information asymmetries: the objective of corporate disclosure is to reduce information asymmetries between reporting organization and shareholders or potential investors of the firm's shares. In an ever changing and competitive business world empowered by advancement in information communication technology, firms are faced with the necessity to be accountable for not just financial performance but other performance aspects. Hence, in order to improve competitive advantage and increase access to finance, corporate organizations strive to embark on communicating distinguishing feats. These could take the form of sustainability report, which includes environmental, social and governance disclosure.
- Managing the business case for sustainability: one reason to introduce sustainability reporting is to identify and realize the economic (e.g., cost reduction or sales revenue increasing) potential of environmental, social and governance activities. Management of corporations will be motivated by this reason if it has proven link that the company may have a business gain for pursuing sustainability. Furthermore, firms with strong ESG performance have a deep insight of the long-term strategic issues in their industries and could lead the industry by making necessary long-term decisions to ensure the success of the business over longer time periods to remain sustainable.

As has been stated previously, a number of previous studies have found a significantly positive relationship between ESG rating and financial performance. This is one reason why ESG performance data has become such a popular tool for evaluating an investment in terms of sustainability. The CSFs are really gaining significant place in investment decision in emerged and emerging markets. GoodCorpration (2018) noted that after four years, companies like Volkswagen, Tesco, Toshiba and Rolls-Royce are still suffering damage caused by corporate scandals traceable to failure in sustainability factors. The scandal has decimated share as the share price of all four companies is still 30-40 percentage points below their pre-crisis peak, underperforming the market significantly with the FTSE index rising by 15% over the same period.

Historically, the concept of ESG started gaining attention in the 1970s through the efforts of a small body of investors interested in the environmental and social practices of the companies they invested their resources (Abd-Halim, 2014; Richardson, 2009). Recently, one might debate that the effort to conceptualize, improve and communicate the concept of sustainability, especially with particular reference to ESG has been intensified by two institutions (Abd-Halim, 2014; Galbreath, 2013). First, is the Principles for Responsible Investment (PRI) which was launched by the United Nations (UN) in 2006. The PRI is becoming de facto standards for taking ESG issues into account when determining the character of mainstream investment practices (Miralles-Quirós *et al.*, 2019; Escrig-Olmedo *et al.*, 2019; Tarmuji *et al.*, 2016; Galbreath, 2013). Second, Global Reporting Initiative (GRI) which was established in Boston in 1997 through the collaborating effort of the Coalition for Environmentally Responsible Economies (CERES) and the Tellus Institute. Initially, the GRI focused on a framework for environmental performance reporting. However, the third generation (G3) of the GRI Principles, published in 2006, expanded the framework beyond the environment reporting. The GRI framework was meant to cover six classes: environmental; human rights; labour practices and

decent work; society; product responsibility; and economic. While governance issues are not a category of separate focus, they are covered, particularly under the economic category (Galbreath, 2013). In October 2016, GRI launched the first global standards for sustainability reporting, which was developed by the Global Sustainability Standards Board (GSSB). According to the GRI, the Standards include all the main concepts and disclosures from the GRI G4 Guidelines, enhanced with a more flexible structure, clearer requirements, and simpler language. As at 9<sup>th</sup> September, 2019 the database of the GRI reviewed that 13,993 ORG are duly registered with GRI, 56,040 sustainability Reports and 33,269 GRI Reports

By structure, the institutional environment comprises three types of institutions: regulative, normative, and cognitive. Regulative comprises formal rules and incentives constructed by the state and other agents of the collective good. Normative comprise of the informal rules related to values and explicit moral commitments; while, cognitive encompass abstract rules allied with the structure of cognitive distinctions and taken for granted understandings. These three institutional influencers are interconnected and internally constant (Scott, 2001). Legally, Freshfield Bruckhaus Deringer, which is the world's fourth largest law firm, released a report investigating the legality of considering ESG issues in the investment process in 2005. The investigation concluded that integration of ESG was permissible and arguably required in all jurisdictions. This according to Smith (2011) was further supported by the U.N. Environmental Program Finance Initiative, which argued that it is the duty of investment consultants and asset managers to discuss ESG considerations with their clients when they first enter into a relationship to avoid future legal repercussions should an ESG issue have a negative impact on the fund. A beyond financial reporting focus can be found, for instance, in the Australian Corporations Act of 2001. Section 299 (1)(f) which requires companies who are "subject to any particular and significant environmental regulation" to report on performance in relation to such regulation (Galbreath, 2012). It is therefore, legally right to consider the three pillars of corporate sustainability namely: environmental, social and governance when taking investment decision.

### Enterprise Value Creation

Enterprise value is sometimes confused with equity value. Equity value is the enterprise value remaining for shareholders after creditors have been paid, while enterprise value is the sum of equity value and net debt value. According to the Corporate Finance Institute (CFI), Enterprise Value (EV) is the measure of a firm's total value. The measure looks at the entire market value rather than just the equity value, so all ownership interests and asset claims from both debt and equity are included. Enterprise Value can be thought of as the effective cost of buying a company or the theoretical price of a target company (before a takeover premium is considered) (CFI, 2018). The simple formula for enterprise value is:

$$EV = \text{Market Capitalization} + \text{Market Value of Debt} - \text{Cash and Equivalents}$$

The extended formula is:

$$EV = \text{Common Shares} + \text{Preferred Shares} + \text{Market Value of Debt} + \text{Minority Interest} - \text{Cash and Equivalents}$$

The value of the company can be derived from the assets it owns. However, obtaining the market value of each and every asset can be quite tedious and difficult. However, simple accounting equation can serve as a guide by looking at assets as the application of funds and both liabilities and shareholder's equity as the sources of funds used to finance those assets. Enterprise value or firm value means the current or market value of the company, so it's the market value of liabilities and the market value of equity considered together. EduPristine (2018) graphically represented the enterprise value as:

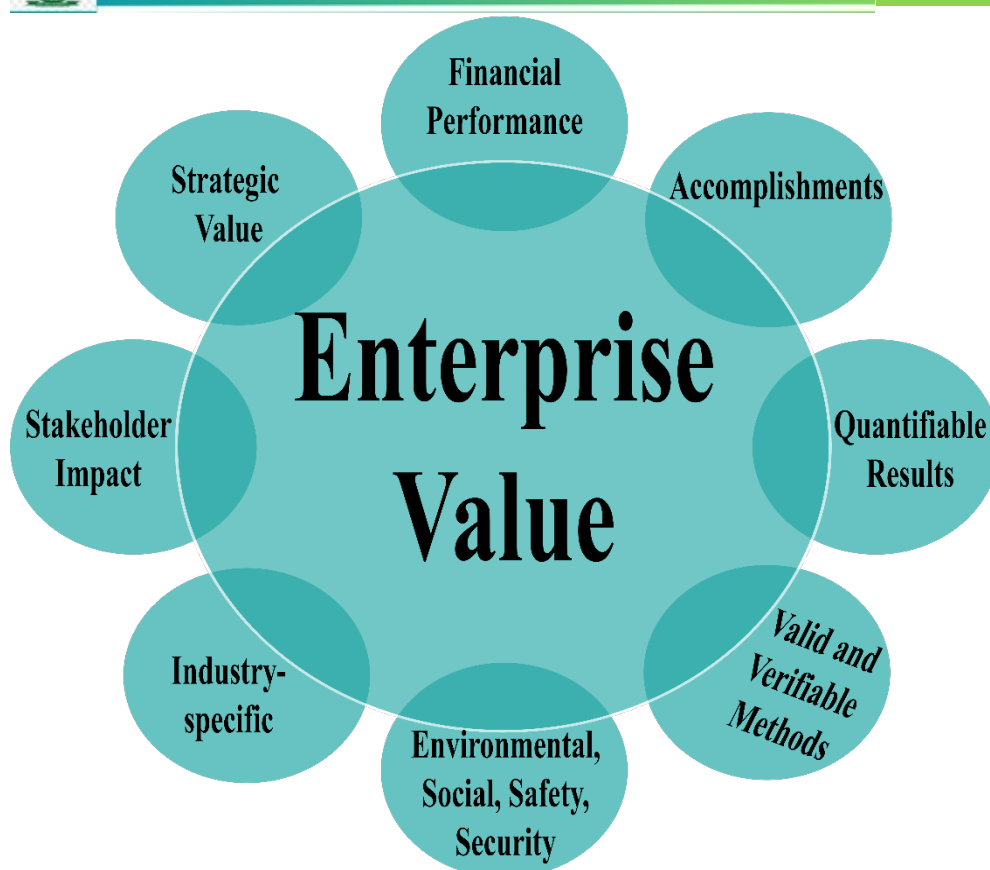


Figure 2.2 Enterprise Value

Source: EduPristine (2018)

### 2.1.6.1 Components of Enterprise Value

#### Equity Value

Equity value is found by taking the company's fully-diluted shares outstanding and multiplying it by a current market price per share. Fully-diluted shares include in-the-money options, warrants, and convertible securities, aside from just the basic shares outstanding. If a company plans to acquire another company, it will need to pay that company's shareholders by paying at least the market capitalization value. This alone is not considered an accurate measure of a company's true value, and for that reason, other items are added to it as seen in the EV equation.

#### Total Debt

This is the contribution of banks and other creditors. They are interest-bearing liabilities and are comprised of short-term and long-term debt. The amount of debt gets adjusted by subtracting cash from it because, in theory, when a company has been acquired, the acquirer can use the target company's cash to pay a portion of the assumed debt. If the market value of debt is unknown, the book value of debt can be used instead.

#### Preferred Stock

Preferred stocks are hybrid securities that have features of both equity and debt. They are treated more as debt, because the holder receives a fixed value of dividends and have a higher priority in asset and earning claims than common stock. In an acquisition, they normally must be repaid just like debt.



### **Non-Controlling (Minority) Interest**

Non-controlling interest is the portion of a subsidiary not owned by the parent company (who owns a greater than 50% but less than 100% position in the subsidiary). The financial statements of this subsidiary are consolidated in the financial results of the parent company.

We add this minority interest to the calculation of EV because the parent company has consolidated financial statements with that minority interest; meaning the parent includes 100% of the revenues, expenses, and cash flow in its numbers even though it doesn't own 100% of the business. By including the minority interest, the total value of the subsidiary is reflected in EV.

### **Cash and Cash Equivalents**

Cash and cash equivalents are the most liquid assets of a company. Examples of cash equivalents are short-term investments, marketable securities, commercial paper, and money market funds. The cash and cash equivalents are subtracted from enterprise value because it will reduce the acquiring costs of the target company.

### **Importance of Enterprise Value**

- It tells us about the worth of the company. In other words, it's a theoretical take over price.
- It represents the economic value of a company.
- It is a theoretical takeover price if a company is to be bought as it accounts for the debt as well as the cash that the acquirer would pocket in the transaction
- It helps in comparing companies of different capital structures.
- Returns from different businesses can be compared to the ones interested in buying controlling stakes.
- For the stock market investors, it is used to neutralize the risks and accordingly compare the returns expected

### **Theoretical Review**

This study is anchored on shareholder theory

#### **Shareholder theory**

The shareholder theory holds that businesses have only one objective, which is to maximize shareholders wealth. In fact, the father of the shareholder theory Friedman noted that it is a misconception of the free economy to think that businesses have some social responsibility beyond that of maximizing shareholders' wealth (Friedman, 1962). He argued that the only responsibility of a business entity is to involve in activities that will generate profits and increase the shareholders wealth. Friedman (1962; 1970) described as threat to the free society for corporations to accept some sort of social responsibility, since individual businessmen would decide what the social interest entails. Furthermore, contributions to any purpose other than within profitable business activities are seen as abuse of shareholders' right and diminishing of the decision power of their own funds, by using their money involuntarily. Friedman (1962) noted that company's contributions to the society should be covered by the corporate tax. In 1970, Friedman stated that "the primary responsibility of corporate managers is to act as employees to the shareholders and act only upon their request".

According to Brown, Helland, & Smith (2006) spending funds on activities not directly associated with the profit maximization objective is often considered an agency cost, as managers take rights to spend money on what they believe is a good cause, which in turn becomes an opportunity loss to shareholders. Such conflicts between the societal (stakeholders) interest and shareholders' interest can be seen as a violation against ethical principles recognized in a free market economy. Following the same principle,



the foundations of a market economy allow only a single legitimate objective for a corporation, that is, the maximization of shareholder wealth (Friedman 1962; 1970). Furthermore, Sternberg (2004) identified that the advocates of the shareholder theory claim that any social responsibility put on corporations undermine private property, since the owner of the property is denied the right to decide how the property is to be used.

According to Mansell (2013) the shareholder theory holds that if trade-offs have to be made, the primary intention in making the trade-off should be to foster a purpose that can be justified to shareholders. If the arguments of the classical Shareholder theory hold, then trade-offs justified by shareholders would be those that are financially beneficial for them. As corporate sustainability has become an important societal issue, the validity of the shareholder theory's view of trade-offs can be questioned. The meaning of a trade-off today might have more to do with societal implications than financial losses.

Some scholars have argued that the sole purpose of corporations to maximize shareholder wealth underlies major accounting and other corporate scandals around the world (Dahlberg & Wiklund, 2018). This argument lies within critics' view that businesses that are keen to shareholders' profit are more willing to thrust legal boundaries (Bakan, 2004; Phillips, 2003). Furthermore, Magill, Quinzii & Rochet (2013) argue that firms with the sole objective of profit maximization will disregard potential benefits for consumers and workers in investment decisions and thereby fail to make adequate investment decisions. This implies that if firm takes into consideration its employees and customers in investment decision, it could increase its profitability (Magill *et al.*, 2013).

### Empirical Review

In Nigeria, Uwuigbe *et al.* (2018) examined sustainability reporting and firm performance in Nigeria, using a bi-directional Approach. The objectives of the study were to check if firms with improved sustainability reporting have better firm performance and, secondly, to know if firms with better performance have improved sustainability reporting. The study covered deposit money banks listed on the floor of the Nigerian Stock Exchange for the period 2014 - 2016. The study used judgmental sampling technique in the selection of 10 deposit banks out of 16 banks. The study noted that the sampled banks represented about 62.50% of the population and also accounted for more than 50% market share in the industry. Data were extracted from the annual report and stand-alone sustainability reports of the selected banks using content analysis and coding approach. Panel regression technique was used to analyze the data extracted. The results showed that there is a bi-directional relationship between sustainability reporting and firm performance of quoted Deposit Money Banks (DMBs) in Nigeria. This finding is in-line with the proposition of the legitimacy theory. Specifically, the study indicated that the market price per share of the sampled banks had a significant negative influence on sustainability reporting. In addition, the study also revealed that sustainability reporting had a significant positive influence on revenue generation of the sampled banks. The study suggested that Nigerian deposit money banks should improve their sustainability reporting index to drive their performance positively. Further, the study suggested that future research in the area of the subject matter should consider other sectors and conduct a comparative analysis across the sectors.

Sadiq, Azizat, Fatima & Ibrahim (2017) examines the relationship between corporate social responsibility and firm performance in Nigeria. The study employed a panel data series to examine the relationship between CSR and performance measured by size of manufacturing companies. The study sourced data from the annual reports released by the Nigeria Stock Exchange for 14 companies for ten consecutive years which is between the years of 2005 to 2014. The panel data analysis method was adopted for the study because this research involves more than one company to also estimate the unknown parameters in other to minimize the differences between the observed responses. The results



revealed that there is no significant relationship between corporate social responsibility and firms' performance measured by firms' size. The study also revealed that there is negative relationship between corporate social responsibility and firm's efficiency. The study recommended among other things that manufacturing companies should also improve on their CSR activities in order to ensure firms development. Moreover, manufacturing companies should note that the more they are socially responsible the stronger the good image or corporate lineage of the company will be.

Nwobu (2017) investigated the determinants of corporate sustainability reporting in selected companies in Nigeria. The objectives include the following: to examine the variation in sustainability reporting across selected companies from 2010-2014, access the factors that influence sustainability reporting in Nigeria from perspective of corporate respondent, access extent companies institutional field factors influence their sustainability reporting in Nigeria and investigate the extent that internal organizational processes of companies influence their sustainability reporting in Nigeria. A sample size of 54 listed companies were selected from four sectors of Nigerian stock exchange. The scope of the study covered from 2010 to 2014. Panel data regression techniques were used. Data were sourced from the companies' annual reports and questionnaires administered to the companies. The results revealed that there is a statistically significant variation in sustainability reporting from year 2010 - 2014 in the sampled companies. Secondly, the results further showed that the companies were influenced by the disclosure guidelines of the Security and Exchange Commission (SEC) code of corporate governance, and central bank of Nigeria sustainability reporting principles. The study recommended that companies should be encouraged to prepare interim sustainability reports as at when due and chief executive officer who is responsible for making decision should support sustainability reporting from within business organization.

Prior to the above, Nwobu (2015) examined the relationship between corporate sustainability reporting and profitability and Shareholders Fund in Nigerian Banks. The study analyzed the annual reports of eight (8) banks in Nigeria for the presence or absence of sustainability reporting and how the sustainability disclosure relates with profitability and shareholders' fund. The study employed content analysis methodology to calculate the sustainability index based on researcher's benchmark. Data on the independent variables namely Profit After Tax (PAT) and Shareholders Fund (SHF) were also extracted from the annual reports of the banks. The study revealed that that sustainability reporting has received substantial attention over the past four (4) years in the Nigerian banking sector. Secondly, the study found a positive correlation between sustainability reporting index and Profit After Tax (PAT) and shareholders' fund. The study suggested that future studies should expand the sample size and used marketbased performance measure instead of accounting-based measure which the study employed.

Dibia and Onwuchekwa (2015) studied the determinants of environmental disclosures using oil and gas companies in Nigeria. A sample of 15 companies drawn from the oil and gas sectors of the Nigerian stock exchange for 2008-2013 financial years was used for the study. Secondary data was sourced from the annual reports of the sampled companies while the Binary regression technique was used as the data analysis method. The findings of the study show that there is a significant relationship between company size and corporate social responsibility disclosures. Secondly there is no significant relationship between Profit and corporate social responsibility disclosures. Thirdly, there is no significant relationship between Leverage and corporate social responsibility disclosures. Finally, there is no significant relationship between audit firm type and corporate social responsibility disclosures.

## Research Design

this study adopted the content analysis research design.

### Content Analysis

Different ways and units of analysis have been used in content analysis. This is because choosing a suitable unit of analysis is an important step in conducting content analysis, and it depends on the decision of the researcher and how the researcher wants to drive the analysis (Eltaib, 2012).

The prior empirical studies suggest that appropriate unit of analysis could be in written communication, words, sentences or pages, and the case for using different units revolve around the unit of meaning and the extent to which each unit can legitimately be employed to draw the appropriate inferences (Uwaloma, 2011). Sentences could be appropriate when the researcher is looking for the inner meaning, pages are suitable when the purpose of the study is to see the space given to the topic, and words are preferred, especially when the researcher is looking for specific words.

In ESG disclosures research, use of words as a unit of analysis has some drawbacks (Campbell, 2003; Milne and Adler, 1999). Words do not convey any meaning by themselves and do not give a sound foundation without a sentence to code ESG disclosure (Milne and Adler, 1999). In contrast, a sentence is recognised as the main unit of speech or writing (Walden and Schwartz, 1997). Most of the studies in the area of ESG disclosure have used sentences as a unit of analysis in their content analysis and it has become more popular in the areas of corporate environmental, social and governance disclosure (Miralles-Quirós, *et al.*, 2019; Uwaloma, 2011; Gray, *et al.* 1995; Guthrie & Abeysekera, 2006). Using sentences as a unit of analysis, is more appropriate compared with other units and it is more likely to supply complete, reliable, and meaningful data for additional analysis (Guthrie & Abeysekera, 2006). In the present research, sentences were used as a unit of analysis to capture the ESG disclosures in relation to the categories and underlying factors highlighted in chapter 2 of this study. The coding frame is as follows:

**Table 3.3 Content Analysis Coding Frame**

Corporate Sustainability Pillar	Category	Category/ Underlying Factors Appearance	Sentence indicating category/ Underlying Factors	Positive	Negative	Total Qualitative	Weighted
Environmental	Resource Use						
	Emissions						
	Innovation						
	<b>E TOTAL</b>						
Social	Workforce						
	Human Rights						
	Community						
	Product Responsibility						
	<b>S TOTAL</b>						
Governance	Management						
	Shareholders						
	CSR Strategy						
	<b>G TOTAL</b>						
Corporate Sustainability	CSF/ESG						

Source: Researcher’s Design based on Thomson Reuters ESG Scores Methodology

\*Refer to table 2.2 for the underlying factors.

**Data Visualization and Descriptive statistics**

This section of analysis presents the data visualization and descriptive statistical techniques of visualizing, summarizing and describing the information (data) collected. Data were visualized and descriptively explain the trend and pattern in the corporate sustainability and enterprise value creation data collected: giving a quick lookup insight into the trend and pattern of corporate sustainability and enterprise value data. Unambiguously, data visualization are such as bar graph, pie chart; and descriptive statistics such as mean, standard deviation, Maximum and Minimum.

**Inferential Statistics**

This section of the study presents the inferential statistics proposed for this study. This includes the One-way ANOVA and Panel regression analysis.

**One-Way ANOVA Model**

The f-statistic of the One-way ANOVA was utilized to assess whether there is statistically significant difference in the means of corporate sustainability disclosures and enterprise value creation across the sectors of the Nigerian Stock Exchange Market. Ting *et al.* (2019) used mean difference to compare ESG data among developed and emerging market Firms. The test of mean difference could be conducted using one sample t-test, independent samples t-test and One-way ANOVA depending on the number of groups comparable. The one-way ANOVA is used when comparing the mean of three (3) or more groups. This study used the one-way ANOVA, since the groups (sectors) are more than 3. The following hypotheses were tested using the One-way ANOVA:

**Model specification**

HO<sub>1</sub>: Corporate sustainability factors (CSFs) have no significant influence on firms' enterprise value (EV) in Nigeria.

$$FEV_{it} = \beta_0 + \beta_1 (E)_{it} + \beta_2 (S)_{it} + \beta_3 (G)_{it} + \beta_4 (FS)_{it} + \mu_{it} \dots\dots\dots (iv)$$

**Where:**

- EV = Firms' Enterprise Value
- E = Environmental
- S = Social
- G = Governance
- FS = Firm Size (Log of total assets)
- $\beta_0 - \beta_5$  = Parameter Estimates
- $\mu$  = Stochastic factor/error term

**Decision Criteria:**

*Reject the null hypothesis if P-Value (sig) is < 0.05 and accept alternative.  
Accept null hypothesis if P-Value (sig) is > 0.05 and reject the null hypothesis.*

**Table 4.1 Result Estimates**

<b>Variables</b>	<b>Fixed Effect++</b>	<b>Random Effect</b>	<b>Pooled Model</b>
<b>E</b>	0.221546 (1.792908)	0.316401 (2.648266) **	0.065704 (0.32349)
<b>S</b>	-0.02507 (-0.259109)	0.015809 (0.166178)	0.36542 (2.146397) **
<b>G</b>	0.102617 (1.045633)	0.055701 (0.597711)	-0.061864 (-0.50308)

LOG(FS)	0.642384 (19.57147) **	0.875741 (48.63051) **	0.94169 (64.98374) **
C	5.636906 (10.25705) **	1.665903 (5.633803) **	0.504984 (2.217702) **
R-Squared	0.994191	0.871775	0.966089
Adjusted R-squared	0.992669	0.870539	0.965763
F-Statistic	653.1514**	705.3768**	2955.764**

Source: Researcher’s Computations (2021) using EViews 10

\*\*\*, \*\* and \* represent 1%, 5%, and 10% significance levels respectively.

Figures in brackets are t- statistics values.

++ = lead equation.

Dependent variable: Enterprise Value (EV)

The Fixed Effects and Random Effects Models form the bases for the evaluation of this study. The Fixed effects or LSDV Model allows for heterogeneity or individuality. While the Random effects model has a common mean value for the intercept (Greene, 2008). The study conducted the Hausman test to determine the most appropriate model.

### Hausman Test

In the Hausman Test, the null hypothesis is that the preferred model is random effects, while the alternative hypothesis is that the fixed effects model is preferred (Green, 2008). The Hausman test result is as presented below:

**Table 4.2 Hausman test result For Hypothesis Six**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	78.765651	4	0.0000
Cross-section random effects test comparisons:			
Variable	Fixed	Random	Var(Diff.) Prob.
E	0.221546	0.316401	0.000995 0.0026
S	-0.02507	0.015809	0.000311 0.0205
G	0.102617	0.055701	0.000947 0.1273
LOG(FS)	0.642384	0.875741	0.000753 0.0000

Source: Researcher’s Computations (2021) using EViews 10 (see appendix W)

The Hausman test chi-sq. statistic value of 78.765651 and the probability value of 0.0000, indicate that fixed effects model was preferred, since the probability was less than 0.05. Meaning that the study rejects the null hypothesis of Hausman test which states that the random effects was preferred. And accepted the alternative that the fixed effects model was preferred. Therefore, based on the Hausman test, the fixed effects model has been accepted as the best estimator of the influence of corporate sustainability factors (CSFs) on firms’ enterprise value in Nigeria.

Based on the fixed effects econometrics estimate presented in table 4.2 above, the value of R-squared (R<sup>2</sup>) was 0.994191, while the adjusted R-squared was 0.992669. Based on the adjusted R-squared, this indicates that about 99.27% of the total variations observed in the dependent variable

(enterprise value), was explained by the independent variables (corporate sustainability factors and Firm Size). This implies that corporate sustainability factors and the firm size explained about 99.27% of the total variations observed in the enterprise value companies in Nigeria. Simply put, corporate sustainability factors have about 99.27% influence on firms' enterprise value in Nigeria. To test if the influence of corporate sustainability factors on the enterprise value was statistically significant, the F-statistic was considered.

The value of the F-statistic of the fixed effect model presented in the econometric estimates in table 4.2 indicated that the overall goodness of fit of the model was acceptable. It equally suggested that the corporate sustainability factors had significant influence on the enterprise value, since the value of F-statistics was 653.1514 with a probability value of 0.000000 which was less than 0.05. The study concludes that corporate sustainability factors (CSFs) have significant influence on firms' enterprise value in Nigeria. The coefficient of the control variable log of total assets (Log (FS)), which was 0.642384 and t-statistic value of 19.57147 suggest a positive and significant impact on the enterprise value of companies in Nigeria. Therefore, the study rejects the null hypothesis that corporate sustainability factors (CSFs) have no significant influence on firms' enterprise value creation (EV) in Nigeria. Accepting the alternative that corporate sustainability factors (CSFs) had significant influence on firms' enterprise value creation (EV) in Nigeria.

Specifically, the fixed effect estimate indicates that the coefficient of environmental score (E) was 0.221546. This indicates a positive relationship between environmental score (E) and enterprise value in Nigeria. Meaning that an increase in the environmental score will lead to about 0.221546 proportional increase in enterprise value of companies in Nigeria. The t-test value of 1.792908 with probability value of 0.0739 (see appendix U) indicate that the positive relationship between environmental score (E) and enterprise value was not statistically significant at 5%, since the probability value was greater than 0.05. This study concludes that there was a positive and insignificant relationship between environmental score (E) and enterprise value of companies in Nigeria.

Secondly, the coefficient of social score (S) was -0.025070. This suggests that there was a negative relationship between social score (S) and enterprise value of companies in Nigeria. This implies that an increase in social score (S) will lead to about 0.025070 decrease in enterprise value of companies in Nigeria. The t-statistic value of -0.259109 and its probability value of 0.7957 (see appendix U) imply that the negative relationship between social score (S) and enterprise value of companies was statistically insignificant at 5%, since the probability value was greater than 0.05. Therefore, the study concludes that there was a negative and insignificant relationship between social score (S) and enterprise value of companies in Nigeria.

Finally on the hypothesis six parameters, the coefficient of governance score (G) was 0.102617. This indicates that there was a positive relationship between governance score (G) and enterprise value of companies in Nigeria. It equally implies that an increase in governance score will lead to about 0.102617 proportional increase in enterprise value of companies in Nigeria. The t-test value of 1.045633 with probability value of 0.2965 (see appendix U) indicate that the positive relationship between governance score (G) and enterprise value was not statistically significant at 5%, since the probability value was greater than 0.05. Thus, one can say that there was a positive and insignificant relationship between governance score (G) and enterprise value of companies in Nigeria.

## CONCLUSION

This study examined the impact of corporate sustainability on enterprise value in the Nigerian stock market. This study covered five (5) years content analysis of annual reports and stand-alone sustainability reports of eighty-four (84) companies listed on the Nigerian Stock Exchange Market. It's important to note that the only known significant effort towards corporate sustainability reporting in Nigeria is the Nigerian Stock Exchange (NSE) sustainability disclosure guidelines issued in 2016.



The study used content analysis to extract data for the study. Descriptive statistics, and inferential statistics - One-way ANOVA and panel regression analysis were used to estimate some of the models and test hypotheses of the study. The Hausman test was also conducted to determine the most appropriate model between fixed effect and random effect. The data analysis was performed using Econometrics View (EViews) version 10 and Statistical Package for Social Sciences (SPSS) version 25, while the data visualizations were done with Microsoft Excel. Conclusively, this study revealed that corporate sustainability factors (CSFs) had significant impact on firms' enterprise value creation (EV) in Nigeria. Specifically, there was a positive and insignificant relationship between environmental score (E) and enterprise value of companies in Nigeria. Secondly, there was a negative and insignificant relationship between social score (S) and enterprise value of companies in Nigeria. Finally, there was a positive and insignificant relationship between governance score (G) and enterprise value of companies in Nigeria.

### Recommendation

Based on the findings of this study we make the following recommendation is made:

- i. Based on the significant influence of corporate sustainability factors on enterprise value, this study recommends that companies should incorporate environmental sustainability practices into their business models and maintaining good workplace, ensuring protection of human right, governing the companies with fairness and accountability to maximal stakeholder value.

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