

SUSTAINABILITY PERFORMANCE OF FIRMS IN THE EMERGING ECONOMY: THE ROLE OF CORPORATE GOVERNANCE AND CORPORATE STRATEGY

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Abstract

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Despite the significance of the company's strategy decisions in shaping the governance of the board toward sustainable performance, an inadequate study has focused on the role of corporate strategy in the association between corporate governance (CG) and sustainability performance (SP). This study examines the direct influence of corporate governance on sustainability performance, as well as through corporate strategy (CSTR) as a mediating variable. A panel data mediation methodology based on a series of panel data regression analyses was conducted using data from 126 listed non-financial firms over the 2012–2021 period. The study finds that corporate governance has a positive and significant contribution to sustainability performance. Furthermore, this study demonstrates that corporate strategy acts as a mediator that influences the link between corporate governance and sustainability performance. The findings of the study shed fresh light on the board members, practitioners, and policymakers for planning and promoting sustainability practices, as well as strategies and firm governance necessary for sustainable development. The paper concludes that companies with effective corporate governance structures stand a better chance of demonstrating better sustainability performance, specifically with strategy decisions targeted at sustainability integration. Our findings support the agency and stakeholder theoretical points of the study and are also consistent with Ludwig and Sassen's (2022) findings.

Keywords: Corporate Governance, Sustainability Performance, Sub-Saharan Africa, Corporate Strategy, Emerging Economy

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1. INTRODUCTION

The long-standing discussions on corporate governance (CG) have assumed a central issue for society in the new global economies due to the widespread corporate failures across the globe

(Maali et al., 2021). The effect of this phenomenon on firms' outcomes is critical because it is evident that once a company exhibits good governance it can gain a sustainable performance (Munir et al., 2019). Ludwig and Sassen (2022) posit that corporations influence a substantial amount of people in all

classes globally. Hence, it is imperative to create a corporate governance structure with more attention to stakeholders as much as shareholders' values which arguably can influence sustainability performance (SP). For example, recent discussions on corporate governance have moved toward present ecological and social issues in order to expound on how firms are governed, particularly how corporate governance impacts firm environmental and social behaviours (Hussain et al., 2018; Orazalin, 2020).

The recent Agenda for Sustainable Development Goals (SDGs) (United Nations [UN], n.d.) as well as pressure from stakeholders for corporates to accept responsibility for exacerbating environmental issues have contributed to global awareness (Shwairef et al., 2021). However, the Cadbury Committee's definition of corporate governance emphasises value creation whilst stakeholders' expectations of companies' strategy decisions to stimulate sustainable business practices are given comparatively little attention (Crifo et al., 2019). Moreover, it is documented that corporate governance plays a key role in enhancing a company's social and environmental sustainability performance, across all industries (Hussain et al., 2018). Some studies indicate that companies' sustainable business approaches, although have become popular in recent years, can decide whether or not the company will be successful in the long run (Ullah et al., 2023) and more attractive to investors (Hasanah et al., 2023). It is now obvious that today managers of companies need to focus on and account for their environmental activities and their charitable ingenuities which also include enhanced labour practices such as the reduction of accidents at work (Maali et al., 2021; Wahidahwati & Ardini, 2023). Despite the importance of the firms' governance to inspire sustainable business activities (Naciti, 2019), it appears that the correlation between corporate governance and sustainability performance has not been fully explored.

Based on these discussions, most studies have examined whether corporate governance influences sustainability performance (Hussain et al., 2018; Naciti, 2019; Tjahjadi et al., 2021; Ludwing & Sassen, 2022). For example, Mallin et al. (2013) establish a link between corporate governance and social performance, whilst Rodrigue et al. (2013) add an environmental dimension. Although these scholars affirm that the firms' governance structure can be a key determinant of sustainability performance, their studies failed to explain how corporate governance affects sustainability performance since the nexus between firms' governance and sustainability performance hardly follows a straight direction (Oertwig et al., 2017). Thus, the significance of how firms' strategy decisions play a key role in shaping the governance of the board toward sustainable performance has been ignored (Al-Shaer et al., 2023). Thus, affirming Park's (2023) assertion that insufficient study has focused on the role of corporate strategy in the association between corporate governance and sustainability performance. This implies that the in-depth conceptualization of the relationship between firms' strategy, governance, and sustainability performance is yet to be realised fully, particularly in emerging economies where firms' governance issues are limited (Casonato et al., 2019; Maali et al., 2021). This argument

triggers an empirical call for the inclusion of either a mediating variable or a moderating variable to explain the nexus between corporate governance and sustainability performance. Against this backdrop, the current study assumes a firm's decisions are based on its strategy dimensions; hence a corporate strategy is introduced as a mediating variable in expounding the nexus between corporate governance and sustainability performance. This means that the need to examine the mediating effect of corporate strategy on the relationship between corporate governance and sustainability performance is very crucial because corporate strategy is an indispensable part of corporate sustainability (Park, 2023).

Based on the agency and stakeholder theories contentions, the existence of good corporate governance structures can determine the willingness of the board of directors to pursue certain corporate strategies that might account for meeting the company, as well as its internal and external stakeholders' objectives together (Oertwig et al., 2017; Al-Shaer et al., 2023). For instance, stakeholder theory (Marcon Nora et al., 2023) suggests that companies with better corporate strategies are enabled to conduct their business in a manner considered ethical, socially acceptable, and beneficial to the community in relation to firms' sustainable performance. Similarly, agency theory (Nguyen et al., 2021) advocates that with good corporate governance structures in place managerial monitoring is enhanced, which in turn can improve firms' strategic decision-making, particularly those concerning their sustainable performance. From the stakeholder theoretical perspective, Dyllick and Hockerts (2002) posit that with corporate strategy in place, the economic, environmental, and social investment needs have to be expanded and sustained for the future. This suggests that the corporate governance's effectiveness can improve corporate strategy which will tend to also raise the firm's sustainability performance. Hence, this study's originality consists of a proposition of indirect association between corporate governance and sustainability performance through corporate strategy. Therefore, the objective of the study is to examine the mediating effect of corporate strategy on the association between corporate governance and sustainability performance of listed non-financial companies in Sub-Saharan Africa (SSA). Hence, the study seeks to address the following research question:

RQ1: Does corporate strategy mediate the association between corporate governance and sustainability performance of SSA firms?

Given the obviously insufficient research of past corporate governance and sustainability nexus, our study intends to extend the present knowledge by contributing to the extant literature as follows.

First, our study expands the present knowledge and provides new evidence on how firms' strategy plays a key role in shaping the link between corporate governance and sustainability performance in the SSA context considered as susceptible to the consequences of global environmental and social problems such as climate change, pollution, deforestation, poverty, and concern around energy, as well as access to clean water (Tilt et al., 2020). Second, to advance the current knowledge based on

our findings, this study used content analysis methods to build comprehensive measures for corporate governance, corporate strategy, and sustainability performance variables. These cover 49 governance score items (Brown & Caylor, 2006) for corporate governance; 32 environmental, 32 social, and 21 economic items for sustainability performance indexes based on Global Reporting Initiative (GRI) G4 guidelines (GRI, 2013), and finally 6 ratios for the strategy composite score items which encompass research and development (R&D), firms' sales and employee growth, property, plant and equipment, the standard deviation of a total number of firm employees, as well as selling, general and administration expenses (Bentley et al., 2013). Finally, the study adopts a panel mediation methodology to examine the role of corporate strategy on the association between corporate governance and sustainability performance, as well as performing a series of panel data regression analyses based on Baron and Kenny's (1986) approach.

The rest of the paper is structured as follows. Section 2 reviews the relevant theoretical and empirical literature leading to the hypotheses developments. Section 3 analyses the methodology that has been employed to conduct the empirical study. Section 4 presents the results and Section 5 reports the discussions of the findings from the analysis. Finally, Section 6 concludes the paper.

2. LITERATURE REVIEW

The concept that corporate governance influences sustainability performance is extensive but the empirical literature review to back this notion remains contradictory. This is because the mechanism underlying this association is yet to be fully known. To address this gap, we discuss the theoretical background and empirical outcomes by reviewing the relevant literature in line with key variables.

Agency theory (Jensen & Meckling, 1976) argues that having effective corporate governance structures can help mitigate agency problems and lessen a firm's uncertainties and risks which can help establish better business links with stakeholders. In this perspective, Shwairef et al. (2021) posit that the existence of effective governance implies a positive effect across the financial aspects of a company can be predicted. Agency theory indicates that managers are given authority to perform services on behalf of the shareholders which also includes engagement of strategic decision-making. Although agency theory highlights the importance of having a good corporate governance system to push a firm's decisions toward social and environmental performance, this theory is weakened in the sense that its focus is primarily on the financial benefits (Nguyen et al., 2021). Nevertheless, firms may similarly commit to better social and environmental performance practices so as to improve their corporate image as well as demonstrate compliance with the values of the broader community.

Consequently, our study also employs stakeholder theory (Freeman, 1984) to expound on the impact of good corporate governance on firm sustainability performance (Naciti, 2019). Stakeholder theory (Maali et al., 2021) indicates that managers

need to satisfy a variety of stakeholders such as workers, suppliers, customers as well as local community organisations, as they can influence the company's performance outcomes. From this viewpoint, we argue that it is not enough for the firms' governance to emphasis solely the needs of the owners, but rather through its strategies, focus on the sustainability practices in line with the stakeholders' interests (Park, 2023). The stakeholder theory (Nguyen et al., 2021) suggests that firms' governance structures and sustainability creativities should be aligned with stakeholder goals, which in turn can influence firms' decisions on environmental and social strategies. From this perspective, it is argued (Oertwig et al., 2017) that since the firms' decisions mostly emanate from their strategies, the existence of effective corporate governance structures can influence corporate managers to pursue specific strategies aimed at meeting firms' internal and external stakeholders' expectations collectively.

From a stakeholder theory viewpoint, firms cannot attain success if their focus is only on economic benefits without taking the interests of balanced values of the environment, society, and the economy, as well as other stakeholders into consideration (Tiep Le & Nguyen, 2022). In this regard, a firm's stakeholders can be influenced by corporate decision-making, which in turn can influence its corporate responsibility in diverse ways (Freeman et al., 2020). From this background, corporate strategy is assumed to support the link between corporate governance and sustainability performance, as corporate strategy remains indispensable in corporate sustainability initiatives (Park, 2023). Tiep Le and Nguyen (2022) contend that once stakeholders sense that the firm cares about their interests in a sustainable way, particularly by addressing their concerns about society and the environment, they become motivated and also to be more attached to the organisation.

Accordingly, based on the agency and stakeholder theories arguments, how the firm is governed to be able to shape corporate strategy efforts toward sustainability performance is crucial in emerging economies. From this perspective, Park (2023) concludes that recent studies are generally cognisant of the importance of corporate strategy in sustainability and governance issues. However, corporate strategy has still hardly been debated as a critical internal contingency issue in the existing literature on corporate governance and sustainability performance. Therefore, this study employs both agency and stakeholder theories to explain that through their strategy, companies with effective corporate governance are expected to endorse transparency, fairness as well as accountability to the stakeholders' needs, which in turn can enhance sustainability performance.

2.1. Corporate governance and sustainability performance

Maali et al. (2021) argue that a cluster of signs points to an interrelationship between corporate governance and sustainability performance. In this perspective, corporate governance plays a significant part when it comes to the firm's effective decision-making about sustainability practices (Arora &

Dharwadkar, 2011). The effectiveness of corporate governance existence in the firm likewise relates to better monitoring of environmental, as well as social performance and therefore might have a strong effect on sustainability performance (Maali et al., 2021). In that sense, to find an explanation of how good governance structures influence sustainability performance, there is a need to focus on the specific features of directors (Michelon & Parbonetti, 2012). For example, characteristics such as the size, the independence of the board, and the chief executive officer's (CEO's) dual leadership relate positively to environmental performance (Arena et al., 2014; Maali et al., 2021). It is argued that gender heterogeneity on the board can be associated with sustainability performance due to the claim that women's presence in governance positions is positively correlated with voluntary revelations of social performance outcomes (Martinez & Nishiyama, 2019). For instance, it is generally believed that if women are involved in panel issues of the firm, the matters that touch on society and the environment become profound in all discussions. Against this backdrop, some scholars have discovered a direct link between heterogeneous gender boards and higher quality of non-financial (sustainability) performance (Al-Shaer & Zaman, 2016).

Conversely, Tjahjadi et al. (2021) document that councils (boards) with lower education can be associated with inverse environmental sustainability performance. The above discussions allude to the assertion that the efficacy of corporate governance and corporate sustainability performance can be related so as to influence firms' performance in all dimensions. In this study, based on the literature review, companies' governance structures are considered the determinants of sustainability (environmental, social, and economic) performance. Based on the above, the first hypothesis is formulated:

H1: Corporate governance (CG) has a positive and significant relationship with sustainability performance (SP).

2.2. The inclusion of corporate strategy in mediating the nexus between corporate governance and sustainability performance

This subsection provides discussions on the role of corporate governance and the firm's strategy orientations that might lead to the achievement of sustainable performance. We document that the inclusion of corporate strategy in mediating the relationship between corporate governance and sustainability performance is discussed based on the recent literature and in line with debates of association between corporate governance and corporate strategy, and corporate strategy and sustainability performance. The recent literature (Naciti, 2019; Tjahjadi et al., 2021) shows that there is a positive and significant correlation between corporate governance and sustainability performance. Although these studies demonstrate a positive correlation, others reveal neutral and/or curvilinear (Park, 2023). Based on the mixed outcomes, we suggest that the association could be more than a straight causal association. According to Park (2023), a lack of attention to mediating

mechanisms or moderating conditions may be one of the reasons for these mixed results.

Corporate governance scholars are now calling for investigations into the circumstances under which corporate governance is correlated with sustainability performance. Some of them presently have turned their eyes to corporate social responsibility (Tiep Le & Nguyen, 2022), environmental conditions (Nguyen et al., 2021), as well as corporate strategy (Park, 2023). In response to the call to fill this research gap, our study suggests that since firms' governance decisions emanate from their strategy dimensions, we employ corporate strategy as a mediator to examine its role in the CG-SP nexus. Corporate strategy and corporate governance implementation are correlated with better sustainability performance (Tiep Le & Nguyen, 2022).

For instance, in the corporate governance and strategy literature, it is argued that corporate strategy plays a role in orienting organisations to be more responsible to stakeholders, society, and the environment which turns to push the firm's activities toward sustainable performance (Nguyen et al., 2021). Similarly, Hristov et al. (2021) indicate that a sustainable corporate strategy can enhance the well-being of the entire stakeholders, which in effect can lead to higher sustainability performance. As has been stated earlier, some governance and sustainability performance studies have mostly focused on investigating the direct correlation between either firms' governance and sustainability performance (Hussain et al., 2018; Naciti, 2019; Tjahjadi et al., 2021) or between firm's environmental performance and financial performance (Aigbedo, 2021). However, the main limitation of these studies is that they fail to consider the mediating effect of corporate strategy on this correlation. For instance, both agency and stakeholder theories postulate that implementing good corporate governance structures can enhance a firm's strategy toward stakeholders' social and environmental needs, which in turn can influence the firm's sustainability performance (Nguyen et al., 2021; Al-Shaer et al., 2023). In that sense, the higher the degree of firms' governance engagement toward corporate strategy orientation, the higher the firms' sustainable performance is enhanced (Tiep Le & Nguyen, 2022; Al-Shaer et al., 2023).

Theoretically, a good corporate governance structure, particularly board members' roles and functions can connect the firm to its external environment by way of networking (Pfeffer & Salancik, 1978), particularly the outside and gender board members, to provide access to strategic resources that the firm depends upon, as their contribution to the strategic decision making to enhance performance (Pfeffer, 1972).

Despite the seemingly conflicting theoretical argument regarding corporate governance, specifically boards' involvement in strategy (Castellanos & George, 2020), an implementation of good corporate governance structures can enhance board members' monitoring activities about firms' strategies that might positively influence a firm's environmental and social performance outcomes. Based on the agency theory perspective, a number of studies (Ben Barka & Legendre, 2017; Nahum & Carmeli, 2020) document that the board of directors' strategy involvement in the firms' decision-making can enhance the board's legitimate power to direct

management activities to be aligned with shareholder and other stakeholders interests together, which in turn can enhance the firm's sustainability performance.

For this study, the aim is to investigate whether companies that demonstrate greater corporate governance systems have more actions on sustainability performance via corporate strategy. A corporate strategy that the firm accepts in response to external ecology and social issues changes and improves competitive advantage while having a great influence on firms' performance outcomes (Navissi et al., 2017; Habib & Hasan, 2019). Prior studies have supported the positive association between corporate governance and sustainability performance (Arora & Dharwadkar, 2011; Hussain et al., 2018). For this reason, we argue that once corporate governance can influence strategy orientation, corporate strategy and sustainability performance can be positively linked. This argument affirms Al-Shaer et al.'s (2023) suggestion that firms should shape their governance structures in line with their corporate strategies, as well as stakeholder expectations. Based on theoretical arguments that strategy alleviates financial constraints as a result of attracting external resources, corporate managers are willing to undertake a strategy to ensure sustainable development (Dalwai & Salehi, 2021; Liu & Kong, 2021). Accordingly, the mediating role of the corporate strategy is proposed in this study to explain how the firm's corporate governance structures influence sustainability performance. From the foregoing arguments, our second and third hypotheses are given below:

H2: There is a positive and significant relationship between corporate governance (CG) and corporate strategy (CSTR).

H3: Corporate strategy (CSTR) mediates the nexus between corporate governance (CG) and sustainability performance (SP) of firms in SSA.

3. RESEARCH METHODOLOGY

This study consists of data from 126 listed non-financial firms in SSA based on the African Governance Index Report, a Mo Ibrahim Foundation African Governance Ranking 2012 to 2021. The representative countries are Mauritius, Botswana, South Africa, Ghana, Kenya, Nigeria, and Tanzania and their selections were based on three factors: 1) ranked among the best 20 in governance score, 2) English as their spoken language, and 3) availability of data on the key variables of interest. Similarly, the sampled companies for this study were drawn from the African Markets website (<https://www.african-markets.com/en/>) relative to these sampled countries and also based on the companies' minimum capitalisation. Banks and other financial firms were left out of the sample on the basis that they have divergent natures of operations and capital structures.

3.1. Sustainability performance index (SPINDEX)

The study used a sustainability performance index (SPINDEX) as a dependent variable which was developed based on the existing sustainability performance indicator items identified in the GRI G4 guidelines (GRI, 2013). The comprehensive index built for this study is based on the content analysis

of GRI (2013) reports of the companies selected for this study and the criteria are as follows: 1) examination of GRI G4 guidelines to identify those that fall within those usually reported by the sampled firms, in order to select those relevant for the inclusion in this study's index and 2) the items gathered should be reported in the sampled companies' annual reports. Finally, an index consisting of 85 information items, comprising 32 environmental items, 32 social issues, and 21 economic items was built to proxy for the sustainability performance. In line with previous works (Elmagrhi et al., 2016; Alnabsha et al., 2018; Zaid et al., 2020; Tjahjadi et al., 2021), the approach led to the development of an index to measure the level of sustainability performance. Subsequently, we employed a binary scale to measure the index, 1 for the items indicated on the companies' annual reports and financial statements and 0 if not indicated on the firms' annual reports within the period 2012 to 2021.

The GRI data source used for this study refers to the set of standard guidelines that provide a framework for sustainability performance reporting, which covers a varied array of environmental, social, and economic indicators. These guidelines are employed by companies across the globe to report their sustainability performance and impacts. The standard covers topics, among others, such as climate change, human rights, corruption, labour practices, customer health and safety, emissions, energy, employment, and occupational health and safety. The foremost advantages of the GRI sustainability guidelines stem from their completeness, their multi-stakeholder approach, as well as their global recognition.

3.2. Construction of corporate governance score (GOV-SCORE)

This study constructed a corporate governance score (GOV-SCORE) to represent the independent variable in line with Brown and Caylor's (2006) approach. Brown and Caylor (2006) employed the Institutional Shareholder Services (ISS) data to create a summary score, referred to as GOV-SCORE for measuring the strength of corporate governance. The current study adapted the GOV-SCORE of Brown and Caylor (2006) to measure corporate governance. The score items for this study comprised 49 factors made up of 7 categories, namely audit, board of directors, bylaws, director education, director and executive compensation, ownership, and progressive practices. The 49 items were gathered from the listed companies' annual reports for the study period to build a summary governance index, GOV-SCORE. For the 49 elements, each is coded 1 if the firm's governance is mirrored to be minimally acceptable, otherwise 0. The GOV-SCORE is selected because it is wider in scope for measuring governance and covers more firms (Ghoul et al., 2017).

3.3. Corporate strategy score (CSTR-SCORE)

This study employed a computation of a discrete composite measure for the CSTR to represent the mediating variable. This study's strategy composite measure (in this study referred to as

CSTR-SCORE) was computed to reflect diverse aspects of strategic orientations. In similar studies by Bentley et al. (2013) and Higgins et al. (2015), these ratios were employed to capture and reflect the diverse components of a firm’s strategy, namely 1) R&D ratio, 2) employees to sales (EMP/sales) ratio, 3) annual percentage change in sales (YR2-YR1 sales/YR1 sales), 4) net property, plant and equipment to total assets (NPPE/TA) ratio, 5) selling, general and administrative expenses to sales (SGA/SA) ratio, and 6) standard deviation of a total number of firm employees (STDFEPL).

Our study adapted these ratios to compute the CSTR composite score (*CSTR-SCORE*) as a proxy for the mediating variable, corporate strategy. The *CSTR-SCORE* was constructed by classifying each of the indicators to form quantiles within the industry year in relation to other firms within the same year. These indicators are assigned values in order (6, 5, 4, 3, 2, and 1) from high to low quantiles, while observations in the lowest to top quantiles are allocated the values 1, 2, 3, 4, 5, and 6). Finally, the quantile values of these indicators’ company year are summed up to arrive at a score of

maximum (minimum) CSTR for each firm-year observation. In line with Bentley et al. (2013), companies are then coded one (1) if they fall inside their strict score if not zero (0).

3.4. Control variables

In this study, several control variables are also added to the main explanatory variable(s) so as to mitigate against potential omitted variables (Ntim & Soobaroyen, 2013; Nyakurukwa, 2021). The first set of control variables relates to the firm level, which includes total assets as the size of the firm, leverage, firm age, liquidity, sales growth, and profitability. These variables have been included in this study model based on their validity and following previous studies (Boesso et al., 2017; Li & Chen, 2018; Hussain et al., 2018; Nyakurukwa, 2021). The other set of control variables comprises industry effect and the gross domestic product (GDP) per capita income employed to control for inherent cross-country effects. The measures for these variables are shown in Table 1.

Table 1. Measurement of control variables

<i>Variable</i>	<i>Mnemonics</i>	<i>Measurement</i>
Total assets	<i>LNTA</i>	The logarithm of total assets’ end-year values
Leverage	<i>LEV</i>	The ratio of total debts to total equity
Liquidity	<i>LIQ</i>	Total current assets divided by total current liabilities
Firm age	<i>FAGE</i>	The logarithm of the number of years since the firm was established
Sales growth	<i>SGROWTH</i>	Change in sales for the current and previous years
Profitability	<i>PROFIT</i>	Profit for the year before interest and tax divided by total assets
Industry	<i>IND</i>	A manufacturing company (1) versus a service company (0)
GDP per capita income	<i>GDPPCI</i>	Gross domestic product per capita income

3.5. The mediating role of corporate strategy in corporate governance–sustainability performance nexus

A mediation relationship refers to one in which the independent variable causes the mediator, which in turn causes the dependent variable (Fairchild & MacKinnon, 2009). In that sense, a “mediated effect” is usually denoted as an “indirect effect” because this symbolises the effect of the explanatory variable on the outcome variable’s effect through the mediator variable (Maali et al., 2021). Thus, indicating an indirect rather than a direct relationship. Baron and Kenny (1986) have made a proposition that a variable “functions as a mediator when variations in the independent variable significantly account for the variations in the mediator variable, and variations in the mediator significantly account for variations in the dependent variable” (p. 1176). Based on the literature (Fairchild & MacKinnon, 2009; Maali et al., 2021), the mediation effect is tested as follows: first, sustainability performance (SP) is regressed on the corporate governance (CG), second, CSTR is regressed on CG and lastly, SP is regressed on both CG and CSTR. To establish mediation, CG must affect CSTR. In effect, CG needs to be shown to

affect SP, as well as CSTR needs to affect SP. Once the effects of these scenarios are positive and significant, then the effect of CG on SP needs to decrease if CSTR affects SP. If the effect of CG is zero after CSTR is controlled, then there is perfect mediation.

3.6. Empirical model and estimation techniques

A simple mediation model that uses 3 variables, consisting of one explanatory (independent) variable (X), one mediator (M), and one dependent (outcome) variable (Y). The essence is to offer a technique for examining mediation that specifies 3 regression equations that are in line with Maali et al.’s (2021) approach. The association between X, M, and Y is indicated as a path diagram as shown in Figure 1. The correlation between CG and SP is mediated by CSTR. For this study, *GOV-SCORE* is the explanatory variable (X), *SPINDEX* is the dependent variable (Y) and *CSTR-SCORE* represents the mediator (M). Against this backdrop, the assumption of the role of the CSTR variable in mediating the effects of CG on SP consists of 3 equations for investigation, namely:

Step 1: The relationship between the independent variable (*GOV-SCORE: X*) and the dependent variable (*SPINDEX: Y*).

$$SPINDEX_{it} = \beta_0 + \beta_1 GOV - SCORE_{it} + \beta_2 TA_{it} + \beta_3 LEV_{it} + \beta_4 FACE_{it} + \beta_5 LIQ_{it} + \beta_6 SGROWTH_{it} + \beta_7 PROFIT_{it} + \beta_8 IND_{it} + \beta_9 GDPPCI_{it} + \epsilon_{it} \tag{1}$$

Step 2: The relationship between the independent variable (*GOV-SCORE: X*) and the mediator (*CSTR-SCORE: M*):

$$CSTR - SCORE_{it} = \beta_0 + \beta_1 GOV - SCORE_{it} + \beta_2 TA_{it} + \beta_3 LEV_{it} + \beta_4 FACE_{it} + \beta_5 LIQ_{it} + \beta_6 SGROWTH_{it} + \beta_7 PROFIT_{it} + \beta_8 IND_{it} + \beta_9 GDPPCI_{it} + \varepsilon_{it} \quad (2)$$

$$SPINDEX_{it} = \beta_0 + \beta_1 GOV - SCORE_{it} + \beta_2 CSTR - SCORE_{it} + \beta_3 TA_{it} + \beta_4 LEV_{it} + \beta_5 FACE_{it} + \beta_6 LIQ_{it} + \beta_7 SGROWTH_{it} + \beta_8 PROFIT_{it} + \beta_9 IND_{it} + \beta_{10} GDPPCI_{it} + \varepsilon_{it} \quad (3)$$

where,

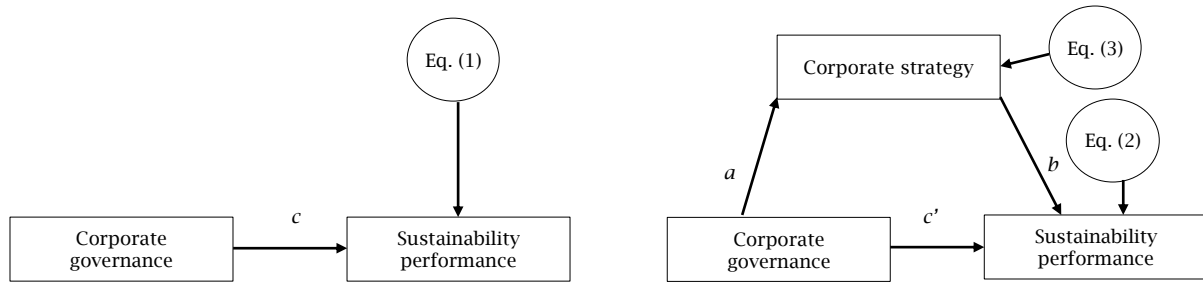
- *SPINDEX* is the sustainability performance index;
- *GOV-SCORE* is the corporate governance score;
- *CSTR-SCORE* is the corporate strategy score;
- *TA* is total assets (natural logarithm) for firm size;
- *LEV* is leverage;
- *FAGE* is firm age (natural logarithm);
- *LIQ* is liquidity;
- *SGROWTH* is sales growth;
- *PROFIT* is profitability;
- *IND* is industry;
- *GDPPCI* is gross domestic product per capita income;

Step 3: The complex association between *GOV-SCORE (X)*, *CSTR-SCORE (M)*, and *SPINDEX (Y)*:

- ε is error terms;
- i, t firm and time dimensions, respectively.

It should be emphasised that there could be an alternative method suitable for conducting this research. For instance, structural equation modelling (SEM) is another alternative method appropriate for conducting this study as it is considered suitable for analysing mediating effects. However, based on the objective and the data used, the above methodology in line with Maali et al.'s (2021) approach is employed as appropriate for analysing the mediating role of CSTR in the CG-SP link.

Figure 1. Illustration of mediation model using a path diagram



4. RESULTS AND ANALYSIS

4.1. Descriptive statistics

Table 2 indicates the summary statistics for the outcome variable, the explanatory variable, the mediating variable, as well as the control variables. The average value of SP is 0.6403, as well as the standard deviation is 0.1357. The maximum value of 0.9176 for SP against its minimum of 0.2001 indicates the existence of many variances.

The mean value of CSTR is 0.7525, while the maximum and minimum values are 1.0612 and 0.5306, respectively. CG does not vary extensively across countries and companies. The mean value of CG for the listed firms in SSA is 2.8863, and the standard deviation is 3.5644. In general, companies are partially oriented to strategy, coupled with their governance structures to shape sustainability performance during the sampling period.

Table 2. Descriptive statistics

Variable	Obs.*	Mean	Std. Dev.	Median	Min	Max
<i>SPINDEX</i>	1260	0.6403	0.1357	0.6471	0.2001	0.9176
<i>GOV-SCORE</i>	1260	2.8863	3.5644	2.2081	0.5447	62.9837
<i>CSTR-SCORE</i>	1260	0.7525	0.0730	0.7551	0.5306	1.0612
<i>LNTA</i>	1260	6.5831	1.3128	6.7250	3.2235	9.51
<i>LEV</i>	1260	-0.3714	0.3295	-0.2974	-2.328	0.1901
<i>LIQ</i>	1260	0.1173	0.3328	0.1149	-1.9130	1.2706
<i>FAGE</i>	1260	1.5938	0.3041	1.6435	0.3010	2.1206
<i>SGROWTH</i>	1260	1.0132	0.5468	1.0952	-3	2.3807
<i>PROFIT</i>	1260	-1.0467	0.5034	-1.0009	-3.2218	0.9609
<i>GDPPCI</i>	1260	3.4905	0.3482	3.3880	2.9785	3.9084

Note: * 126 firms × 10 years.

Liu and Kong (2021) found a mean CSTR of 19.258 for a sample of listed companies over the period from 2007 to 2016. Regarding size, 6.58% of firms possess resources (assets) that can influence sustainability performance. Concerning leverage, 37.14% of the firms are adversely affected by their borrowing costs exceeding the returns

realised from their cash flows. Liquidity indicates that 11.73% of SSA firms are able to meet their debt obligations. Finally, the median values of SP (0.6471) and CSTR (0.7551) are above their respective mean values, which may indicate a negatively skewed distribution.

4.2. Correlations

Table 3 reports the correlations among the variables. As regards the rule of thumb, a correlation value exceeding 0.70 might indicate the existence of a multicollinearity problem (Lui & Kong, 2021). The correlation outcomes for this study show a higher correlation coefficient of 0.6324 between

CG and SP and it is also below the above-mentioned threshold. Generally, there exists a positive and significant correlation between CG and SP, suggesting that CG influences SP. Additionally, a significant and positive association ($\beta_1 = 0.0309$) between CSTR and SP has been recorded, which implies that high SP companies are expected to have more orientations toward CSTR.

Table 3. Correlation matrix

Variable	SPINDEX	GOV-SCORE	CSTR-SCORE	LNTA	LEV	LIQ	LNFAGE	SGROWTH	PROFIT	GDPPCI
SPINDEX	1									
GOV-SCORE	0.6324	1								
CSTR-SCORE	0.0309	-0.0017	1							
LNTA	-0.1478	-0.0382	0.0441	1						
LEV	-0.0162	0.1145	-0.4477	0.0696	1					
LIQ	0.1002	0.0432	0.3433	-0.0893	-0.2412	1				
LNFAGE	0.1216	0.0579	-0.1597	-0.2383	0.15	0.0513	1			
SGROWTH	0.0395	0.0385	-0.0207	0.0215	-0.113	0.0200	-0.0449	1		
PROFIT	0.0804	0.0455	-0.0363	-0.1427	-0.0848	0.0518	0.111	0.0999	1	
GDPPCI	0.1600	0.0124	0.1065	-0.1677	-0.2039	0.117	-0.1107	0.0331	0.109	1

Note: SPINDEX = sustainability performance index (dependent variable), GOV-SCORE = corporate governance score (independent variable), CSTR-SCORE = corporate strategy score (mediator variable), TA = total assets (firm size), LEV = leverage, LIQ = liquidity, FAGE = firm age, SGROWTH = sales growth, PROFIT = profitability, GDPPCI = GDP per capita income.

4.3. Multicollinearity

Furthermore, computed variance inflation factors (VIFs) were employed to check the existence or absence of multicollinearity. Table 4 shows that the highest detected value for VIF is recorded as 1.40, which is lower than the 10.0 limit suggested by Chatterjee and Hadi (2013). Accordingly, we conclude that further analysis was not affected by multicollinearity.

Table 4. Multicollinearity test

Variable	VIF	1/VIF
CSTR-SCORE	1.40	0.712171
LEV	1.38	0.724032
LIQ	1.18	0.847301
LNFAGE	1.15	0.872677
LNTA	1.13	0.884307
GDPPCI	1.10	0.907318
PROFIT	1.06	0.942947
SGROWTH	1.03	0.966889
GOV-SCORE	1.03	0.971306
Mean VIF	1.13	

4.4. Regression analysis

To examine the intervening effect, this study employed Baron and Kenny's (1986) approach and Bootstrap's (Preacher & Hayes, 2004) method to investigate the statistical significance of the direct and indirect effects of the association between CG and SP.

Step 1: Examine the direct connection between CG and SP. As shown in Table 5, the result reveals a positive ($\beta_1 = 0.5873$) and a statistically significant correlation between CG and SP at a 1% level. This finding indicates the total effect (path c) which was hypothesised that CG positively affects SP significantly. Thus, *H1* is supported. The implication is that an increase in CG mechanisms by one unit will cause SP to increase by 0.5873 units. For instance, the positive coefficient of the total effect means that higher levels of CG in the non-financial listed firms result in higher SP. In general, the first condition based on Baron and Kenny's (1986)

approach has been checked, which has proved significant and a positive association.

Step 2: Examine the link between CG factors and CSTR. As regards step 2, Table 6 portrays a positive and significant correlation ($\beta_1 = 0.6345$; $t = 6.42$) between CG and CSTR. This result depicts path *a*, which predicts a positive and significant correlation between CG and CSTR. Accordingly, *H2* has been supported. This implies that an increase in the firm's governance factors by one unit will result in 0.6345 units in corporate strategy. By implication, firms that exhibit greater CG mechanisms are connected with a greater CSTR.

Table 5. Corporate governance effect on sustainability performance variable

Variable	SPINDEX (Step 1)
GOV-SCORE	0.5873 (6.13)***
LNTA	0.0100 (1.88)*
LEV	-0.0037 (-0.33)
LIQ	0.0030 (0.36)
LNFAGE	0.0051 (0.07)
SGROWTH	0.0051 (1.18)
PROFIT	0.0034 (0.64)
GDPPCI	0.1112 (2.58)***
Constant	-0.4848 (-0.77)
Firm fixed effect	Yes
Year fixed effect	Yes
R-Square	0.7194
F-Statistics	0.0000
No. of observations	1260

Note: *, **, and *** indicate 10%, 5%, and 1% levels, respectively. T-statistics are in the parenthesis.

Step 3: Estimating the mediating effect of CSTR on the association between CG and SP. In this perspective, it is expected that strategy affects SP, but CG to no longer affect SP, or CG to still affect SP but on a smaller magnitude. This implies that once mediation exists, the effect of CG on SP should disappear or at least weaken, once CSTR (mediator variable) is included in the regression. Thus, the effect of CG on SP goes through CSTR. In addition, the theory of mediation indicates that there is a causal relationship in a mediation model, in the sense that *X* (CG) causes *M* (CSTR) and *M* (CSTR) causes *Y* (SP).

Table 6. Corporate governance effect on corporate strategy variable

Variable	CSTR-SCORE (Step 2)
GOV-SCORE	0.6345 (6.42)**
LNTA	0.1750 (0.32)
LEV	-2.4674 (-2.79)**
LIQ	3.3231(5.13)***
LNFAGE	15.2968 (4.45)***
SGROWTH	-0.1028 (-1.84)
PFOFT	-0.1960 (-2.22)**
GDPPCI	-5.6941 (-2.06)
Constant	-0.0441 (-0.01)
Firm fixed effect	Yes
Year fixed effect	Yes
R-Square	0.2530
F-Statistics	0.0000
No. of observations	1260

Note: *, **, and *** indicate 10%, 5%, and 1% levels, respectively. T-statistics are in the parenthesis.

Consequently, the mediated effect of CG to SP through CSTR can be measured (quantified) as the product of the regression coefficient connecting CG to CSTR and the regression coefficient connecting CSTR to SP, thus *a* and *b*. The results in Table 7 show that the coefficient of CG ($\beta = 0.0436$) which specifies the direct effect (path *c'*) is positive but statistically insignificant. Consequently, firms with effective governance factors and corresponding strategies are predicted to be 0.0436 units higher in sustainability performance. The path *b* coefficient (0.8569), however, is found to be positive and statistically significant at the 0.01% level after the CSTR was included in the full model. According to Zhao et al. (2010), there is no need for the direct effect to be statistically significant, therefore the estimation of the mediation effect of the corporate strategy proceeded.

Table 7. Mediation effect of corporate strategy on the association between corporate governance and sustainability performance

Variable	SPINDEX (Step3)
GOV-SCORE	0.0436 (0.39)
CSTR-SCORE	0.8569 (9.31)***
LNTA	0.0100 (1.88)*
LEV	-0.0046 (-0.41)
LIQ	0.0043 (0.52)
LNFAGE	0.0134 (0.17)
SGROWTH	0.0051 (0.25)
PFOFT	0.0034 (0.63)
GDPPCI	0.1134 (0.59)
Constant	-0.4423 (-0.70)
Firm fixed effect	Yes
Year fixed effect	Yes
R-Square	0.7195
F-Statistics	0.0000
No. of observations	1260

Note: *, **, and *** indicate 10%, 5%, and 1% levels, respectively. T-statistics are in the parenthesis.

The indirect (mediation) effect of CSTR which is the product of path *a* and path *b* ($0.6345 * 0.8569$) on the association between the CG and SP of listed non-financial firms resulted in positive (0.5437) and statistically significant at a 5% level. Hence, *H3* that CSTR mediates the impact of CG on SP levels of firms in SSA was supported. This is at variance with Kim and Oh's (2021) argument that full mediation rarely occurs in practice. However, this result suggests that corporate strategy mediates between corporate governance and firms' sustainability performance. This positive mediation implies that there exists a tendency for the non-financial listed firms with effective corporate governance to engage more in corporate strategy that might translate into increased sustainability performance.

The bootstrapping procedure (Table 8) checks the mediating role of CSTR in the relationship between CG and SP, thus confirming our hypotheses.

Table 8. Mediation of the association between corporate governance and sustainability performance (robustness check)

Effect relationship	Estimate	95% CI lower	95% CI upper	P-value
Mediation (indirect) effect	0.5437	0.3287	0.8069	0.0221
Direct effect	0.0436	0.0264	0.6470	0.5531
Total effect	0.5873	0.3550	0.8716	0.0001

Note: Mediation effect ($a * b$) = $0.6345 * 0.8569$. Total effect ($0.5437 + 0.0436$).

5. DISCUSSION

The objective of this study is to investigate whether corporate governance affects sustainability performance and whether corporate strategy mediates this relationship. The first step of the study seeks to examine the total effect of corporate governance on sustainability performance. The finding has discovered an important role played by corporate governance in the positive direction toward effective decisions to guarantee sustainable performance. This outcome finds support from previous research into this brain space that is noted for linking corporate governance and sustainability performance. For instance, Sar (2018) suggests that firms with greater corporate governance guidance are related to superior sustainability performance. The findings of this study are further supported by Arora and Dharwadkar (2011), Michelon and Parbonetti (2012) as well as Shrivastava and Addas (2014), as they indicate that corporate governance

plays a significant role in making effective decisions regarding sustainability practices. Maali et al. (2021) add that the efficacy of corporate governance is equally related to enhanced monitoring of management towards environmental and social performance and might therefore have a sturdy influence wholly on sustainability performance. Awodiran (2019) documents that corporate governance elements improve sustainability performance. From that perspective, several possible explanations can be suggested. The effectiveness of corporate governance is associated with monitoring a firm's environmental and social activities which might have a strong impact on sustainability performance. For example, firms with more independent members on the board which is also noted for selected corporate social responsibility (CSR) committee presence, sustainability committee that meets more frequently, as well as more women on the board are capable of monitoring decisions by management with regard to social and environmental issues.

The results further confirm Nasrallah and El Khoury's (2022) claim that effective corporate governance results in better firm performance, and that well-performing companies tend to improve sustainability performance. Similarly, once companies are committed to good corporate governance practices, their stakeholder relations can be improved and in turn may foster corporate sustainability (Michelon & Parbonetti, 2012). The study also finds that firm size (*LNTA*) and sustainability performance are positively and significantly associated ($\beta_2 = 0.0100$) at the level of 1%. This result indicates that firms with high sizes demonstrate sustainability performance. The study's findings similarly show that the regression coefficient of GDP per capita income (*GDPPCI*) is positively and significantly related to sustainability performance. This suggests that firms' performance outcomes may reflect the income level of their respective countries. The second step of the study examines the relationship between corporate governance and corporate strategy, as a dependent variable. The result indicates a positive correlation between corporate governance and corporate strategy which corroborates that of Li et al. (2021) result, as they demonstrate that strategies can mitigate over-investment even in highly socially and environmentally responsible firms, thus ensuring sustainable performance. This finding also corroborates the finding of Liu and Kong (2020) who established a significant link between corporate governance and strategy score in the sample companies over the period from 2007 to 2016. This finding also confirms Feng's (2017) finding that firms usually emphasise proper internal and external governance mechanisms to improve strategy orientations.

The third and final step examines how corporate strategy mediates the association between corporate governance and sustainability performance. Thus, testing the direct and indirect relationships between corporate governance and sustainability performance in the presence of corporate strategy, as an intervening variable. The finding confirms that corporate strategy mediates between corporate governance and companies' sustainability performance. The positive correlation between corporate strategy and sustainability performance (based on path *b*) is supported by Haanaes and Olync (2016), as they indicate that firms' strategy and sustainability effects should be aligned. This finding could be explained by the indication that the direction of anticipated relationships with enhanced corporate governance increases corporate strategy and further expands sustainability performance effectiveness. The implication is that in running corporate governance, it is important to always pay attention to the firms' long-term sustainability performance (Maali et al., 2021). Haanaes and Olync (2016) further indicate that corporate governance is often critical in corroborating with important stakeholders as a strategy to influence sustainability performance. This assertion is in line with agency and stakeholder theories' contentions and is supported by empirical findings (Park, 2023), which indicate that corporate strategy remains indispensable in corporate sustainability initiatives.

The study's outcomes demonstrate that an active corporate strategy plays an intermediary role in enhancing the firm's governance structure and thus improving sustainability performance. Theoretically, companies that demonstrate better corporate strategies are able to conduct their business in a manner considered ethical, socially acceptable, and beneficial to the community which can promote sustainability performance (Marcon Nora et al., 2023). Generally, our findings collectively show that strategy fully mediates the association between corporate governance and Sustainability performance. In all, our results suggest that the existence of strong corporate governance structures can play an essential role in leading corporate commitment toward a corporate strategy that can enhance responsible sustainability performance.

6. CONCLUSION

In this study, the direct influence of corporate governance effectiveness on sustainability performance was investigated. Furthermore, the indirect effect of corporate governance effectiveness on sustainability performance through corporate strategy was examined as the main objective of the study. Based on a sample consisting of Sub-Saharan African countries over the 2012 to 2021 period, the results indicate initially that corporate governance positively influences sustainability performance. In addition, corporate strategy fully mediates the effect of corporate governance characteristics on sustainability performance.

From a theoretical viewpoint, this study contributes to the extant literature by testing the mediating effect of corporate strategy. On the theoretical level, this study contributes to the enhancement of two issues. The study investigated the literature dealing with explanatory factors of corporate strategy orientation. The study examined the connection between corporate governance characteristics, sustainability performance, and corporate strategy, taking into consideration the agency and stakeholder theories. The findings largely are in support of the complementary theoretical assertions of the agency and stakeholder theories concerning the role that corporate strategy plays in enhancing the CG-SP link. For instance, the stakeholder theory suggests that the company's governance structures and sustainability activities should be aligned with stakeholder goals, which in turn can influence firms' decisions on environmental and social strategies (Nguyen et al., 2021).

Regarding the methodological aspect, this study's contributions involve the creation of the corporate governance score as well as the sustainability index in the Sub-Saharan African context. Also, the literature contrasts the direct effect of governance characteristics on sustainability practices. Nonetheless, this study checked the direct and indirect effect of these governance characteristics on sustainability performance via corporate strategy engagements. To the best of our knowledge, this study is one of the first to test the meaning of corporate governance mechanisms on sustainability practices based on the intervening effect of corporate strategy in emerging countries such as those in Sub-Saharan Africa. The findings exhibit policy implications for managers and regulators alike.

From the managerial viewpoint, the managers of the companies will be aided in understanding those corporate governance aspects that are essential for long-term value creation regarding ecological, social, and economic performance engagements. In addition, managers will appreciate the need to align their company strategy to sustainability efforts so as to foster company longevity. Regarding policymakers, the regulators should evaluate their countries' legal systems in addition to their actual corporate governance mechanisms before mandating additional governance mechanisms in their country. By implication, policymakers are made to consider the fact that corporate governance mechanisms are costly ingenuities, hence requiring real commitment as well as prioritisation. Similarly, regulators can improve CG effectiveness and corporate strategy engagements. In effect, the empirical findings of this study provide a solution to the question about both the direct and indirect association between corporate governance, corporate strategy, and sustainability performance.

The objective of the study is considered to have been achieved successfully. However, the limitations should be highlighted, which can be addressed by future researchers. First, the fact that this study covers only listed and large companies in selected African countries implies that the results are not generalisable to all countries in Sub-Saharan Africa

as well as the smaller companies. Hence, future studies should include medium-sized firms and also expand the countries to improve the research design.

Second, the lack of standardised and/or systematic corporate strategy and sustainability measurements for other groups of companies imposes certain restrictions on the generalisability of the findings (beyond the largest Sub-Saharan African firms). The study is also limited to examining the mediating effect of corporate strategy in the association between corporate governance and environmental, social, and economic performance. Therefore, future studies can offer new insights by including other intervening and interaction variables such as corporate social responsibility, technology, and market orientation.

Lastly, the industry effect was controlled using dummy variables for manufacturing versus service companies. Future studies may consider applying Global Industry Classification Standard (GICS). Notwithstanding the aforementioned limitations, the study makes contributions to the existing literature by providing an empirical indication that corporate governance effectiveness influences sustainability performance via a firm's strategy. Therefore, the outcomes of the study highlight one key mechanism that could expound on how the existence of a firm's strategy affects the company's sustainability performance.

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