RESEARCH ARTICLE

Sustainable banking initiatives, environmental disclosure and financial performance: The moderating impact of corporate governance mechanisms

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Abstract

This paper contributes to the sustainable development in business literature by examining the impact of a broad corporate governance disclosure index on sustainable banking initiatives and, subsequently, determines the extent to which the sustainability-for-performance sensitivity metric is moderated by corporate governance mechanisms. Based on data collected from 220 banks in 16 Sub-Saharan Africa countries over the 2007–2018 period (i.e., making over 2027 bank-year observations), the findings of the study are as follows: Firstly, the study finds that corporate governance mechanisms have positive impact on sustainable decisions, as captured by environmental disclosures and sustainable banking initiatives. Secondly, the study finds that sustainable banking initiatives improve the financial performance of banks in the Sub-Saharan African countries. Finally, the study detects that the relationship between sustainable banking initiatives and financial performance is significantly moderated by corporate governance mechanisms, revealing that the sustainability-for-performance sensitivity metric is mainly positive, and improves in banks with quality corporate governance mechanisms. This indicates that the sustainability-for-performance sensitivity is contingent on the quality of the bank's corporate governance structures. The findings have key implications for banking practitioners, environmental activists, regulators and policymakers.

KEYWORDS
corporate governance, environmental protection management, financial performance, stakeholder engagement, sustainable banking initiatives, sustainable development

1 | INTRODUCTION

This paper investigates the interrelationships among broad corporate governance (CG) mechanisms, sustainable banking disclosure (*SBD*), environmental disclosure (*ENVD*) and financial performance (*FP*) in Sub-Saharan Africa (SSA) banks. To gain more insight, the study distinctively explores the moderating impact of broad corporate

governance disclosure index (*CGDI*) on the sustainability-for-performance sensitivity (*SPS*). The empirical investigation is mainly informed by theoretical insights drawn from agency theory (*AT*), stakeholder theory (*SHT*), resource dependence theory (*RDT*) and neo-institutional theory (*NIT*) (Adu et al., 2022; Frynas & Yamahaki, 2016; Haque & Ntim, 2020; Mellahi et al., 2016; Ntim & Soobaroyen, 2013).

Global attempts that seek to minimize climate change through the design and adoption of sustainable corporate strategies have deepened over the past three decades (Baboukardos, 2018; Chithambo et al., 2022; Cosma et al., 2021; Huiskamp et al., 2022). For instance, policymakers and various governments are increasingly exhibiting greater concern about the risks of a severe climate crisis on the environment. In response to these challenges, national governments and supra-national bodies are displaying growing concern in attending to these risks by instituting a number of sustainability policies (Adu et al., 2021; Baboukardos, 2018; Marrucci et al., 2022). The UN has a well-defined sustainable development policy centred on 17 broad 'Sustainable Development Goals' (SDGs), with 2030 set as the time limit for achieving them. To attain the SDGs, there are calls for banks to adopt and implement sustainable business initiatives (Adu, 2021; Adu et al., 2022; Nwagwu, 2020).

Moreover, more than a decade after the start of the financial crisis, the banking sector continues to face key challenges with rebuilding trust and increasing their engagement with clients, customers, employees and other stakeholders (UNEP-FI, 2020). Therefore, it has been suggested that, for the banking sector to rebuild trust and effectively engage with its stakeholders, the sector needs to redefine and affirm its role and responsibilities in shaping and financing a sustainable future (UNEP-FI, 2020). For example, for the banking sector to continue to play a pivotal role in the 21st century, the sector has to demonstrate how it is meeting society's changing needs and demands (Adu, 2021; UN Global compact, 2020; UNEP-FI, 2020). Arguably, one way by which the banking sector may achieve this is through sustainable banking or responsible banking initiatives (Adu et al., 2021; UN Global compact, 2020).

The *SPS* metric can be explained from different theoretical perspectives. Firstly, *AT* focuses on the strategic ability of banks to exploit internal resources in the quest for sustainable competitive advantage (Frynas & Yamahaki, 2016). Specifically, *AT* maintains that the quality of governance in banks may influence its sustainable banking initiatives and *FP*. In brief, *SHT* and *RDT* concentrate on the economic benefits that banks may obtain by engaging in sustainable initiatives. Finally, *NIT* posits that banks may gain social legitimacy by voluntarily adopting and/or complying with recognized institutional standards, rules and norms (Scott, 2001).

Following prior studies (Adu et al., 2021; Gangi et al., 2019; Gupta & Bala, 2020), this study adopts a multi-theoretical framework because the ability of any one of the individual theories to completely capture the interrelationship among broad CG mechanisms, sustainable banking initiatives and *FP* is limited. In particular, Elmagrhi et al. (2019) suggest that it is important for researchers to employ a multi-theoretical framework by adopting insights from different theories in order to deepen the investigation. More importantly, with

exception of *NIT* (that suggests positive or a negative impact), the adoption of multi-theoretical framework can improve the explanatory power of the theories by complementing each other with regard to their strengths and weakness (Adu, 2021; Elmagrhi et al., 2019). Moreover, the study investigates the complex interrelationships among broad CG mechanisms, sustainable banking initiatives and *FP*, which intrinsically involves various organizations and stakeholders with diverse interests. Hence, the study maintains that the above multi-theoretical framework is the most appropriate theoretical framework that can adequately capture these complex interrelationships.

A systematic review of literature concerning the *SPS* metric reveals that studies examining the association between sustainable banking initiatives and *FP* in emerging economies are not only uncommon (Orazalin, 2019; Platonova et al., 2018; Siueia et al., 2019) but also suffer from a number of limitations. Firstly, although prior studies suggest that the quality of CG structures can enhance sustainable corporate decisions, including those relating to engagement in sustainable initiatives (e.g., Adu, 2021; Ntim & Soobaroyen, 2013), existing banking studies have focused on examining the effect of individual CG variables (e.g., board independence, board size and board meetings) on sustainable banking initiatives (e.g., Barako & Brown, 2008; Khan, 2010; Orazalin, 2019). However, it has been suggested that CG is a complex concept to operationalize and thus the use of individual CG variables such as board independence and board size may not be valid proxies for the complex concept of CG that the researchers seek to measure (Adu et al., 2022; Elmagrhi et al., 2020; Larcker et al., 2007). In particular, Larcker et al. (2007) maintain that there can be potential measurement error that may be associated with the use of individual CG variables. The authors maintain that such measurement errors can lead to inconsistent regression coefficients. In order to resolve the potential measurement errors with the use of single CG variables, prior scholars call for researchers to rather use broad governance indices that may cover several CG provisions (Adu, 2021; Elmagrhi et al., 2020; Ntim & Soobaroyen, 2013). Accordingly, an increasing number of researchers have recently employed the use of broad CG indices to capture the complex 'governance concept' (Adu, 2021; Adu et al., 2022; Elmagrhi et al., 2020). For example, Adu et al. (2022) and Elmagrhi et al. (2020) employ broad CG index in their study in Africa and the UK, respectively. The authors show that the broad CG index are more reliable and better specified than individual CG variables. Accordingly, this study constructs a broad CG index for SSA banks.

Secondly, prior studies (e.g., Barako & Brown, 2008; Gupta & Bala, 2020), exploring the effect of CG mechanisms on sustainable banking initiatives, have not investigated the possible moderating impact that CG mechanisms may have on the *SPS* metric. This is regrettable because understanding these key interrelationships can assist the board and policymakers to put in place governance structures that will have meaningful impact on sustainable banking initiatives and *FP* of banks. Thus, the study seeks to distinctively investigate the moderating influence of broad governance mechanisms on the *SPS* metric—an extension to previous banking studies that have investigated the direct relationship between individual CG

variables (such as CEO duality, female directors and board independence) and sustainable banking initiatives (Barako & Brown, 2008; Das et al., 2015; Jizi et al., 2014; Orazalin, 2019). Finally, this study employs the under-research context of SSA as there has been several CG reforms in the banking system in these countries over the past 10 years (Adu et al., 2022).

In doing so, the study extends, as well as makes a number of distinct and new contributions to the extant business and environment literature. Firstly, the study contributes to the extant literature by employing broad CG mechanisms covering 100 key CG provisions in the Combined CG Code in the SSA region. Specifically, it contributes to the banking literature by exploring the impact of broad CG mechanisms on sustainable banking initiatives in the banking system in 16 SSA countries. Banking studies that examine the association between broad CG mechanisms and sustainable banking initiatives are scarce, especially in the SSA context. Secondly, the study contributes to banking literature by shedding new light on the impact of broad CG mechanisms on the various components of sustainable banking initiatives including environment, social, health and safety, ethics and human rights, community involvement and employee disclosures.

Thirdly, the study offers new insights on the impact of sustainable banking initiatives and the six various components of sustainable banking initiatives on *FP* as measured by return on assets (*ROA*) and return on equity (*ROE*) in the SSA region. More importantly, it concentrates on post governance and sustainable business practices reforms in the SSA countries which provides a valuable opportunity to explore the *SPS* metric in an emerging market context. Crucially, the study focuses not only the direct impact of broad CG mechanisms on sustainable banking initiatives but also the moderating effect of CG mechanisms on the *SPS* metric. Previous research has not investigated the impact of probable moderator in the association between sustainable banking initiatives and *FP*. In particular, while there are limited studies on CG mechanisms, sustainable banking initiatives and *FP* in the banking sector (e.g., Barako & Brown, 2008; Khan, 2010; Orazalin, 2019), investigation on the *SPS* metric in a single combined empirical framework is yet to be sufficiently investigated in an emerging regions' banking context. Considering that CG mechanisms and sustainable initiatives can act as complements and/or substitutes (Adu, 2021; Ntim & Soobaroyen, 2013), the study distinctively examines whether CG mechanisms can moderate the *SPS* metric.

The rest of the paper is structured as follows: Section 2 provides a background to the study. Section 3 reviews the theoretical literature. Section 4 focuses on the empirical literature and develops hypotheses. Section 5 discusses the data and research methodology. Section 6 provides the empirical results, while the conclusion of the study is provided in Section 7.

2 | CG AND SUSTAINABLE BANKING REFORMS IN THE SSA REGION

The demand to enhance CG practices in the SSA region increased since the late 1990s. This was after the collapse of a number of banks including Nedbank companies in South Africa (Ntim et al., 2019). This period was noticeably characterized by poor transparency and accountability (Ntim et al., 2015). Accordingly, CG reforms in the SSA countries started in 1994, when the well-known King Report of South Africa was issued. The King Report was issued in response to persistent calls for increased accountability and transparency in corporate reporting (Adu, 2021; Ntim & Soobaroyen, 2013). In particular, the SSA countries have been pursuing CG reforms regarding how banks are governed (Ntim et al., 2015).

Manifestly, some of the countries including South Africa, Nigeria, Ghana and Kenya have issued their own governance codes. For instance, the King Report on CG (1994) of South Africa, as well as those relating to Kenya (2002), Nigeria (2003) and Ghana (2010) were all issued to enhance financial reporting. In order to deal with the shortcomings of the initial codes, as well as to incorporate international best practices, revised governance codes have been issued. The revised King Reports (2002, 2010 and 2016) of South Africa, as well as those relating to Ghana (2018), Kenya (2002 and 2014) and Nigeria (2011 and 2018) are all inherently focused on promoting corporate sustainable practices. For instance, the revised codes (hereafter referred to as the Combined Code) have detailed sections on integrated sustainability reporting. The integrated sustainability reporting covers key areas such as the environment, social, health and safety, community involvement, ethics and human rights, and employee disclosures.

In addition, to enhance the quality of CG in the region, the codes focus on four key CG pillars, namely, (i) director and board, (ii) audit, accounting and transparency, (iii) risk management and internal control and (iv) compliance and shareholder enforcement. Thus, the CG and the integrated sustainability reforms in the SSA region provide a unique setting to explore the interrelationships among CG mechanisms, sustainable banking initiatives and *FP* of banks. It should be pointed out that complying with the integrated sustainability guidelines covered in the Combined Code in the region is voluntary (Adu et al., 2022). Hence, the study seeks to examine whether CG mechanisms matter in determining sustainable banking initiatives in the SSA countries and, subsequently, ascertain whether CG mechanisms moderate the *SPS* metric.

3 | THEORETICAL FRAMEWORK

Although there are calls for researchers to employ multi-theoretical framework in explaining the impact of governance mechanisms on environmental and sustainability disclosures, previous studies employ either single theoretical framework or mainly descriptive (Jia & Zhang, 2011; McGuiness et al., 2017). Arguably, the use of single theoretical framework may not adequately capture the impact of CG mechanisms on the *SPS* metric. In responding to the increasingly calls for the adoption for multi-theoretical perspective (Adu et al., 2022; Crossley et al., 2021; Elmagrhi et al., 2019; Frynas & Yamahaki, 2016; Orazalin, 2019; Platonova et al., 2018), this study addresses the limitations of previous research by adopting a multi-theoretical perspective.

Precisely, the investigation of this study is informed by theoretical insights drawn from *AT*, *SHT*, *RDT* and *NIT*.

Firstly, *AT* calls for the design of resourceful contracts and efficient monitoring systems to protect shareholders' interests (Ntim & Soobaroyen, 2013). The theory maintains that CG mechanisms can influence sustainable banking initiatives and *FP*. In brief, *AT* expects CG mechanisms to positively impact on sustainable banking initiatives and *FP* of banks. The theory argues that a net decline in agency costs (monitoring) originating from the establishment of good CG mechanisms can lead to an increase in sustainable banking initiatives and improve the *FP* of banks (Ntim, 2009). The theory offers a crucial channel through which CG mechanisms can moderate the *SPS* metric. *AT* maintains that CG mechanisms can be considered as strong pillars or dimensions of sustainable banking initiatives (Ntim & Soobaroyen, 2013). The implication is that, in better governed banks, corporate executives may seek to increase their sustainable banking initiatives as a crucial means of reducing conflict with shareholders who may be interested in the long-term sustainable value creation (Adu et al., 2022; Ntim & Soobaroyen, 2013). In this case, increased sustainable banking initiatives can positively impact on the *FP* of banks due to the decline in conflict of interests with the diverse shareholders through effective CG mechanisms. This suggests that, in better governed banks, managers tend to have key interests in both sustainable banking initiatives and *FP*, implying that CG mechanisms may have moderating effect on the *SPS* metric.

Secondly, *SHT* focuses on the need for banks to manage the complex and conflicting relationships with their stakeholders. Based on *SHT*, the success of banks largely depends on the enduring relationship with stakeholders. Hence, managing these stakeholders is a key tool for sustainable value creation and improved *FP*. The theory therefore provides a framework that links CG to sustainable banking initiatives (Huse, 2003). Banks disclose CG information in order to mitigate information asymmetry with shareholders and to improve stakeholder confidence (Grassa et al., 2019). For example, government, regulatory bodies and other stakeholders are considered as external 'influencers' of sustainable banking initiatives as banks rely on sustainable disclosures as a key strategy to resolve the claims of their external stakeholders (Roberts, 1992). Hence, the theory suggests that better governed banks are expected to adopt sustainable banking initiatives as a credible means of showing their good CG to their stakeholders (Beekes & Brown, 2006). The theory asserts that banks may engage in sustainable banking initiatives as a form of establishing trusting, cooperative and goodwill relationships with stakeholders, which can serve as key competitive advantage (e.g., Jizi et al., 2014; Kolk & Pinkse, 2010). For instance, increased engagement in sustainable banking initiatives can produce invaluable goodwill, which can safeguard the banks from unforeseen issues and contribute to attracting new businesses (Platonova et al., 2018). This can improve the *FP* of the banks. Moreover, it can be argued that sustainable banking initiatives promote banks' image and enhance their reputation. For example, socially responsible banks tend to be associated with greater brand loyalty (Jizi et al., 2014), customer satisfaction, whereas employee responsive banks benefit in terms of employee

commitment. Additionally, sustainable banking initiatives engagement can enhance *FP* of banks by reducing labour disputes and work stoppages because of disputes between the bank and employees such as strikes and lockouts (Waddock & Graves, 1997). Hence, *SHT* predicts that CG mechanisms can positively impact on sustainable banking initiatives and *FP* of banks.

Thirdly, *RDT* argues that banks rely on their environment to ensure the flow of essential resources (Pfeffer & Salancik, 1978). The theory therefore encourages banks to engage in sustainable business initiatives as a way of influencing the flow of vital resources such as capital, contracts and human capital to the banks. The theory predicts that CG mechanisms can increase sustainable banking initiatives and *FP* of banks. In addition, *RDT* expects banks' engagement in sustainable banking initiatives to positively impact on *FP*. The theory maintains that banks can consider sustainable banking initiatives in general as intangible assets that can result in a more effective utilization of resources, which can enhance the *FP* of banks (Surroca et al., 2010). In addition, banks that engage in wide range of local developmental programmes such as health and educational investments can attract and win businesses within their locality. Accordingly, *RDT* encourages banks to engage in sustainable banking initiatives as a way of influencing the flow of vital resources to the banks (e.g., knowledge, deposit and contracts).

Finally, *NIT* maintains that banks may gain social legitimacy by voluntarily adopting and/or complying with recognized institutional standards, rules and norms (Scott, 2001). For instance, complying with the integrated sustainability guidelines issued in the SSA region may not only improve legitimacy by enhancing the banks' image but also promote economic efficiency through having access to key resources. Accordingly, SSA banks as economic institutions may comply with sustainable banking initiatives policies that are set by their national regulators. This can also serve as means of learning from best practice from peers and/or as part of international standards (e.g., SDGs and Global Reporting Initiatives) (Haque & Ntim, 2020). For instance, complying with SDGs may not only improve banks' legitimacy by enhancing the banks' image but also promote economic efficiency through having access to key resources. Examples of key resources in the banking system include easy access to finance or deposit by establishing links and securing the support of diverse powerful stakeholders. In this regard, banks can achieve this through the implementation of sustainable banking initiatives (Adu et al., 2022). Arguably, such sustainable banking initiatives can improve the banks' image and legitimacy in the eyes of their influential stakeholders (legitimation). In addition, this may decrease the operating costs of banks by improving efficiency and thereby enhancing the *FP* of banks (Haque & Ntim, 2020). Thus, from *NIT* theoretical perspective, the engagement in sustainable banking initiatives can improve the *FP* of banks.

To sum up, it is evident that sustainable banking is an area of crucial importance for banks and involves increased engagement with people, environment and social values (Lu & Herremans, 2019). As discussed earlier, each of the above theories is limited in terms of fully explaining the impact of CG mechanisms on the *SPS* metric. Thus,

given that, individually, each of the above theories offers a different perspective on the impact of CG mechanisms on the *SPS* metric, this study interprets the findings from a multi-theoretical framework.

4 | HYPOTHESES DEVELOPMENT

In this section, the study outlines various hypotheses concerning the interrelationship among broad *CGDI*, *SBD* and *FP*, and the moderating impact of the *CGDI* on the *SPS* metric.

4.1 | Broad CGDI and sustainable banking performance

AT suggests that good CG mechanisms help in aligning managerial interests with the broader interests of shareholders (Jensen & Meckling, 1976). Within this perspective, better governed banks may engage in *SBD* more than their poorly governed counterparts. *SHT* considers CG as a set of mechanisms that can ensure banks are accountable to broader stakeholder groups (Gangi et al., 2019). From resource dependence theoretical perspective, good CG mechanisms can bring valuable economic resources, information, skills, knowledge and recommendations for organizational success (Pfeffer & Salancik, 1978). *NIT* suggests that conforming with good CG guidelines either through coercive or supervisory pressures in the form of improved *SBD* investments can enhance the legitimacy of banks' operation and services (Haque & Ntim, 2020).

Prior literature also suggests that CG mechanisms can impact on banks' engagement with sustainability initiatives, as well as all the components captured under the broad umbrella of *SBD* (e.g., Adu, 2021; Gangi et al., 2019). Arguably, because good CG is concerned with effective supervision and monitoring, it can be argued that CG mechanisms can serve as a stimulus for *SBD* initiatives (Ntim & Soobaroyen, 2013). Accordingly, it has been suggested that banks with good CG mechanisms tend to operate in such a way that it sustains good dealings with various stakeholders who interact with the bank even in the absence of recognized agreements (Adu, 2021; Gangi et al., 2019).

The empirical evidence linking broad CGDI on *SBD* is largely uncommon, and therefore, this offers a fertile ground for further studies. Indeed, prior studies mainly examine the impact of individual board structures on *SBD* (Barako & Brown, 2008; Das et al., 2015; Gangi et al., 2019; Gupta & Bala, 2020; Jizi et al., 2014; Orazalin, 2019). For example, Gupta and Bala (2020) investigate the effect of board committee disclosures in a sample of 24 banks in India over the period 2015–2016. They establish that board committee disclosures relate positively with *SBD*. Similarly, based on an international sample of 142 banks in 35 countries over the period 2011–2015, Gangi et al. (2019) document a positive effect of CG variables measured by board size, independence, gender and CEO duality on banks' ENVDs. Likewise, Jizi et al. (2014) examine the same link in the US banking system with a sample of 193 banks from 2009 to 2011. The

authors report a positive relationship between board independence, board size and *SBD*. They also document a negative link between CEO duality and *SBD*. Further, Das et al. (2015) investigate 29 banks in Bangladesh from 2007 to 2011. The results of this study reveal a positive link between board size, ownership structure, and board independence and *SBD*.

As discussed above, prior banking studies on *CG–SBD* link have largely focused on the effect of individual board structures. Banking CG studies that employ comprehensive CGDI remain uncommon (Gangi et al., 2019). In line with the recommendations of the Combined Code in the SSA region, and given that good CG mechanisms can influence *SBD*, the study expects CGDI to increase the extent of *SBD* as captured in Figure 1. Hence, the first hypothesis is as follows:

> **Hypothesis 1.** There is a positive association between *CGDI* and *SBD*, with the positive relationship being stronger in banks with high CGDI score.

Additionally, and delving deeper, several scholars (e.g., Adu et al., 2022; Johnson & Greening, 1999; Platonova et al., 2018) have pointed out the need to focus on the individual dimensions of *SBD* when analysing the influence of *CGDI* on *SBD*, contending that the explanatory information is 'lost' when only the composite measure of *SBD* is employed (Johnson & Greening, 1999, p. 574). Subsequently, this study develops the following specific hypothesis:

> **Hypothesis 1a.** There is a positive association between *CGDI* and the individual dimensions of *SBD*.

4.2 | The effect of sustainable business disclosure on FP

AT calls for effective monitoring of managers to prevent them from misappropriating shareholders wealth (Galaskiewicz, 1985). *SHT* suggests that the *FP* of banks largely depends on the enduring relationship with stakeholders. Hence, managing the stakeholders is a key tool for *FP* (Hammann et al., 2009). Accordingly, banks engage in *SBD* as a form of establishing trusting, cooperative and goodwill relationships with stakeholders (Jizi et al., 2014). For instance, banks with good *SBD* can generate valuable goodwill, which can protect banks from unexpected issues and open doors to new businesses (Platonova et al., 2018), thereby enhancing *FP*.

Resource dependence theoretical framework considers sustainable banking initiatives as key investments that can influence the flow of critical resources to banks. Banks that invest in local developmental initiatives such as health may attract and win businesses within the locality. Thus, it suggests that banks can consider *SBD* as intangible assets that can result in a more efficient utilization of resources, which can enhance *FP* (Surroca et al., 2010). *NIT* suggests that engaging in sustainable banking initiatives can help improve legitimacy by enhancing the banks' image. This can lead to economic efficiency in the form of gaining access to key resources, such as finance by securing the
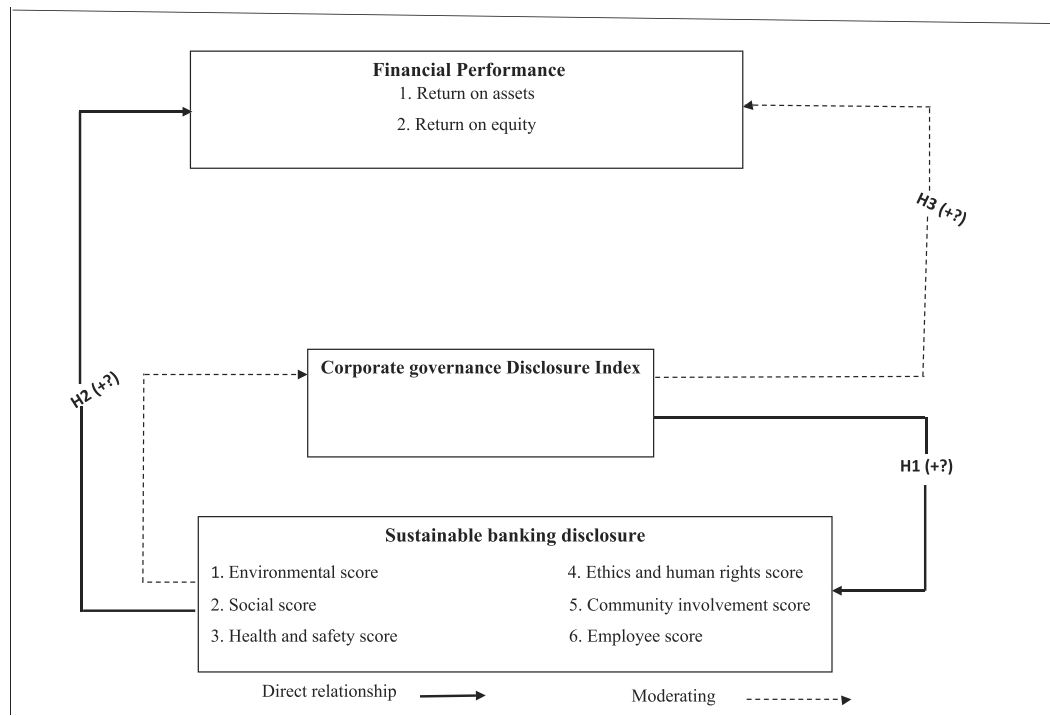
FIGURE 1 Conceptual framework of hypothesis development for sustainability-for-performance sensitivity metric

support of different powerful stakeholders which can enhance *FP* (Haque & Ntim, 2020).

The empirical evidence has produced mixed findings (e.g., Buallay et al., 2020; Maqbool & Zameer, 2018; Mukhibad et al., 2020; Platonova et al., 2018; Siueia et al., 2019; Tawfik et al., 2021). For example, Mukhibad et al. (2020) examine the influence of *SBD* on *FP* of banks in a sample of 12 Islamic banks in Indonesia over the period 2012–2018 and find that *SBD* has no impact on *ROA*, *ROE* and net profit margin. Similarly, Buallay et al. (2020) investigate the same link in 18 MENA countries based on a sample of 59 banks and show that *SBD* has positive impact on Tobin's Q, *ROA* and *ROE*. Maqbool and Zameer (2018) examine the same link in a sample of 28 banks in India from 2007 to 2016. The results show that *SBD* positively impacts on *FP* (*ROA*, *ROE* and stock returns). Platonova et al. (2018) sample 24 banks in 5 Gulf Cooperation Council countries and report a positive relationship between *SBD* and *ROA*. The results of the study show no statistically significant relationship between all the individual dimensions of *SBD* and *ROA*. Siueia et al. (2019) analyse the same relationship in a sample of 10 banks in Mozambique and South Africa over the period 2012–2016 and observe a positive relationship between *SBD* and *ROA*.

In line with the positive multi-dimensional theoretical prediction and consistent with the expectation of the integrated sustainability reforms that have been pursued in the SSA region, the study predicts that sustainable banking initiatives can enhance *FP*. Thus, as depicted in Figure 1 (Hypothesis 2), the study proposes that *SBD* can serve as an effective CG mechanism that can increase *FP* and sets the following hypothesis:

> **Hypothesis 2.** There is a positive association between *SBD* and the *FP* in the SSA banks.

Additionally, it is crucial to point out the multi-dimensional nature of *SBD* and the need to disaggregate it into individual dimensions to advance a deeper insight of the association. Thus, the study predicts that the individual components of *SBD* variables will positively impact on the various components of *FP* as captured in Figure 1. As a result, the study develops the next hypothesis focusing on the probable impact of the individual dimensions of *SBD* on the various components of *FP* as follows:

> **Hypothesis 2a.** The individual dimensions of *SBD* are positively associated with the various components of *FP* in the SSA banks.

4.3 | Moderating effect of CG on SPS

In practice, there is significant evidence that shows that quality CG mechanisms can positively impact on the *FP* of banks (e.g., Aslam et al., 2021; Musa, 2020). Considering that the choice for banks to engage in increased *SBD* originates from the board of banks, the study proposes that *CGDI* may have a moderating effect on the *SPS* metric. Also, evolving theoretical and empirical insights suggest that even though both effective CG and *SBD* are valued by the stock markets, however, CG disclosures are valued much greater than *SBD* (Adu, 2021; Ntim & Soobaroyen, 2013). The implication is that the

potential positive impact of *SBD* on *FP* can be as the result of the positive effect of CG mechanisms on *FP*, and hence, the increase in *FP* maybe driven by CG mechanisms rather than *SBD*.

More importantly, prior literature offers one important channel by which *CGDI* may reinforce the *SPS*. The evidence of previous studies shows that CG structures serve as strong pillars, dimensions and/or complement to *SBD* (Adu, 2021; Jamali et al., 2008; Ntim, 2016). The implication is that *SBD* can be theorized as an extension of good CG mechanisms. This infers that in well-governed banks (i.e., banks with high levels of *CGDI*), managers may seek to increase their *SBD* investments as a critical means of reducing conflicts with stakeholders (Jo & Harjoto, 2012). In this case, *SBD* will have a beneficial impact on *FP* due to the decline in conflicts of interests with the diverse shareholders through effective good CG mechanisms (Adu et al., 2022; Ntim & Soobaroyen, 2013).

Alternatively, in banks that are poorly governed (i.e., banks exhibiting low degree of accountability, transparency, corruption, fraud and managerial violation), less *SBD* investments are likely to be implemented, which can aggravate conflicts among the bank's broader stakeholders (Jo & Harjoto, 2012; Ntim, 2016). This can lead to frequent labour strikes, customer boycotts and increased regulator or government intervention (Ntim & Soobaroyen, 2013). Hence, not engaging in *SBD* can have a negative impact on *FP* of banks through increased conflict of interests, emanating from ineffective or poor CG mechanisms (Adu, 2021).

Nevertheless, prior banking studies have investigated the direct impact of *SBD* on *FP* (e.g., Buallay et al., 2020; Mukhibad et al., 2020; Siueia et al., 2019), without exploring the probable moderating impact of CG mechanisms on the *SPS*. As shown in Figure 1 (Hypothesis 3), the study proposes that effective CG mechanisms as measured by compliance with the Combined CG Code can influence the relationship between *SBD* and *FP* in the SSA region. Additionally, the study expects that the *SPS* will be greater in banks with high *CGDI* score (better governed banks), but weaker in banks with low *CGDI* (poorly governed banks). Hence, the final hypothesis to be investigated is as follows:

> **Hypothesis 3.** *CGDI* moderates the relationship between *SBD* and *FP*, with the *SPS* being stronger in banks with high CGDI score.

5 | RESEARCH DESIGN

5.1 | Data and sample

The banks employed for the study were drawn from 16 countries in the SSA region. The countries were drawn from the three main blocs in SSA (Southern, West and East). The countries include Botswana, Gambia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mauritius, Namibia, Nigeria, Sierra Leone, South Africa, Tanzania, Uganda, Zambia and Zimbabwe. The countries were chosen because they all have English as their official language. Consistent with prior studies, this helps in

removing language barrier in data collection, especially data on *CGDI* and *SBD* (Adu et al., 2022; Siueia et al., 2019). In addition, the choice of the countries emanates from the similar CG and integrated sustainability reforms undertaken in the region over the past decade.

The *CGDI* and *SBD* were collected from the sampled bank's annual reports which were sourced from the website of the banks. Bank financial data including *FP* were collected from BankScope and supplemented with those from annual reports, where necessary. The country-level data, including GDP and governance quality, were collected from the website of World Bank, while inflation came from the International Monetary Fund's website. The study sample period starts in 2007 and ends in 2018. Consistent with previous CG studies, the sample period spans both pre- and post-2010 (Adu et al., 2022). This helps in assessing whether the CG and integrated sustainability reforms have enhanced CG standards especially with regard to influencing *SBD* and *FP* in the countries. In addition, most of the banks' annual reports became publicly accessible on their websites in 2007. This made it possible to sourced data from 2007 in all the countries. The sample period ends in 2018, as it was the most recent year for which data were available for the sampled banks. Table 1 provides the final data which contain 220 banks.

Consistent with previous banking literature, the study excluded banks with either missing data or whose annual reports were not published (Adu et al., 2022; Siueia et al., 2019). Further, and in line with prior research, the study excluded foreign-owned banks that published their annual reports globally as consolidated financial statements (Adu, 2021; Adu et al., 2022). Again, the study included banks and specialized financial institutions whose nature and operations are similar to that of commercial banks (Adu et al., 2022; Siueia et al., 2019).

TABLE 1 Composition of the sample by countries

Country	Bank population	Sample	Representation (%)
Botswana	10	10	100
Gambia	12	8	67
Ghana	24	24	100
Kenya	41	30	73
Lesotho	4	4	100
Liberia	9	6	67
Malawi	9	5	56
Mauritius	21	15	71
Namibia	8	5	63
Nigeria	20	19	95
Sierra Leone	12	4	33
South Africa	21	20	95
Tanzania	38	25	66
Uganda	25	20	80
Zambia	17	13	76
Zimbabwe	13	12	92
Total	**284**	**220**	**77**

Note: Population and sample refer to count, and representation refers to sample as a percentage of population.

5.2 | Description of variables

Table 2 provides a summary of the variables employed in the study. Firstly, in line with Esteban-Sanchez et al. (2017), this study employs *ROA* and *ROE* as the measures of *FP*. The study excluded market-based indicators of *FP* such as Tobin's Q and Price-to-Earnings (PE) ratio because most of the banks in the region are not publicly listed. Notwithstanding, *ROA* and *ROE* are appropriate indicators of *FP* because the study is based on banks and, as such, the selection of these measures do not suffer from industry bias (Galant & Cadez, 2017; Maqbool & Zameer, 2018). Moreover, these indicators are more sensitive to bank-specific (unsystematic) perceptions of *SBD* (Galant & Cadez, 2017). This is also consistent with prior studies in the SSA banking system (e.g., Adu et al., 2022; Siueia et al., 2019).

Secondly, following previous studies, the study develops *SBD* based on disclosures manually collected from the annual reports of the banks (Adu et al., 2022; Siueia et al., 2019). This is because rating agencies have limited coverage of banks in the SSA region. Following Adu et al. (2021), the study asserts that a combination of quantitative and qualitative disclosures based on content analysis approach is more objective and informative. This study employs this approach to analyse the disclosures in the integrated sustainability reports of the banks. The study seeks to measure the quality of sustainability disclosures in six broad areas as set out by the Combined integrated sustainability guidelines in the SSA countries (Ghana, 2010; Nigeria, 2011; South Africa, 2010; and Kenya, 2014). In addition, these sustainability dimensions were selected based on the 2016 Global Reporting Initiative guidance. Specifically, the six broad *SBD* dimensions include 135 sustainability disclosures: (i) social (27), (ii) health and safety (40), (iii) ethics and human rights (12), (iv) environment (21), (v) community involvement (21) and (vi) employees (14).

Consistent with well-established line of scoring of sustainability disclosures (Adu et al., 2022; Ntim, 2009; Ntim & Soobaroyen, 2013), the study develops *SBD* based on qualitative and quantitative scores. The qualitative based scores include (i) general or rhetorical (including instances of ritualistic and repeated) statements deemed to be purely symbolic with no evidence of actual actions/activities on the ground (with a score of '1') and (ii) a description of what has been achieved or considered to be a message of assurance by the bank (beyond symbolic) with a score of '2' (Adu et al., 2022). Next, the first quantitative based score employed in the study focuses on whether the qualitative statement provided in (ii) above is backed by quantitative or monetary figures (with a score of '3'). This is deemed to be substantive as the banks provide indication of the measure of activities undertaken. The second quantitative score relies on information provided in the first quantitative measure (with a score of '4'). If the first quantitative score above is backed by clear valuations of performance (compared to previous year) or actions (when even they are 'negative' event), and which permits evaluation between banks employing external reporting models/benchmarks/assurance that are considered to be all-inclusive. Examples include external assurance of the sustainability report by the *BIG4* audit firms.

In order to check the reliability of the *SBD*, the study adopts two manual scoring approach as applied by Adu et al. (2022). The first round of scoring of the *SBD* takes 12 months starting in January 2018 and ending in December 2018. The second round of scoring takes 8 months, starting in January 2019 and ending in August 2019. Basically, the second round of scoring was done to check the reliability of the first round of scoring. Any discrepancies in the first set of scoring were corrected during the second round of scoring. Regarding reproducibility of the *SBD*, for each sustainability disclosure dimension, a comprehensive spreadsheet covering the page number(s) of the score of the study and where to find the score in the annual reports are recorded, as applied by prior studies (Adu et al., 2022; Ntim, 2009). By this approach, it becomes simple and easy to replicate the scoring of *SBD* by other researchers. The validity of the *SBD* is attained through the use of the six key integrated sustainability disclosures covered in the Combined integrated sustainability guidelines issued in the SSA countries. It is worthy to note that these six integrated sustainability guidelines have been employed by previous researchers in the region (Adu, 2021; Adu et al., 2022; Ntim & Soobaroyen, 2013).

Thirdly, following well-established literature concerning scoring of CG disclosures in annual reports (e.g., Adu et al., 2022; Beiner et al., 2006; Ntim, 2009; Ntim & Soobaroyen, 2013), the study employs a binary CGDI. For instance, Beiner et al. (2006) construct an aggregate CG index based on 38 provisions from the Swiss Code of Best Practice in 2002 in a sample of 109 Swiss listed. The authors divide 38 CG provisions into five key subsections. The subsections include board of directors and executive management, reporting and auditing, shareholders' rights, transparency and CG commitment. In constructing the aggregate CG index, the authors award each firm a point for the existence of any of the 38 good CG provisions, zero otherwise. Similarly, the *CGDI* of this study is an aggregation of 100 comprehensive set of CG provisions. The selection of the 100 CG provisions is informed by the Combined CG Code and disclosures in the annual reports of the banks. Thus, the *CGDI* is a collection of 100 detailed set of CG provisions contained in the Combined Code (Ghana, 2018, 2010; Nigeria, 2018, 2011; Kenya, 2014, 2002; and South Africa, 2016, 2010). Precisely, the provisions capture four wide areas: (i) directors and board disclosures (43); (ii) accounting, auditing and transparency disclosures (22); (iii) risk management, internal audit and control disclosures (13); and (iv) compliance, shareholder rights and enforcement disclosures (22).

A dichotomous method is then applied, whereby a bank is assigned a score of '1' if a CG item is disclosed; otherwise, '0' is awarded (Adu et al., 2022). This is consistent with previous research that employ either national (e.g., Cadbury Report, 1992; Combined Code 1998; Swiss Code of Best Practice, 2002) or international codes of CG (e.g., Commonwealth Association for Corporate Governance, 1999; OECD Principles, 1999), in constructing composite CG indices (e.g., Adu et al., 2022; Beiner et al., 2006; Cheug et al., 2007; Ntim, 2009; Ntim & Soobaroyen, 2013; Shabbir & Padgett, 2008). Appendix A contains the four broad themes and the various variables that make up the *CGDI*. It also offers clear descriptions of the coding

TABLE 2 Definition of variables

Variable	Abbreviation	Description	Source
Panel A: Dependent variables			
Financial performance	*FP*		
Return on assets	*ROA*	Percentage of operating profit to total assets.	BankScope
Return on equity	*ROE*	Ratio of net income to shareholder's equity.	BankScope
Panel B: Independent variables			
Sustainable banking disclosure	*SBD*	A *SBD* index covering six broad areas as set out by 2016 GRI's reporting guidance on *SBD*: environmental score (*ENVD*), 21 disclosures; social investment and service quality (*SOC*), 27 disclosures; health and safety (*HAS*), 40 disclosures; community involvement, 21 disclosures; ethics and human rights (*EHR*), 12 disclosures; and employee (*EMP*), 14 disclosures. Each disclosure ranges from 0 to 4 (where 0, no disclosure; 1, general or rhetorical disclosures; 2, narrative of what has been achieved; 3, quantitative or monetary data disclosure; and 4, quantitative or monetary disclosure supported by explicit assessment of performance or events). The results are scaled to a value between 0% and 100%.	Annual report
Environmental disclosure score	*ENVD*	An environmental disclosure score, measured as the ratio of disclosure points over the maximum score (21) a bank can score.	Annual report
Social investment and service quality score	*SOC*	A social investment and service quality disclosure score, measured as the ratio of disclosure points over the maximum score (27) a bank can attain.	Annual report
Health and safety score	*HAS*	A health and safety disclosure score, measured as the ratio of disclosure points over the maximum score (40) a bank can attain.	Annual report
Ethics and human rights score	*EHR*	An ethics and human rights disclosure score, measured as the ratio of disclosure points over the maximum score (12) a bank can attain.	Annual report
Community involvement score	*CIV*	A community involvement disclosure score, measured as the ratio of disclosure points over the maximum score (21) a bank can attain.	Annual report
Employee score	*EMP*	An employee disclosure score, measured as the ratio of disclosure points over the maximum score (14) a bank can attain.	Annual report
Panel C: Independent variable			
CG disclosure index	*CGDI*	CG index containing 100 provisions derived from the commonwealth CG code, individual country CG codes and annual report of the sampled banks. The CG provision take a value of 1 if it is disclosed in the annual report, otherwise 0 and scaled to a value between 0% and 100%.	Annual report
Panel C: Bank control variables			
Firm size	*FSIZE*	Natural logarithm of total assets of the bank.	BankScope
Leverage	*LEV*	Ratio of total debt to total assets.	BankScope
Age	*AGE*	Natural log of the number of years since inception.	Annual report
Liquidity	*LIQ*	Liquid assets divided by total assets.	BankScope
Capitalization	*CAP*	Equity capital divided by total assets.	BankScope
Audit firm size	*AFS*	1 if a bank is audited by the big four audit firm (PricewaterCoopers, Deloitte & Touche, Ernest & Young and KPMG), 0 otherwise.	Annual report
Research and development	*R&D*	Natural logarithm of research and development cost of the bank scaled by total assets.	BankScope

(Continues)

TABLE 2 (Continued)

Variable	Abbreviation	Description	Source
Gross domestic product	*GDP*	Natural log of GDP relates to changes in national income.	World Bank
Inflation	*INFL*	Natural log of annual rate of inflation as a percentage of GDP.	IMF
Governance quality	*GOVQ*	World Bank governance indicators voice and accountability, transparency, political stability, and government effectiveness, regulatory quality and control of corruption.	World Bank

Note: This table provides the definitions of the main variables employed in the analysis.

instruments and how the variables have been assessed as applied by Adu et al. (2022) and Ntim and Soobaroyen (2013).

Two main important methodological challenges that are associated with employing researcher-constructed aggregate CG indices are the issue of reliability and validity (Marston & Shrives, 1991; Ntim, 2009). Briefly, reliability denotes the 'the extent to which a measuring procedure yields the same results on repeated trials' (Hassan & Marston, 2008, p. 27). Concerning the *CGDI*, there are two reliability challenges that must be addressed. These are stability and reproducibility. The *CGDI* is reliable if it can be replicated by the same researcher over time (stability), as well as by another researcher (reproducibility), when coding the same content with higher levels of accuracy (Beattie & Thomson, 2007, p. 139; Beattie et al., 2004, p. 214). Regarding stability, the study follows Ntim (2009) in coding each annual report twice over a period of 20 months. The first set of coding takes 12 months starting in January 2018 and ending in December 2018. The second set of coding takes 8 months starting in January 2019 and ending in August 2019. Essentially, the second set of coding allows the author to cross-check the first set of coding with subsections comprehensively re-analyse as suggested by Ntim (2009) and Beattie and Thomson (2007). Any inconsistencies in the first set of coding were corrected during the second round of coding. Concerning reproducibility, for each CG provision, a comprehensive spreadsheet covers the page number(s) of what was coded, where it was coded from and why it was coded in that way (Adu et al., 2022; Ntim, 2009). Notably, the adoption of this systematic approach makes it simple and easy to replicate the constructed *CGDI* by other researchers.

The second crucial concern that is addressed is the validity of the *CGDI*. In particular, Hassan and Marston (2008, p. 30) define validity as 'the extent to which any measuring instrument measures what it is intended to measure'. The external validity of the *CGDI* is achieved through the use of conventional CG provisions covered in the Combined CG Code in the SSA region (Ghana, 2018, 2010; Nigeria, 2018, 2011; Kenya, 2014, 2002; and South Africa, 2016, 2010) that are rigorously grounded in prior empirical research (Adu et al., 2022; Ntim, 2009; Ntim & Soobaroyen, 2013).

Finally, following well-established literature (Adu et al., 2022; Apergis, 2019; Sarhan et al., 2019), the study controls for bank-level variables that can be associated with bank's outcome such as firm size,

capitalization, liquidity, leverage, age, audit firm size, research and development, and country-level variables such as GDP, governance quality and inflation (Adu, 2021; Adu et al., 2021; Sarhan et al., 2019). The study also includes dummies for all the countries and year dummies for the years from 2007 to 2018. Details of the variables are contained in Table 2.

5.3 | Econometric models

Following Adu et al. (2021) and Haque and Ntim (2020), and to address the first research question (i.e., whether bank-level CGDI influences SBD [Hypothesis 1]), the model below is proposed and tested using the ordinary least square (OLS) regression technique initially.

$$
\begin{aligned}
SBD_{it} = {} & \alpha_0 + \beta_1 CGDI_{it} + \beta_2 FSIZ_{it} + \beta_3 LEV_{it} + \beta_4 AGE_{it} + \beta_5 CAP_{it} \\
& + \beta_6 AFS_{it} + \beta_7 R\&D_{it} + \beta_8 YDU_{it} + \beta_9 CDU_{it} + + \beta_{10} GDP_{it} \\
& + \beta_{11} INFL + \beta_{12} GOVQ_{it} + \varepsilon_t
\end{aligned}
\tag{1}
$$

where CG disclosure index is the *CGDI*. *SBD* denotes sustainable banking disclosure measures, depending on the specification, which is either *SBD*, *ENVD*, social investment and service quality (*SOC*), health and safety (*HAS*), community involvement (*CIV*), ethics and human rights (*EHR*) or employee (*EMP*). The set of variables being controlled for are, namely, firm size (*FSIZE*), leverage (*LEV*), age (*AGE*), capitalization (*CAP*), audit firm size (*AFS*), research and development (*R&D*), GDP, governance quality (*GOVQ*), inflation (*INFL*), year dummies (*YDU*) and country dummies (*CDU*). Further, this study follows Adu et al. (2021) and Nguyen et al. (2021) and introduces the following model:

$$
\begin{aligned}
FP_{it} = {} & \alpha_0 + \beta_1 SBD_{it} + \beta_2 FSIZE_{it} + \beta_3 LEV_{it} + \beta_4 AGE_{it} + \beta_5 CAP_{it} \\
& + \beta_6 AFS_{it} + \beta_7 R\&D_{it} + \beta_8 YDU_{it} + \beta_9 CDU + \beta_{10} GDP_{it} + \beta_{11} INFL \\
& + \beta_{12} GOVQ_{it} + \varepsilon_t
\end{aligned}
\tag{2}
$$

where SBD_{it} is the sustainable banking scores, which depending on the specification is either the aggregate *SBD* or its six sub-indices (*ENVD*, *SOC*, *HAS*, *EHR*, *CIV* and *EMP*). Bank-specific control variables

include *FSIZE, LEV, AGE, CAP, AFS, R&D, GDP, INFL* and *GOVQ* where ε_{it} refers to the error term.

Finally, the study hypothesizes that the *FP* of a bank is affected jointly by its *CGDI* and *SBD*. To examine this, the study adopts Adu et al.'s (2022) study in estimating the moderating impact of *CGDI* on the S*PS* as shown in Equation 3. Precisely, to examine Hypothesis 3 (whether *CGDI* moderates the *SPS*), the study creates an interaction variable by multiplying the *CGDI* and *SBD* as follows: *CGDI* times *SBD* (*CGI*SBD*). The next model is as follows:

$$FP_{it} = f \begin{pmatrix} CGDI_{it} \\ SBD_{it} & + CONTROLS_{it} + \varepsilon_t \\ CGDI_{it} * SBD_{it} \end{pmatrix} \quad (3)$$

where $CGDI_{it} * SBD_{it}$ is the interaction variable between the *CGDI* and *SBD*. All other variables remain same as specified in Equation 1.

6 | EMPIRICAL RESULTS AND DISCUSSION

6.1 | Descriptive statistics and univariate analysis

Table 3 shows the summary statistics of the variables included in the analysis. The average *ROA* for the SSA banks is 2.90 with a

minimum of 6.46 and maximum of 92.20, while *ROE* with a mean of 16.97 ranges from 1.23 to 98.83. The results in the table reveal that the *SBD* figures range from 6.11% to 61.11%, with an average figure of 34.25% and a standard deviation of 9.37. This suggests that the *SBD* data appear to be less spread (more clustered) around the mean. This disclosure is much lower than those reported in the banking sector in developed countries (Scholtens, 2009).

Further, *ENVD* figures span from 2.38% to 82.14%, with an average figure of 37.58%, while *SOC*, with a mean of 34.76%, values span from 3.70% to 75.00%. Similarly, the results show that *HAS* figures span from 1.88% to 51.88%, with a mean of 22.87%, whereas *EHR* has an average of 38.53 and ranges from 2.08% to 83.33%. The mean score for *CIV* and *EMP* is 39.13% and 50.31%, respectively. Table 3 also presents the summary information on *CGDI*. The *CGDI* score represents the quality of CG mechanisms of the banks. The average score of the *CGDI* is 64.56%, which implies that majority of the banks have high *CGDI* score (Adu et al., 2022).

Table 4 provides the correlation matrix of all variables used in the regression analysis. The correlation among the independent variables is relatively low and statistically insignificant. A weak correlation of the independent variables is desirable since it suggests that multicollinearity is not a major issue (Liu et al., 2014).

TABLE 3 Descriptive statistics of all variables for all the 2027 bank years

Variable	Mean	Median	Std. dev.	Minimum	Maximum
Panel A: FP					
ROA	2.90	1.87	0.06	6.46	92.20
ROE	16.97	14.30	0.16	1.23	98.83
Panel B: SBD variables					
SBD index (%)	34.25	33.89	9.37	6.11	61.11
ENVD (%)	37.58	34.52	17.02	2.38	82.14
SOC (%)	34.76	34.26	14.29	3.70	75.00
HAS (%)	22.87	21.25	9.13	1.88	51.88
EHR (%)	38.53	35.42	16.79	2.08	83.33
CIV (%)	39.13	40.48	13.98	1.13	69.05
EMP (%)	50.31	50.00	12.70	3.57	75.00
CGDI (%)	64.56	66.00	13.96	23.00	88.00
CGDI*SBD	2245.70	2146.48	18.70	244.44	4742.22
Panel C: Bank control variables					
FSIZE ($m)	9.52	9.11	2.92	2.35	17.26
CAP	0.20	0.13	0.32	0.02	0.99
LEV	0.84	0.86	0.11	0.03	0.95
AGE	36.00	26.00	29.96	2.00	178
R&D ($m)	2.22	1.57	2.49	4.61	10.15
AFS	0.92	1.00	0.27	0.00	1.00
GDP	5.76	6.24	2.14	−16.42	20.13
INFL	8.74	9.66	15.67	3.04	72.73
GDP	2.42	3.00	1.35	0.00	4.00

Note: This table provides the summary statistics of all the variables used in the regression analysis. Please see Table 2 for variable definitions.

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TABLE 4 Pearson's correlation matrices of the variables for CGDI, SBD and FP for the 2027 bank-year observations

Variable	ROA	ROE	SBD	ENVD	SOC	HAS	EHR	CIV	EMP	CGDI	CGDI*SBD	FSIZE	LEV	CAP	AGE	AFS	R&D	GDP	INFL	GOVQ
ROA	1.00																			
ROE	.43	1.00																		
SBD	.03**	.03*	1.00																	
ENVD	.07**	.02*	.08*	1.00																
SOC	.08**	.09*	.08*	.03	1.00															
HAS	−.04**	−.01	.07*	.32*	.03	1.00														
EHR	−.06**	.03*	.07*	.07	.05	.04*	1.00													
CIV	−.07**	−.07*	.06*	.03	.03*	.05	.04	1.00												
EMP	−.02	.05**	.05	.05*	.04	.02*	.03*	.18	1.00											
CGDI	.05***	.03*	.14***	.07***	.11***	.16*	.03***	.12***	.16***	1.00										
CGDI*SBD	.08***	.04**	−.02	−.001	−.03	−.02*	−.13*	.061	−.07	.007	1.00									
FSIZE	.04**	.01*	−.09**	−.01**	−.08**	−.09**	−.04*	−.17**	.08***	−.02	.01	1.00								
LEV	−.01	.01**	.01	.03	−.03*	−.03	.04**	.01	.05**	.11*	.03	.04	1.00							
CAP	.31**	−.14*	−.10	−.14**	−.03*	−.04**	−.12**	−.11**	.09***	−.05*	.04	−.10	−.06	1.00						
AGE	.06**	.08**	.12***	.03	.15***	.10***	.04**	.12***	.16***	.02	.01*	.14	.01	.08*	1.00					
AFS	−.06**	.01*	.08***	.03*	.08***	.08***	.03	.02	.06**	.03	.07	.06	.01	−.01	−.02*	1.00				
R&D	.01**	.01**	.02	.08***	.02	.02	.02	.03*	.10***	.04*	.11	.06*	.11	−.10	.20*	−.08*	1.00			
GDP	.02*	.03*	.05*	.03**	.07	.05	.02	.07**	.12**	.01	.09*	.14*	.01	−.07	.24	.01*	.02	1.00		
INFL	.07	.04	.08*	−.04*	−.05	.03*	.01	−.08**	−.03	.07	.01	.01*	−.01	.02*	.02	−.02	.03	−.02*	1.00	
GOVQ	.04**	.03*	.01**	.03***	.09**	.07***	.08**	.03**	.04*	.01	.02*	.02*	.01*	−.01	.02	.01	−.02	.02	.01*	1.00

Note: Please see Table 2 for variable definitions.
***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

6.2 | Multivariate results and discussion

Table 5 provides the results of the effect of *CGDI* covering 100 main components obtained from the Combined CG Code provisions on *SBD* captured in Equation 1. Prior research indicates that good CG mechanisms can lead to a reduction of agency conflicts by enhancing the monitoring role of the board. Increased managerial monitoring capacity has been suggested to be associated with increased sustainable activities (Ntim & Soobaroyen, 2013). To test this, the study investigates the impact of the *CGDI* on *SBD*. The coefficient of *CGDI* on *SBD* (0.047) in Model 1 of Table 5 is positive and statistically significant. The evidence offers empirical support for Hypothesis 1. The evidence suggests that the higher the level of the *CGDI* of the banks, the higher the *SBD* activities. This result is also consistent with other studies that document a positive effect of the *CGDI* on *SBD* (e.g., Jizi et al., 2014; Platonova et al., 2018).

To further investigate the robustness of the result, the study divides the sample according to the mean value of the *CGDI* and re-estimates Equation 1 in the sub-samples. Specifically, and in line with Adu et al. (2022), the study conducts this analysis in different sub-samples. This led to two groups: better governed and poorly governed banks. In the case of better governed banks, the sub-sample contains banks with a *CGDI* value over the mean score of 64%. Likewise, for poorly governed banks, the sub-sample contains banks with *CGDI* value lower than the mean score of 64%. This analysis was done to provide more informative inferences about the data (Adu et al., 2022; Elmagrhi et al., 2020). The results are provided in Models 2 and 3 in Table 5. Concerning well-governed banks, the coefficient of the *CGDI* on the *SBD* (0.254) is positive and statistically significant at 1%. The coefficient is also high in magnitude. This evidence offers further empirical support for Hypothesis 1. Although the coefficient of the *CGDI* on the *SBD* for poorly governed banks is also positive, however, it is statistically significant at 10%, and it is also much lower in magnitude (0.004), offering further empirical support for Hypothesis 1.

This supports the suggestion that well-governed banks tend to substantially undertake *SBD* activities than poorly governed banks. Overall, the positive effect of the *CGDI* lends empirical support for the recommendations of the Combined Code in the SSA countries. Theoretically, the evidence confirms the prediction of *AT*, *SHT* and *NIT*, indicating that under poor governance conditions (*AT*), managers may not engage in activities that increase sustainable value creation. However, under good CG conditions (*NIT*), managers tend to strengthen the existence of the banks and earn social acceptance by engaging in sustainable business initiatives such as contributing to the well-being and prosperity of the society (Khan, 2010). Similarly, from *SHT* perspective, better governed banks will engage in more sustainable initiatives as reliable means of showing their CG quality to their stakeholders (Beekes & Brown, 2006).

In order to examine the association between each of the *SBD* dimensions and the *CGDI*, the study re-estimates Equation 1 by

TABLE 5 The effect of corporate governance disclosure index on sustainable banking disclosure score

| Dep. variable | SBD | Better governed banks | Poorly governed banks |
Model	(1)	(2)	(3)
Indep. variables			
CGDI	0.047*** (0.015)	0.254*** (0.018)	0.004* (0.020)
Bank-level controls			
FSIZE	0.436*** (0.017)	0.584*** (0.014)	0.245** (0.018)
LEV	−0.326 (0.214)	−0.492 (0.220)	−0.685 (0.217)
AGE	1.569*** (0.269)	1.713*** (0.254)	1.415*** (0.270)
CAP	−0.684*** (1.164)	−0.456*** (1.120)	−0.814** (1.145)
AFS	0.835* (1.486)	1.451** (1.287)	0.453* (1.540)
R&D	0.420*** (0.110)	0.624*** (0.183)	0.254** (0.160)
Country-level controls			
GDP	0.298 (0.347)	0.304 (0.271)	0.311 (0.289)
INFL	0.238 (0.330)	0.244 (0.205)	0.348 (0.211)
GOVQ	0.489*** (0.687)	0.411** (0.547)	0.354* (0.654)
Constant	0.597*** (0.275)	0.304*** (0.271)	0.487*** (1.813)
Year fixed effects	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes
R-squared	.413	.490	.621
No. of observations	2027	1166	861

Note: Standard errors are reported in parentheses. Please see Table 2 for variable definitions.
***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

replacing the *SBD* with *ENVD*, *SOC*, *HAS*, *EHR*, *CIV* or *EMP* scores one at a time, and the results are reported in Models 1–6 of Table 6, respectively. Similarly, the apparent sensitivity of the evidence in Table 6 suggests that the *CGDI–SBD* link can vary based on the *SBD* dimension employed. For example, the *CGDI* has positive effect on *ENVD*, *SOC*, *HAS* and *EMP*. The findings offer empirical support for Hypothesis 1a. Thus, it can be inferred that the higher the level of CG mechanisms, *the better the SSA bank's performance in ENVD, SOC, HAS and EMP*. Observably, the findings contribute to a small, but growing findings which show that CG has a positive impact on *SBD* (Adu et al., 2022; Ntim & Soobaroyen, 2013). The findings lend empirical support for the recommendations of CG codes in the SSA countries that incorporate the expectation that CG will be linked with *SBD*. By contrast, the study finds no significant association between the *CGDI*, and *EHR* and *CIV*.

The empirical findings of *SBD* along with bank-specific and country control variables on *FP* are provided in Table 7. Models 1–7 of Table 7 provide the results concerning the effect of *SBD* on *ROA*, and Models 8–14 show the results of the impact of *SBD* on *ROE*. The results in the table show that *SBD* has a positive and significant impact on both *ROA* and *ROE*, which provides empirical support for Hypothesis 2. The evidence also confirms the multi-theoretical framework (*SHT*, *RDT* and *NIT*) which suggests that *SBD* initiatives undertaken by banks may have a long-term effect on *FP* of banks. The positive effect of *SBD* on *FP* may be due to the positive impact of sustainable initiatives on the reputation of the banks. Thus, banks that are more sustainability active tend to potentially enhance their customer loyalty (Platonova et al., 2018). In addition, sustainability conscious banks may obtain the support of a much broader variety of stakeholders (Kabir & Thai, 2017; Platonova et al., 2018), thereby improving the *FP* of the banks. Also, the positive and significant empirical results may also indicate that investors take into consideration banks' sustainable initiatives (Platonova et al., 2018).

Similarly, *SOC*, *EHR* and *EMP* are positively and significantly associated with both *ROA* and *ROE*, thereby offering empirical support for Hypothesis 2a. These findings corroborate the evidence of prior studies (e.g., Platonova et al., 2018; Scholtens, 2009). Based on *SHT*, satisfying the needs of different groups of stakeholders will lead to enhanced *FP* due to greater effectiveness and efficiency (Platonova et al., 2018). Further, good relationship with key stakeholders can help generate valuable goodwill, which will protect banks from unexpected social issues and open new prospects, which can lead to an improvement in the *FP* of banks (Platonova et al., 2018). Theoretically, the evidence is consistent with the predictions of *NIT*, which stresses on legitimation and efficiency reasons for banks to engage in sustainable initiatives (Ntim & Soobaroyen, 2013). The ability of banks to deliver superior service is dependent on recruiting and retaining employees with appropriate talent and skills. For example, banks that adopt good employee practices may improve efficiency and *FP* by attracting highly skilled labour, motivating employees and creating a bonding mechanism for them (Bhattacharya et al., 2008).

From *RDT* perspective, by engaging and disclosing ethics and human rights practices, banks may increase customer loyalty, which can increase business through gaining access to key resources, such as finance, contracts and deposit (Haque & Ntim, 2020). *EMP* can also help towards increasing employee motivation, productivity and loyalty, hiring of good employees and reducing employee turnover (Kabir & Thai, 2017). Within *SHT* framework, compliance with ethics and human rights in banks due to either coercive or regulative institutional pressures in the form of increased *EHR* can improve the legitimacy of banks' operations and services by enhancing their reputation. This can positively impact on *FP* of banks. Further, greater commitment to ethically commendable practices can lead customers' and other stakeholders to perceive the bank as adopting sustainable practices which can enhance the reputation of the bank. Bushman and Wittenberg-Moerman (2012) contend that banks with high reputation are associated with stronger profitability and better credit quality of borrowers, which tend to increase *FP*.

By contrast, the empirical results shown in Table 7 indicate that *ENVD*, *HAS* and *CIV* are negatively associated with *ROA* and *ROE*, respectively. However, the association between *ENVD* and *ROA* is insignificant. These results do not offer empirical support for Hypothesis 2a. These findings corroborate the findings of prior studies that suggest that being active in the community through engaging in charity projects, supporting and promoting community welfare can be expensive and give rise to an administrative burden (e.g., Barnett & Salomon, 2006). In order to incur these costs, banks will have to forgo competitive investments/products and services. Hence, engaging in *CIV* activities and disclosure may create financial burden for banks, which reduces *FP*.

Table 8 provides the OLS regression results exploring the probable moderating impact of *CGDI* on the *SPS*. The findings indicate that bank-level *CGDI* has a moderating impact on the *SPS*. Specifically, the result in Model 1 of Table 8 shows that the moderation variable *CGDI*SBD* has a positive effect on *ROA*. The evidence, thus, offers empirical support for Hypothesis 3 that bank-level CG mechanisms positively moderate the relationship between sustainable banking initiatives and performance. Similarly, the results in Model 4 of Table 8 indicate that *CGDI*SBD* has a positive effect on *ROE*. The findings, thus, provide empirical support for Hypothesis 3 that *CGDI* positively moderates the *SPS* metric. This evidence suggests that the *SPS* is contingent on the quality of banks internal governance structures. Theoretically, strong managerial monitoring associated with sustainability progress linked to *SBD* by strong boards can enhance banks' *FP* (Adu et al., 2022). Further, compliance, shareholder rights and enforcement structures can mitigate agency conflicts (Ntim et al., 2015). For example, good CG structures such as greater activism by pro-environmental institutional investors can improve the *SPS* (Adu, 2021).

Models 2–3 and 5–6 of Table 8 offer insight into the moderating effect of the *CGDI* on the *SPS* in the sub-sample. In doing this, the study divides the sample based on the mean score of the *CGDI* in line with Adu et al. (2022) and re-estimates Equation 3 in the

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TABLE 6 Effect of corporate governance disclosure index on various dimensions of sustainable banking disclosure score

Dep. variables Model	ENVD (1)	SOC (2)	HAS (3)	EHR (4)	CIV (5)	EMP (6)
Indep. variables						
CGDI	0.032** (0.043)	0.072*** (0.023)	0.100*** (0.054)	−0.0238 (0.061)	0.019 (0.022)	0.073*** (0.055)
Bank-level controls						
FSIZE	−0.634*** (0.187)	−0.392** (0.152)	−0.163 (0.147)	−0.573*** (0.180)	−0.841**** (0.146)	−0.292** (0.150)
LEV	−0.955 (0.874)	−0.694* (0.785)	−0.769** (0.753)	−0.841 (0.887)	−0.604 (0.713)	−0.896* (0.594)
AGE	0.665 (0.497)	0.116*** (0.404)	0.933*** (0.547)	0.281 (0.531)	0.215*** (0.387)	0.890*** (0.475)
CAP	−0.951*** (2.139)	−0.159*** (1.742)	−1.687 (1.357)	−1.160*** (1.475)	−1.600*** (1.671)	−0.165** (0.257)
AFS	0.293 (0.842)	1.803** (0.574)	1.111** (0.574)	0.174 (0.540)	0.533 (0.698)	1.186* (0.347)
R&D	0.837*** (0.202)	0.568*** (0.164)	0.208* (0.115)	0.353* (0.138)	0.198 (0.157)	0.522*** (0.354)
Country-level controls						
GDP	0.850* (0.584)	0.719* (0.624)	0.118 (0.354)	0.288 (0.310)	0.574 (0.387)	0.671* (0.348)
INFL	−0.731 (0.472)	−0.810 (0.581)	−0.059 (0.412)	0.408 (0.355)	−0.580 (0.421)	−0.457 (0.356)
GOVQ	0.419* (0.324)	0.358** (0.304)	0.740** (0.312)	0.357** (0.410)	0.637** (0.320)	0.740** (0.220)
Constant	0.535*** (0.984)	0.831*** (0.787)	0.547*** (1.251)	0.334*** (0.874)	0.156*** (2.058)	0.810*** (1.247)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Country dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2027	2027	2027	2027	2027	2027
R-squared	.269	.368	.314	.217	.205	.371

Note: Standard errors are reported in parentheses. Please see Table 2 for variable definitions.
***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

TABLE 7 The effect of the various components of sustainable banking disclosure scores on financial performance

Dep. variables	ROA (1)	ROA (2)	ROA (3)	ROA (4)	ROA (5)	ROA (6)	ROA (7)
Indep. variables							
SBD	0.005** (0.003)						
ENVD		−0.004 (0.002)					
SOC			0.012*** (0.017)				
HAS				−0.009** (0.028)			
EHR					0.005** (0.037)		
CIV						−0.012*** (0.057)	
EMP							0.007** (0.014)
Bank-level controls							
FSIZE	0.011** (0.003)	0.001* (0.013)	0.024** (0.004)	0.018* (1.825)	0.034** (0.047)	0.052* (0.031)	0.048* (0.022)
LEV	−0.842*** (0.315)	−0.125*** (0.004)	−0.154* (0.280)	−0.246* (1.927)	−0.198 (0.541)	−0.207* (0.382)	−0.184* (0.254)
AGE	0.091*** (0.143)	0.085*** (0.035)	0.077* (0.043)	0.060** (1.963)	0.075*** (0.053)	0.088*** (0.097)	0.055* (0.035)
CAP	−0.112*** (0.084)	−1.030*** (0.155)	−1.241*** (0.134)	1.503*** (3.185)	−1.841* (2.408)	−1.354* (2.357)	−1.281* (2.880)
AFS	−0.058 (0.793)	−0.021 (0.311)	−0.035 (0.287)	−0.031 (0.458)	−0.054 (0.587)	−0.084 (0.321)	−0.091 (0.218)
R&D	0.004** (0.767)	0.013*** (0.015)	0.019*** (0.547)	0.002*** (0.196)	0.051 (0.587)	0.087** (0.224)	0.061* (0.084)
Country-level controls							
GDP	0.324* (0.340)	0.348* (0.415)	0.420** (0.249)	0.432 (0.315)	0.341* (0.287)	0.235* (0.180)	0.487* (0.132)
INFL	−0.074 (0.201)	−0.059 (0.344)	−0.023 (0.405)	−0.084* (0.287)	−0.057 (0.378)	−0.038 (0.210)	−0.041 (0.374)
GOVQ	0.178*** (0.384)	0.201*** (0.411)	0.227* (0.350)	0.180** (0.301)	0.348*** (0.287)	0.197** (0.125)	0.257*** (0.320)
Constant	−0.852*** (0.370)	−0.614*** (0.874)	−1.949*** (0.454)	1.788*** (0.537)	2.874** (0.387)	1.897*** (0.421)	1.794*** (0.542)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2027	2027	2027	2027	2027	2027	2027
R-squared	.305	.405	.328	.374	.387	.289	.324

Note: Standard errors are reported in parentheses. Please see Table 2 for variable definitions.
***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

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TABLE 7 (Continued)

Dep. variables	ROE (8)	ROE (9)	ROE (10)	ROE (11)	ROE (12)	ROE (14)
Indep. variables						
SBD	0.003* (0.004)					
ENVD		−0.010*** (0.008)				
SOC			0.008*** (0.061)			
HAS				−0.009** (0.027)		
EHR					0.007*** (0.005)	
CIV						
EMP						0.002* (0.007)
Bank-level controls						
FSIZE	0.024** (0.081)	0.020* (0.520)	0.287* (0.411)	0.318** (0.324)	0.025* (0.184)	0.055* (0.432)
LEV	−0.158 (0.541)	−0.254* (0.027)	−0.330 (0.046)	−0.180 (0.012)	−0.280 (0.033)	−0.154 (0.037)
AGE	0.075* (0.842)	0.071** (0.034)	0.084** (0.283)	0.064*** (0.130)	0.055*** (0.251)	0.066 (0.754)
CAP	−1.355*** (0.423)	−1.511*** (0.098)	−1.248* (0.126)	−1.207* (0.218)	−1.298 (0.342)	−1.384* (0.357)
AFS	−0.021 (0.387)	−0.032 (0.017)	−0.047 (0.028)	−0.011 (0.237)	−0.034 (0.425)	−0.011 (0.152)
R&D	0.024** (0.045)	0.003** (0.084)	0.054*** (0.154)	0.018*** (0.163)	0.054*** (0.250)	0.040** (0.283)
Country-level controls						
GDP	0.341** (0.210)	0.290* (0.284)	0.389* (0.351)	0.281* (0.250)	0.348** (0.216)	0.418* (0.243)
INFL	−0.061 (0.224)	−0.047 (0.250)	−0.054 (0.217)	−0.313 (0.249)	−0.087 (0.338)	−0.055 (0.320)
GOVQ	0.154** (0.228)	0.229** (0.301)	0.189** (0.284)	0.194** (0.415)	0.247** (0.387)	0.233** (0.312)
Constant	−1.958*** (0.487)	1.788*** (0.371)	1.541** (0.534)	1.802*** (0.361)	2.547*** (0.587)	1.842*** (0.417)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Country effect	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2027	2027	2027	2027	2027	2027
R-squared	.315	.354	.283	.391	.254	.301

Note: Standard errors are reported in parentheses. Please see Table 2 for variable definitions.

***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

TABLE 8 The moderating effect of corporate governance disclosure index on the sustainability-for-performance metric

Type of analysis Dep. variables Model	Main sample ROA (1)	Better governed banks ROA (2)	Poorly governed banks ROA (3)	Main sample ROE (4)	Better governed banks ROE (5)	Poorly governed banks ROE (6)
Indep. variables						
SBD	0.001 (0.089)	0.007 (0.055)	0.001 (0.043)	0.002 (0.054)	0.004 (0.048)	0.002 (0.052)
CGDI*SBD	0.049*** (0.057)	0.191*** (0.043)	0.002** (0.070)	0.057*** (0.085)	0.152*** (0.091)	0.001** (0.095)
CGDI	0.047*** (0.034)	0.052*** (0.036)	0.003*** (0.047)	0.013*** (0.058)	0.024*** (0.047)	0.001*** (0.052)
Bank-level controls						
FSIZE	0.081*** (0.053)	0.085*** (0.054)	0.248* (0.062)	0.170* (0.080)	0.145* 0.077	0.283* (0.081)
LEV	−0.520* (0.039)	−0.321* (0.042)	−0259 (0.031)	−0.031 (0.045)	−0.039* (0.047)	−0.028 (0.053)
AGE	0.068* (0.031)	0.085** (0.029)	0.025* (0.038)	0.043* (0.049)	0.039* (0.047)	0.032* (0.042)
CAP	−1.927*** (0.041)	−0.790*** (0.038)	−1.987** (0.050)	−1.310*** (0.062)	−1.345*** (0.057)	−1.548** (0.044)
AFS	0.024 (0.096)	0.065 (0.087)	0.023 (0.013)	0.014 (0.087)	0.023 (0.090)	0.001 (0.093)
R&D	0.031** (0.058)	0.058*** (0.061)	0.012* (0.055)	0.012 (0.097)	0.012 (0.154)	0.002 (0.089)
Country-level controls						
GDP	0.254** (0.352)	0.259** (0.297)	0.250* (0.304)	0.231* (0.412)	0.280* (0.394)	0.291* (0.042)
INFL	−0.038 (0.235)	−0.029 (0.342)	−0.033 (0.297)	−0.055 (0.179)	−0.035 (0.170)	−0.044 (0.183)
GOVQ	0.198*** (0.223)	0.198*** (0.246)	0.204** (0.251)	0.131** (0.324)	0.139** (0.281)	0.151** (0.354)
Constant	−1.843** (0.357)	−1.236*** (0.398)	−1.545** (0.487)	0.391** (0.259)	0.230** (0.248)	0.149** (0.324)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Country effect	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2027	1166	861	2027	1166	861
R-squared	.255	.359	.268	.258	.323	.214

Note: Standard errors are reported in parentheses. Please see Table 2 for variable definitions.
***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

TABLE 9 The effect of corporate governance disclosure index on sustainable banking disclosure scores using 2SLS

Dep. variable Model	SBD (1)	Better governed banks (2)	Poorly governed banks (3)
Indep. variables			
CGDI	0.074*** (0.018)	0.348*** (0.015)	0.003* (0.024)
Bank-level controls			
FSIZE	0.415*** (0.020)	0.398*** (0.022)	0.385** (0.024)
LEV	−0.117 (0.219)	−0.546 (0.213)	−0.445 (0.223)
AGE	1.360*** (0.571)	1.928*** (0.213)	1.541*** (0.273)
CAP	−0.451** (1.130)	−0.542*** (1.127)	−0.952** (1.132)
AFS	2.054* (1.329)	1. 675** (1.250)	0.548* (1.529)
R&D	0.338** (0.157)	0.884** (0.189)	0.452** (0.940)
Country-level controls			
GDP	0.310 (0.356)	0.302 (0.269)	0.294 (0.271)
INFL	0.229 (0.354)	0.220 (0.197)	0.329 (0.204)
GOVQ	0.450** (0.631)	0.430** (0.554)	0.331* (0.584)
Constant	0.739*** (0.302)	0.323 (0.268)	0.502*** (0.983)
Year fixed effects	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes
Observations	1820	963	720
Endogeneity	.025	.054	.039
Over identification (p-value)	.311	.287	.275

Note: Standard errors are reported in parentheses. Please see Table 2 for variable definitions.
***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

sub-samples. This gives rise to two groups: better governed banks and poorly governed banks. The findings contained in Table 9 suggest that banks with higher *CGDI* value (better governed banks) tend to have higher positive and significant (0.191) *CGDI*SBD* moderating effect on *ROA* than poorly governed banks (0.002). Similarly, the positive moderating effect of *CGDI*SBD* on *ROE* is greater in magnitude in better governed banks (0.152), than in poorly governed banks (0.001). Overall, the results in Table 8 lend empirical support for Hypothesis 3 that *CGDI* positively moderates the relationship between *SBD* and *FP*, with the *SPS* being stronger in banks with high *CGDI* score. Theoretically, the findings are consistent with the predictions of *NIT*, which highlights efficiency and legitimation impact of *SBD* investments on *FP*. The implication is that, in better governed banks, senior managers are more likely to undertake sustainability initiatives which can legitimize the banks' operations. In addition, this ensures congruence with stakeholder interest and high-order value (Ntim & Soobaroyen, 2013). Based on efficiency *NIT* purview, the findings indicate that better governed banks have greater propensity to undertake more *SBD*, which enhances corporate efficiency and *FP*. Hence, *CGI* can act as a crucial catalyst on the *SPS* by minimizing conflict of interest among several stakeholders (Adu, 2021; Adu et al., 2022).

6.3 | Sensitivity analysis and endogeneity check

The study conducts a number of additional tests to check the robustness of the results. First, to control for unobserved firm-specific heterogeneity, simultaneity and dynamic endogeneity, the study follows Nguyen et al. (2021) and Adu et al. (2021) in using a two-stage least squares (2SLS) approach. Given that the focus of this investigation is on *CGDI*, *SBD* and *FP*, this study attempts to find good exogenous instrumental variables (*IVs*) for these main variables that are correlated with the assumed endogenous variables, but uncorrelated with the error term of the dependent variables (Nguyen et al., 2021). Following the findings of previous studies (Adu et al., 2022; Nguyen et al., 2021), the study treats the *CGDI* and the control variables as endogenous variables. Specifically, Table 9 provides details about the sensitivity and endogeneity checks concerning the impact of the *CGDI* on *SBD*. The study found similar results in Table 9 as were established in the main regression analysis in Table 5. For example, results in Table 9 show that *CGDI* has positive and significant impact on *SBD* in Models 1–3.

Next, the six regression results in Table 6 are repeated using *2SLS* approach, and the results are presented in Table 10. The results in Models 1–6 of Table 10 remain consistent with those in Models 1–6

TABLE 10 Effect of broad corporate governance disclosure index on sustainable banking disclosure scores using 2SLS

Dep. variables Model	ENVD (1)	SOC (2)	HAS (3)	EHR (4)	CIV (5)	EMP (6)
Indep. variables						
CGDI	0.029** (0.052)	0.089*** (0.042)	0.128*** (0.059)	−0.026 (0.064)	0.021 (0.037)	0.084*** (0.049)
Bank-level controls						
FSIZE	−0.574*** (0.210)	−0.405** (0.153)	−0.159 (0.131)	−0.658*** (0.194)	−0.701*** (0.224)	−0.314** (0.190)
LEV	−0.841 (0.653)	−0.730* (0.682)	−0.625** (0.598)	−0.731 (0.530)	−0.704 (0.543)	−0.772*** (0.531)
AGE	0.598 (0.394)	0.119*** (0.382)	0.853*** (0.551)	0.324 (0.589)	0.283*** (0.417)	0.780*** (0.488)
CAP	−0.785*** (1.982)	−1.365*** (1.537)	−1.732 (1.298)	−1.153*** (1.384)	−1.524*** (1.850)	−0.171** (0.236)
AFS	0.480 (0.721)	1.720** (0.592)	1.241** (0.583)	0.532 (0.410)	0.494 (0.381)	1.157* (0.330)
R&D	0.753** (0.198)	0.783*** (0.170)	0.254* (0.106)	0.389* (0.104)	0.244 (0.163)	0.533*** (0.274)
Country-level controls						
GDP	0.763* (0.402)	0.843* (0.754)	0.110 (0.357)	0.487 (0.204)	0.498 (0.355)	0.571* (0.302)
INFL	−0.658 (0.359)	−0.831 (0.492)	−0.088 (0.439)	0.457 (0.388)	−0.560 (0.443)	−0.471 (0.392)
GOVQ	0.398* (0.290)	0.439** (0.354)	0.635** (0.382)	0.402** (0.340)	0.537 (0.389)	0.753** (0.231)
Constant	0.751*** (0.853)	0.751*** (0.692)	0.632*** (1.350)	0.403*** (0.854)	0.187*** (1.224)	0.732*** (1.305)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Country dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1820	1820	1820	1820	1820	1820
Endogeneity	.031	.038	.024	.019	.021	.048
Over identification (p-value)	.284	.427	.358	.254	.381	.440

Note: Standard errors are reported in parentheses. Please see Table 2 for variable definitions.
***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

TABLE 11 The effect of the various components of sustainable banking disclosure scores on financial performance using 2SLS

Dep. variables	ROA (1)	ROA (2)	ROA (3)	ROA (4)	ROA (5)	ROA (6)	ROA (7)
Indep. variables							
SBD	0.007** (0.002)						
ENVD		−0.003 (0.002)					
SOC			0.015*** (0.019)				
HAS				−0.011** (0.023)			
EHR					0.007** (0.054)		
CIV						−0.014** (0.058)	
EMP							0.005** (0.019)
Bank-level controls							
FSIZE	0.024** (0.005)	0.004* (0.019)	0.020** (0.005)	0.017* (1.832)	0.039** (0.050)	0.061* (0.038)	0.051* (0.028)
LEV	−0.843*** (0.324)	−0.138** (0.005)	−0.151* (0.289)	−0.247* (1.925)	−0.213 (0.589)	−0.247* (0.393)	−0.189* (0.251)
AGE	0.093*** (0.135)	0.091*** (0.038)	0.082* (0.049)	0.063** (1.957)	0.078* (0.059)	0.071*** (0.080)	0.058* (0.037)
CAP	−0.127** (0.081)	−1.051*** (0.163)	−1.302*** (0.150)	−1.548*** (2.186)	−1.833* (2.201)	−1.434** (2.425)	−1.290* (2.822)
AFS	−0.060 (0.803)	−0.039 (0.325)	−0.039 (0.322)	−0.037 (0.433)	−0.051 (0.590)	−0.073 (0.342)	−0.094 (0.223)
R&D	0.008** (0.783)	0.027*** (0.019)	0.021*** (0.019)	0.005*** (0.189)	0.056* (0.557)	0.081*** (0.239)	0.067* (0.081)
Country-level controls							
GDP	0.331* (0.329)	0.420* (0.351)	0.447** (0.290)	0.457 (0.322)	0.329* (0.247)	0.258* (0.191)	0.480* (0.134)
INFL	−0.060 (0.327)	−0.061 (0.342)	−0.028 (0.413)	−0.087 (0.257)	−0.054 (0.375)	−0.047 (0.232)	−0.043 (0.371)
GOVQ	0.290*** (0.361)	0.209*** (0.361)	0.305* (0.298)	0.186** (0.354)	0.386** (0.201)	0.201** (0.134)	0.209*** (0.311)
Constant	−0.770*** (0.381)	−0.583*** (0.531)	−1.911*** (0.460)	1.802*** (0.579)	2.524*** (0.303)	1.857*** (0.482)	1.780*** (0.533)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1820	1820	1820	1820	1820	1820	1820
Endogeneity	.029	.011	.039	.042	.009	.023	.033
Over identification (p-value)	.391	.428	.234	.341	.287	.380	.501

Note: Standard errors are reported in parentheses. Please see Table 2 for variable definitions.
***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

TABLE 11 (Continued)

Dep. variables	ROE (8)	ROE (9)	ROE (10)	ROE (11)	ROE (12)	ROE (13)	ROE (14)
Indep. variables							
SBD	0.001** (0.005)						
ENVD		−0.013*** (0.006)					
SOC			0.010*** (0.058)				
HAS				−0.007** (0.034)			
EHR					0.009** (0.003)		
CIV						−0.006*** (0.029)	
EMP							0.004* (0.003)
Bank-level controls							
FSIZE	0.031** (0.092)	0.018* (0.531)	0.292* (0.384)	0.325** (0.383)	0.032* (0.191)	0.401** (0.239)	0.081* (0.410)
LEV	−0.143 (0.537)	−0.263* (0.029)	−0.329 (0.051)	−0.189 (0.024)	−0.274 (0.041)	−0.277 (0.092)	−0.172 (0.029)
AGE	0.060* (0.837)	0.082** (0.038)	0.083*** (0.281)	0.063*** (0.148)	0.082*** (0.354)	0.033* (0.348)	0.080 (0.734)
CAP	−1.349*** (0.435)	−1.590*** (0.083)	−1.254* (0.130)	−1.392* (0.236)	−1.301 (0.395)	−1.275* (0.391)	−1.390* (0.321)
AFS	−0.039 (0.365)	−0.044 (0.013)	−0.053 (0.032)	−0.025 (0.287)	−0.043 (0.389)	−0.067 (0.238)	−0.029 (0.160)
R&D	0.031** (0.029)	0.005* (0.066)	0.061*** (0.133)	0.020** (0.169)	0.061** (0.234)	0.042* (0.500)	0.040** (0.261)
Country-level controls							
GDP	0.338** (0.254)	0.305** (0.279)	0.427* (0.394)	0.299* (0.231)	0.357** (0.239)	0.284* (0.128)	0.422* (0.266)
INFL	−0.075 (0.230)	−0.053 (0.258)	−0.052 (0.223)	−0.356 (0.308)	−0.090 (0.415)	−0.029 (0.288)	−0.080 (0.367)
GOVQ	0.187* (0.243)	0.327** (0.311)	0.237** (0.219)	0.199** (0.308)	0.338* (0.357)	0.232** (0.270)	0.263** (0.384)
Constant	−1.802*** (0.439)	1.865*** (0.384)	1.584*** (0.569)	1.893*** (0.497)	2.987*** (0.534)	1.960*** (0.257)	1.621*** (0.420)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1820	1820	1820	1820	1820	1820	1820
Endogeneity	.025	.018	.031	.013	.029	.013	.030
Over identification (p-value)	.357	.369	.478	.271	.357	.480	.257

Note: Standard errors are reported in parentheses. Please see Table 2 for variable definitions.
*** ,** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

TABLE 12 The moderating effect of corporate governance disclosure index on the sustainability-for-performance metric using 2SLS

Type of analysis Dep. variables Model	Main sample ROA (1)	Better governed banks ROA (2)	Poorly governed banks ROA (3)	Main sample ROE (4)	Better governed banks ROE (5)	Poorly governed banks ROE (6)
Indep. variables						
SBD	0.002 (0.072)	0.008 (0.061)	0.003 (0.051)	0.001 (0.068)	0.002 (0.059)	0.004 (0.063)
CGDI*SBD	0.052*** (0.050)	0.189*** (0.027)	0.004** (0.072)	0.056*** (0.071)	0.162** (0.098)	0.004** (0.082)
CGDI	0.039*** (0.021)	0.056*** (0.048)	0.008*** (0.050)	0.018*** (0.051)	0.025*** (0.049)	0.002** (0.057)
Bank-level controls						
FSIZE	0.092*** (0.056)	0.088*** (0.049)	0.384* (0.059)	0.183* (0.099)	0.142* 0.087	0.279* (0.085)
LEV	−0.543* (0.040)	−0.342* (0.059)	−0237 (0.042)	−0.032 (0.059)	−0.041* (0.052)	−0.035 (0.042)
AGE	0.071* (0.044)	0.087* (0.035)	0.023* (0.054)	0.041* (0.022)	0.038* (0.030)	0.054* (0.032)
CAP	−1.903*** (0.038)	−0.802** (0.051)	−1.957*** (0.053)	−1.322*** (0.077)	−1.318** (0.069)	−1.581** (0.052)
AFS	0.032 (0.084)	0.072 (0.080)	0.025 (0.024)	0.022 (0.081)	0.039 (0.087)	0.004 (0.075)
R&D	0.038** (0.067)	0.069*** (0.068)	0.018* (0.057)	0.030 (0.084)	0.015 (0.137)	0.007 (0.073)
Country-level controls						
GDP	0.263** (0.343)	0.238** (0.214)	0.251* (0.324)	0.244* (0.495)	0.231** (0.380)	0.232* (0.085)
INFL	−0.041 (0.258)	−0.025 (0.308)	−0.035 (0.322)	−0.056 (0.187)	−0.037 (0.182)	−0.059 (0.178)
GOVQ	0.193*** (0.247)	0.172** (0.235)	0.237* (0.328)	0.148* (0.339)	0.146** (0.292)	0.172** (0.388)
Constant	−1.809** (0.413)	−1.247** (0.353)	−1.547** (0.480)	0.427* (0.334)	0.244** (0.235)	0.159*** (0.348)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Country effect	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1820	963	720	1820	963	720
Endogeneity	.050	.017	.031	.041	.028	.029
Over identification (p-value)	.270	.381	.487	.294	.340	.354

Note: Standard errors are reported in parentheses. Please see Table 2 for variable definitions.
***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

of Table 6, implying that the results are robust to the presence of any potential problems that may arise from unobserved bank-specific heterogeneity, simultaneity or endogeneity issues.

Further, the 14 regression results in Table 7 are repeated using *2SLS* approach, and the results are presented in Table 11. The results in Models 1–7 of Table 11 remain consistent with those reported in Models 1–7 of Table 7. Similarly, the regression results in Models 8–14 of Table 7 are repeated using *2SLS* approach, and the results are presented in Table 11. Observably, the results in Table 11 remain consistent with those reported in Table 7, suggesting that the results are robust.

Also, the study performs additional analysis to investigate possible endogeneities in the moderation impact of *CGDI* on the *SPS* using *2SLS* approach. The findings in Table 12 (Models 1–6) reaffirm the main results reported in Models 1–6 of Table 8 which suggest that banks' CG mechanisms significantly increase the *SPS* metric.

Next, the study conducts a dynamic two-step system generalized method of moments (GMM) in order to minimize the potential impact of omitted sample bias and dynamic endogeneity in the results (Arellano & Bond, 1991; Blundell & Bond, 1998). In particular, Blundell and Bond (1998) maintain that a dynamic two-step system GMM has the capacity to fix these two types of endogeneity.

Concerning the impact of *CGDI* on *SBD*, the GMM results reported in Table 13 are consistent with the main findings in Table 5. For example, results in Table 13 show that *CGDI* is positively related to *SBD*.

Also, the GMM results regarding the impact of *CGDI* on the individual dimensions of *SBD* measures contained in Table 14 are consistent with the main findings in Table 5. For example, with the exception of Models 4 and 5, *CGDI* is positively and significantly associated with the individual dimensions of *SBD*.

The GMM regression results in Table 15 are also consistent with our main findings in Table 7. For example, the results reported in Models 1–7 of Table 15 are consistent with results contained in Table 7 (Models 1–7).

Finally, the results in Table 16 support our findings in Table 8. Specifically, the results show that *CGDI* positively moderates the *SPS* metric.

Overall, the findings of these additional analyses demonstrate that the results do not appear to be driven by any potential endogenous sample selection problems.

Dep. variable Model	SBD (1)	Better governed banks (2)	Poorly governed banks (3)
Indep. variables			
CGDI	0.072*** (0.016)	0.332*** (0.017)	0.003* (0.021)
Bank-level controls			
FSIZE	0.435*** (0.022)	0.450*** (0.019)	0.308** (0.022)
LEV	−0.320 (0.217)	−0.521 (0.214)	−0.542 (0.228)
AGE	1.420*** (0.558)	1.873** (0.223)	1.536*** (0.258)
CAP	−0.459** (1.147)	−0.498** (1.123)	−0.907** (1.123)
AFS	0.954* (1.080)	1. 597** (1.225)	0.520* (1.518)
R&D	0.359** (0.142)	0.724** (0.182)	0.357** (0.193)
Country-level controls			
GDP	0.307 (0.348)	0.311 (0.259)	0.298 (0.267)
INFL	0.232 (0.341)	0.218 (0.170)	0.325 (0.228)
GOVQ	0.460** (0.658)	0.425** (0.530)	0.343** (0.574)
Constant	0.605*** (0.298)	0.328*** (0.259)	0.512*** (0.853)
Year fixed effects	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes
Observations	1820	963	720
AR1 (prob)	.002	.008	.009
AR2 (prob)	.247	.321	.385
Hansen J (prob)	.348	.415	.459

TABLE 13 GMM estimations of the effect of corporate governance disclosure index on sustainable banking disclosure score

Note: This table is based on a generalized method of moments (GMM) panel data estimator, as proposed by Arellano and Bond (1991) and Blundell and Bond (1998). The standard errors are shown in parentheses. Table 2 fully defines all the variables used.

***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

TABLE 14 GMM estimations of the effect of broad corporate governance disclosure index on sustainable banking disclosure scores

Dep. variables Model	ENVD (1)	SOC (2)	HAS (3)	EHR (4)	CIV (5)	EMP (6)
Indep. variables						
CGDI	0.034** (0.049)	0.080*** (0.035)	0.119*** (0.062)	−0.028 (0.069)	0.023 (0.030)	0.082*** (0.053)
Bank-level controls						
FSIZE	−0.592*** (0.194)	−0.417** (0.155)	−0.160 (0.142)	−0.603** (0.189)	−0.757*** (0.208)	−0.308** (0.213)
LEV	−0.890 (0.687)	−0.621* (0.703)	−0.724** (0.681)	−0.752 (0.628)	−0.628 (0.531)	−0.804*** (0.551)
AGE	0.654 (0.428)	0.118*** (0.395)	0.987*** (0.592)	0.343 (0.572)	0.252*** (0.403)	0.823*** (0.457)
CAP	−0.890*** (2.127)	−0.984*** (1.632)	−1.755 (1.303)	−1.162*** (1.390)	−1.584*** (1.792)	−0.168** (0.241)
AFS	0.324 (0.782)	1.781** (0.538)	1.230** (0.594)	0.384 (0.420)	0.520 (0.497)	1.182* (0.347)
R&D	0.789*** (0.213)	0.635*** (0.168)	0.249* (0.125)	0.375* (0.124)	0.220 (0.163)	0.545** (0.382)
Country-level controls						
GDP	0.782*** (0.501)	0.813* (0.702)	0.115 (0.342)	0.350 (0.251)	0.523 (0.375)	0.654* (0.323)
INFL	−0.703 (0.412)	−0.824 (0.420)	−0.071 (0.453)	0.432 (0.390)	−0.567 (0.438)	−0.450 (0.387)
GOVQ	0.395* (0.307)	0.401** (0.327)	0.683*** (0.359)	0.391** (0.338)	0.595 (0.390)	0.742** (0.249)
Constant	0.620*** (0.897)	0.785*** (0.703)	0.687*** (1.398)	0.337*** (0.882)	0.182*** (1.328)	0.758*** (1.334)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Country dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1820	1820	1820	1820	1820	1820
AR1 (prob)	.005	.009	.003	.001	.008	.005
AR2 (prob)	.198	.270	.351	.387	.247	.320
Hansen J (prob)	.254	.358	.542	.410	.329	.548

Note: This table is based on a generalized method of moments (GMM) panel data estimator, as proposed by Arellano and Bond (1991) and Blundell and Bond (1998). The standard errors are shown in parentheses. Table 2 fully defines all the variables used.

***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

TABLE 15 GMM estimations of the effect of various components of sustainable banking disclosure scores on financial performance

Dep. variables	ROA (1)	ROA (2)	ROA (3)	ROA (4)	ROA (5)	ROA (6)	ROA (7)
Indep. variables							
SBD	0.008** (0.002)						
ENVP		−0.004 (0.003)					
SOC			0.017*** (0.020)				
HAS				−0.088** (0.025)			
EHR					0.008*** (0.043)		
CIV						−0.009** (0.055)	
EMP							0.004** (0.016)
Bank-level controls							
FSIZE	0.019** (0.004)	0.002** (0.017)	0.022** (0.004)	0.018* (1.831)	0.037** (0.048)	0.058* (0.036)	0.052* (0.026)
LEV	−0.845*** (0.322)	−0.130** (0.006)	−0.152* (0.285)	−0.249* (1.920)	−0.220 (0.592)	−0.245* (0.390)	−0.178* (0.250)
AGE	0.098*** (0.137)	0.089*** (0.034)	0.080* (0.047)	0.067*** (1.952)	0.081* (0.057)	0.085*** (0.089)	0.057*** (0.033)
CAP	−0.120** (0.079)	−1.042*** (0.079)	−1.287*** (0.145)	−1.539*** (2.191)	−1.828* (2.226)	−1.429* (2.320)	−1.272* (2.771)
AFS	−0.062 (0.814)	−0.031 (0.330)	−0.037 (0.308)	−0.035 (0.431)	−0.048 (0.583)	−0.075 (0.339)	−0.095 (0.220)
R&D	0.007** (0.775)	0.022*** (0.018)	0.023** (0.497)	0.004*** (0.195)	0.057* (0.548)	0.086** (0.229)	0.064** (0.083)
Country-level controls							
GDP	0.334* (0.337)	0.415* (0.383)	0.434** (0.271)	0.450 (0.324)	0.345* (0.280)	0.260* (0.189)	0.482* (0.132)
INFL	−0.058 (0.301)	−0.060 (0.338)	−0.025 (0.418)	−0.083* (0.279)	−0.051 (0.372)	−0.042 (0.220)	−0.044 (0.379)
GOVQ	0.275** (0.353)	0.227** (0.359)	0.294* (0.301)	0.183** (0.350)	0.389** (0.351)	0.212** (0.136)	0.248** (0.319)
Constant	−0.779*** (0.384)	−0.608*** (0.597)	−1.903*** (0.468)	1.882*** (0.547)	2.756** (0.372)	1.920*** (0.473)	1.787*** (0.452)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1820	1820	1820	1820	1820	1820	1820
AR1 (prob)	.003	.005	.007	.008	.002	.010	.009
AR2 (prob)	.187	.208	.350	.242	.350	.265	.337
Hansen J (prob)	.235	.392	.489	.358	.492	.520	.394

Note: This table is based on a generalized method of moments (GMM) panel data estimator, as proposed by Arellano and Bond (1991) and Blundell and Bond (1998). The standard errors are shown in parentheses. Table 2 fully defines all the variables used.

*** , ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

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TABLE 15 (Continued)

Dep. variables	ROE (8)	ROE (9)	ROE (10)	ROE (11)	ROE (12)	ROE (13)	ROE (14)
Indep. variables							
SBD	0.005** (0.004)						
ENVP		−0.014*** (0.009)					
SOC			0.012*** (0.055)				
HAS				−0.004** (0.028)			
EHR					0.011** (0.004)		
CIV						−0.008*** (0.032)	
EMP							0.005* (0.006)
Bank-level controls							
FSIZE	0.029** (0.088)	0.017* (0.526)	0.301* (0.382)	0.328* (0.390)	0.034** (0.198)	0.387** (0.238)	0.077** (0.391)
LEV	−0.140 (0.528)	−0.259* (0.025)	−0.324 (0.049)	−0.183 (0.021)	−0.269 (0.043)	−0.271 (0.095)	−0.175 (0.032)
AGE	0.072* (0.843)	0.079*** (0.034)	0.080* (0.283)	0.066*** (0.144)	0.085* (0.351)	0.039* (0.350)	0.082 (0.740)
CAP	−1.352* (0.430)	−1.520*** (0.079)	−1.250* (0.128)	−1.389* (0.234)	−1.322 (0.391)	−1.269** (0.388)	−1.386** (0.330)
AFS	−0.036 (0.362)	−0.039 (0.018)	−0.051 (0.034)	−0.028 (0.280)	−0.040 (0.384)	−0.070 (0.235)	−0.026 (0.163)
R&D	0.029** (0.035)	0.008** (0.062)	0.057*** (0.130)	0.023*** (0.167)	0.063** (0.230)	0.047** (0.512)	0.042** (0.257)
Country-level controls							
GDP	0.343* (0.248)	0.318** (0.282)	0.431* (0.393)	0.294* (0.233)	0.351** (0.234)	0.287* (0.126)	0.428* (0.263)
INFL	−0.068 (0.235)	−0.050 (0.252)	−0.056 (0.220)	−0.358 (0.317)	−0.086 (0.403)	−0.027 (0.281)	−0.072 (0.364)
GOVQ	0.180* (0.247)	0.331** (0.328)	0.242* (0.215)	0.193* (0.322)	0.334** (0.351)	0.235** (0.262)	0.260** (0.381)
Constant	−1.925*** (0.474)	1.871*** (0.379)	1.568*** (0.577)	1.880*** (0.495)	2.980** (0.532)	1.974*** (0.251)	1.620*** (0.423)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1820	1820	1820	1820	1820	1820	1820
AR1 (prob)	.007	.005	.001	.008	.002	.005	.001
AR2 (prob)	.181	.234	.148	.351	.295	.321	.395
Hansen J (prob)	.289	.497	.265	.548	.340	.489	.517

Note: This table is based on a generalized method of moments (GMM) panel data estimator, as proposed by Arellano and Bond (1991) and Blundell and Bond (1998). The standard errors are shown in parentheses. Table 2 fully defines all the variables used.

***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

TABLE 16 GMM estimations of the moderating effect of corporate governance disclosure index on the sustainability-for-performance metric

Type of analysis	Main sample	Better governed banks	Poorly governed banks	Main sample	Better governed banks	Poorly governed banks
Dep. variables	ROA	ROA	ROA	ROE	ROE	ROE
Model	(1)	(2)	(3)	(4)	(5)	(6)
Indep. variables						
SBD	0.003 (0.074)	0.005 (0.069)	0.002 (0.058)	0.002 (0.063)	0.003 (0.057)	0.001 (0.069)
CGDI*SBD	0.055*** (0.047)	0.192*** (0.030)	0.007* (0.082)	0.059*** (0.074)	0.168** (0.095)	0.006** (0.087)
CGDI	0.045*** (0.029)	0.059*** (0.054)	0.005*** (0.063)	0.023*** (0.058)	0.027** (0.053)	0.004** (0.059)
Bank-level controls						
FSIZE	0.094*** (0.053)	0.079*** (0.055)	0.390* (0.062)	0.178** (0.091)	0.150* 0.089	0.282* (0.083)
LEV	−0.549** (0.043)	−0.350* (0.062)	−0229 (0.047)	−0.028 (0.058)	−0.043* (0.055)	−0.039 (0.045)
AGE	0.068** (0.040)	0.079** (0.037)	0.026** (0.057)	0.037** (0.024)	0.042* (0.034)	0.058* (0.034)
CAP	−1.872*** (0.031)	−0.848** (0.054)	−1.940** (0.056)	−1.329*** (0.080)	−1.312** (0.073)	−1.589** (0.057)
AFS	0.033 (0.079)	0.075 (0.082)	0.027 (0.025)	0.029 (0.078)	0.044 (0.091)	0.007 (0.083)
R&D	0.032* (0.064)	0.065*** (0.071)	0.020** (0.054)	0.035 (0.089)	0.017 (0.138)	0.009 (0.075)
Country-level controls						
GDP	0.268** (0.345)	0.242** (0.207)	0.256** (0.330)	0.251* (0.498)	0.236* (0.383)	0.234* (0.087)
INFL	−0.038 (0.240)	−0.029 (0.305)	−0.039 (0.325)	−0.059 (0.182)	−0.034 (0.180)	−0.054 (0.176)
GOVQ	0.196*** (0.254)	0.172** (0.241)	0.241** (0.332)	0.152** (0.343)	0.149** (0.287)	0.175* (0.392)
Constant	−1.813** (0.427)	−1.235** (0.350)	−1.530** (0.487)	0.430* (0.339)	0.248** (0.237)	0.163** (0.354)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Country effect	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1820	963	720	1820	963	720
AR1 (prob)	.005	.006	.009	.005	.007	.001
AR2 (prob)	.208	.294	.380	.307	.286	.297
Hansen J (prob)	.342	.429	.497	.501	.342	.452

Note: This table is based on a generalized method of moments (GMM) panel data estimator, as proposed by Arellano and Bond (1991) and Blundell and Bond (1998). The standard errors are shown in parentheses. Table 2 fully defines all the variables used.

***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

7 | CONCLUSION

A key approach to achieving the SDGs is to encourage firms to adopt and implement sustainable business initiatives. To gain more insight into this, the study analyses 220 banks in 16 SSA countries. The past two decades have witnessed the implementation of broad initiatives by national governments, regulators, environmental activists and policymakers towards enhancing sustainable business initiatives (Haque & Ntim, 2020). In the SSA countries, this goal has been advanced mainly through the issue of CG and integrated sustainable business practices codes across the region (Adu et al., 2022). Accordingly, banks in the region are increasingly focusing on sustainable banking initiatives as a way of increasing their *FP*. However, it is unclear whether sustainable banking strategies, which are progressively being adopted by banks, can lead to an improvement in *FP*. This is regrettable because understanding these key relationships can assist the board and policymakers to design sustainable strategies that have a meaningful impact on FP. This study explores the monitoring role (CG) on the *SPS*, by examining interrelationships among *CGDI*, *SBD* and *FP*. This study, therefore, contributes to the extant literature on business strategy and responsible banking in an emerging region in a number of ways.

Firstly, it investigates the under-research context of broad CG mechanisms in the banking system of SSA. The results contribute to the extant literature by showing that broad *CGDI* is positively associated with sustainable banking indicators. Further, the evidence shows that the positive effect of the *CGDI* on *SBD* is reinforced in better governed banks, but low in poorly governed banks in the SSA countries. Secondly, the study contributes to sustainable banking literature by offering insight on the effect of *SBD* on *FP* in SSA banks. Finally, the study distinctively provides first time insight on the crucial moderating role of CG mechanisms on the *SPS* in the SSA banks.

The findings have a number of policy implications. Firstly, the findings call for banks to adopt and implement good governance disclosures as such good CG mechanisms are proved to improve sustainable banking initiatives. Secondly, it can be inferred from the findings of the study that policy reforms in the SSA banks relating to monitoring (CG) and sustainable business initiatives (*SBD*) should be pursued jointly to ensure greater usefulness. Thirdly, the results of the study help in understanding of responsible banking initiatives by uncovering new dynamics that affect *SBD* and can assist senior managers to strategically manage sustainable banking initiatives. For instance, given the evidence of the positive moderating impact of *CGDI* on the *SPS*, this should serve as a strong motivation for banking practitioners to adopt high standards of CG mechanism as a key tool to drive the performance banks. Further, SBD score of the banks is generally low when compared with reported scores in other emerging regions. Accordingly, policymakers should provide explicit guidelines on sustainable business initiatives to improve *SBD* in the region. Importantly, it may be crucial for regulators to administer such sustainable banking standards as an obligatory policy in the countries.

Although the results of this study are robust to alternative estimations and models, the study has some limitations, including focusing on only internal CG variables. For instance, the study could not investigate the impact of external governance structures on the *SPS* mainly because such data were inaccessible in the SSA region. In terms of improvement in the *SPS* metric investigation, the study encourages future research to investigate other FP variables such as market-based indicators as and when data become available in the SSA banking sector. The findings provide empirical implications for policymakers in revealing the significance of CG mechanisms in the banking system and crucially in an emerging market.

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APPENDIX A: CORPORATE GOVERNANCE (CG) DISCLOSURE INDEX

CG theme	CG provision: Information on or reference to	Range of scores	Total score per theme
(i) Director and board	1. In case the roles of chairperson and MD/CEO are split is disclosed.	0–1	37
	2. Whether the chairperson of the board is an independent, non-executive director.	0–1	
	3. If majority of non-executive directors (NEDs) constitute the board of the bank.	0–1	
	4. Does the board meet at least four times in a year.	0–1	
	5. Does the bank disclose records of individual directors' meetings.	0–1	
	6. Whether the responsibilities of the board of directors is disclosed.	0–1	
	7. Classification of board of directors into executive, NED and independent.	0–1	
	8. Disclosure of the performance of the chairperson.	0–1	
	9. Disclosure of the effectiveness and performance of the CEO/MD.	0–1	
	10. Disclosure of the board's performance and effectiveness.	0–1	
	11. Disclosure of directors' biography, experience and responsibilities.	0–1	
	12. Disclosure of a narrative with regard to a policy on the issue of diversity of the board.	0–1	
	13. Disclosure of the position of a company secretary filled by a competent and suitable person.	0–1	
	14. Disclosure of the performance of the company's secretary.	0–1	
	15. As to whether directors have access to free independent professional legal advice.	0–1	
	16. Narrative relating to induction, training and personal development of directors.	0–1	
	17. Whether the size of the board in terms of number is disclosed.	0–1	
	18. Disclosure of the performance of individual board members.	0–1	
	19. Narrative on board charter, leadership duties and roles.	0–1	
	20. Disclosure of policy on staggered appointment and rotation of directors.	0–1	
	21. Disclosure of policy on multiple and alternate directorship of board members.	0–1	
	22. Disclosure on board independence, skills, experience and knowledge of the bank.	0–1	
	23. If the bank has established remuneration committee.	0–1	43
	24. If the remuneration committee is made up of only independent NEDs.	0–1	
	25. If the chairperson of the remuneration committee is an independent NED.	0–1	
	26. Disclosure of the remit of the remuneration committee.	0–1	

CG theme	CG provision: Information on or reference to	Range of scores	Total score per theme
	27. Disclosure of the performance of the remuneration committee.	0–1	
	28. Disclosure of the membership of the remuneration committee.	0–1	
	29. If the remuneration committee meets at least four times in a year.	0–1	
	30. Disclosure of the establishment of nomination committee.	0–1	
	31. If the nomination committee is made up of majority of independent NEDs is disclosed.	0–1	
	32. As to whether the remit of the nomination committee as well as the evaluation and assessment of the performance of committee is disclosed.	0–1	
	33. As to whether the nomination committee chairperson is an independent board member is disclosed.	0–1	
	34. As to whether the membership of the nomination committee of the board is disclosed.	0–1	
	35. Disclosure meeting attendance records of members of the nomination committee.	0–1	
	36. As to whether nomination committee meets at least four times in a year is disclosed.	0–1	
	37. Disclosure relating to the issue of technological failure and breakdown.	0–1	
	38. Whether share ownership by directors and officers is less than 50% of the total bank shareholdings.	0–1	
	39. Whether the performance of all board sub-committees' performance and effectiveness is evaluated is disclosed.	0–1	
	40. Whether there is a board statement on the going-concern status of the bank is disclosed.	0–1	
	41. Whether directors who hold directorships in other companies is disclosed.	0–1	
	42. Whether directors made statements regarding internal controls is disclosed.	0–1	
	43. Whether a narrative relating to directors' review of internal controls privately with auditors is disclosed.	0–1	
(ii) Accounting, auditing and transparency	44. Disclosure of the performance and evaluation of the audit committee.	0–1	22
	45. As to whether an audit committee has been established.	0–1	
	46. As to if the audit committee is made up of at least three independent NEDs.	0–1	
	47. As to whether the chairperson of the audit committee is an independent NED.	0–1	
	48. Disclosure of the remit of the audit committee.	0–1	
	49. Disclosure of the membership of the audit committee.	0–1	
	50. Disclosure of the audit committee members meeting attendance record.	0–1	
	51. At least one member of the audit committee has relevant financial training and experience.	0–1	
	52. Disclosure of the performance of the individual members of the audit committee.	0–1	

CG theme	CG provision: Information on or reference to	Range of scores	Total score per theme
	53. Disclosure of director's remuneration, interests and share options.	0–1	
	54. Disclosure of directors' philosophy and procedure.	0–1	
	55. Disclosure of a policy on timely and balanced information concerning the bank.	0–1	
	56. Disclosure of evaluation on the effectiveness of the risk management and governance of internal control and audit system.	0–1	
	57. Disclosure of a policy on risk management and governance strategy.	0–1	
	58. As to whether the audit committee meets at least four times in a year.	0–1	
	59. Disclosure of related party transactions or offers such as subsidiaries.	0–1	
	60. Policy to inhibit insider share trade before announcement of price sensitive information.	0–1	
	61. Existence of policies for appointing and disengaging external auditors.	0–1	
	62. Disclosure of annual financial performance of the bank.	0–1	
	63. Disclosure of policy on staggered appointment and rotation of directors.	0–1	
	64. Disclosure relating to the review of corporate operations.	0–1	
	65. Whether a narration relating to audit committees' ability to investigate any issue under its terms of reference, the resources and full access to information is disclosed.	0–1	
(iii) Risk management, internal audit and control	66. As to if a risk management committee has been established.	0–1	13
	67. Disclosure of the remit of the risk committee.	0–1	
	68. As to whether there is a disclosure of risk committee members' meeting attendance.	0–1	
	69. Disclosure of the membership of the risk committee.	0–1	
	70. As to whether risk management committee meets at least four times a year.	0–1	
	71. Disclosure of future systematic and non-systematic risk.	0–1	
	72. Disclosure of an existing internal system (e.g., internal audit).	0–1	
	73. Disclosure of how current and future evaluated bank risk will be managed.	0–1	
	74. Disclosure on issues relating to IT governance.	0–1	
	75. Disclosure on issues with regard to management and governance.	0–1	
	76. Disclosure relating to risk management, governance strategy and policy.	0–1	
	77. Disclosure on issues with regard to management and governance, internal control and audit systems.	0–1	
	78. If the risk management committee membership is made up of executives, non-executives and independent directors.	0–1	

CG theme	CG provision: Information on or reference to	Range of scores	Total score per theme
(iv) Compliance, shareholder rights and enforcement	79. Disclosure of the existence of one share–one vote.	0–1	
	80. Disclosure of on how the bank encourages shareholder activism (proxy vote).	0–1	
	81. Positive statements with regard to compliance with national CG code.	0–1	
	82. Disclosure on shareholder right to attend and also vote at annual general meetings.	0–1	
	83. Disclosure of how the bank is contributing to the development of financial journalism.	0–1	
	84. Disclosure of shareholders' right to have their views on pay.	0–1	
	85. Disclosure of the issue of general compliance.	0–1	
	86. Disclosure of the existence of right of shareholders to call extraordinary meetings.	0–1	
	87. Disclosure of right of shareholders to have timely information with regard to AGM.	0–1	
	88. Disclosure of shareholders' right to receive annual report, other relevant communications.	0–1	15
	89. Disclosure of shareholders' right to receive dividends and residual income out of liquidation.	0–1	
	90. Disclosure of a narrative with respect to equal treatment of all shareholders.	0–1	
	91. Disclosure of the use of modern ways of communication (e.g., email, website and skype).	0–1	
	92. Disclosure of a narrative with regard to shareholders' right to transfer and registration of share ownership.	0–1	
	93. Disclosure of provisions of corporate governance.	0–1	
	94. Whether a narrative that indicates that the board is accountable to shareholders is disclosed.	0–1	
	95. Whether governance committee is established is disclosed.	0–1	
	96. Whether there is a narrative that states that all shareholders have equal access to information about the bank is disclosed.	0–1	
	97. Whether there is a narrative indicating that voting responsibility increases with size of shareholding is disclosed.	0–1	
	98. Whether there is disclosure of policy to ensure no block persons have unfettered power.	0–1	
	99. Whether a narrative relating to effective communication among shareholders and other stakeholders is disclosed.	0–1	
	100. Whether a narrative relating to a policy on how the bank should relate with internal and external stakeholders is disclosed.	0–1	