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Asiedu, Michael Amoh; Mensah, Emmanuel

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\*Corresponding author: Michael Amoh Asiedu, Department of Accounting, Winneba School of Business, University of Education, Winneba 25, Ghana E-mail: maasiedu@uew.edu.gh

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## **GENERAL & APPLIED ECONOMICS | RESEARCH ARTICLE**

# Re-examining the corporate governance – Firm performance nexus: Fresh evidence from a causal mediation analysis

Michael Amoh Asiedu<sup>1</sup>\* and Emmanuel Mensah<sup>2</sup>

Abstract: The role that corporate governance (CG) plays in contributing to firm performance enhancements has been widely acknowledged. However, the conduit through which CG is able to affect firm performance is an emergent theme. This paper re-examines the relationship between corporate governance (CG) and firm performance via means of causal mediation analysis using financial reporting quality (FRQ) as a mediator. The study samples 104 companies listed on the respective stock markets of nine sub-Saharan African countries, and collects annual reports data spanning over a period of 2007 to 2019 for analysis using causal mediation. The study finds that a causal relationship exists between CG and firm performance, albeit through the transmission mechanism of FRQ. Again, the study finds that CG positively affects firm performance both directly and indirectly through the mediation of FRQ. The study is useful in highlighting for mangers and CG practitioners attention, an important channel through which CG would favourably affect firm performance, being FRQ. The current study is unique, in that it is the first panel multi-crosscountry investigation within Africa to introduce FRQ in the study of the relationship between CG and firm performance. It therefore extends the agency theory by employing FRQ as a mediating variable in the CG-firm performance nexus within the African context.

Subjects: Economics; Finance; Business, Management and Accounting

Keywords: Corporate Governance; Financial Reporting Quality; Firm-performance; Causal Mediation Analysis; Sub-Saharan Africa

JEL Classification: C33; C38; G30; G34; M41

### 1. Introduction

Corporate governance plays a crucial role in shaping a firm as well as making it competitive with global firms (Ehikioya, 2009; Iwasaki, 2008). Many corporate scandals in recent times have been attributed to weak corporate governance, which has led to fragile institutions that have opened them up to severe challenges (Khatib et al., 2022). Corporate governance legislation and guidelines issued by government agencies and international bodies, when implemented, have been argued to boost the performance of firms, and also attract foreign





© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent. investments to the host countries. These corporate governance codes ensure investors' safety, protecting them from corporate scandals. Empirical research on the linkage between corporate governance and firm performance has been concentrated in developed countries (Fan et al., 2011; Rajagopalan & Zhang, 2008). The literature evidence, however, is inconclusive on the role that corporate governance plays in relation to firm performance (Bhatt & Bhattacharya, 2015; Leng, 2004; Mohd Ghazali, 2010; Nicholson & Kiel, 2007). With globalization and the rise of economic importance of emerging and developing markets, there has been an escalation in the interests of researchers studying corporate governance in these developing countries. Additionally, the impact of corporate governance (CG) on firm performance in emerging markets has not been well established (Che Haat et al., 2008; Ponnu, 2008). Again, although CG has been observed to have an effect on firm performance, "the how," or the conduit through which CG is able to influence firm performance is largely unknown. This paper attempts to provide insights into the CG-firm performance nexus from an emerging market context, by re-examining this nexus through the lens of an indirect channel through which CG is able to affect the performance of firms. This study is a follow-up on that of Siagian et al. (2013) which presented conflicting findings regarding the relationship between CG and firm value being positive while the relationship between financial reporting auality (FRQ) and firm value was found to be negative. The authors therefore called for future studies to re-investigate these relationships to validate their findings and proffer possible reasons for this, or present contrary evidence that supports the theoretical and general contention of a positive association between these variables. This current study demonstrates that the mechanisms via which CG affects the performance of firms in a definite way involve complex internal systems and external out-workings to enhance the quality of financial reporting which send signals to investors and other stakeholders of a business' present circumstances and future and prospects, thereby eliciting favourable investor responses, and result in favourable performance outcomes. We hypothesize that, financial reporting auality, which we proxy by efficient earnings management (see also, A. Hasan et al., 2022) is a key internal mechanism through which the performance effect of CG may be determined in a definite way. Therefore, the current study seeks to re-examine the association between corporate governance and firm performance through the mediating role of financial reporting quality using firm samples from an African context.

The present study is novel in several ways. 1) This is the first multicross-country investigation within Africa to introduce and demonstrate the potential of financial reporting quality in serving as a transmission mechanism through which CG may affect firm performance in a definite way. 2) Cross-country panel investigations of the association between CG and firm performance have largely been non-existent within the African context, hence our contribution in this regard. 3) It is first study up to our knowledge, to examine FRQ as a mediation mechanism for realizing the favourable performance effects of CG systems, structures and practices. Through this, we support the agency's theoretical position regarding the CG – performance relationship by demonstrating how CG systems may translate to performance enhancements in firms, that is through FRQ. We envisage that; this will ignite further discourse on the possible transmission mechanisms needed to transmit the beneficial effect of CG systems including performance enhancements in firms.

The structure of the remainder of this paper is as follows. A discussion of the study context and a review of the literature and hypothesis development are presented in the next section, followed by details of the research design. Section 3 presents the study's empirical results and discussion of the findings. The final section (Section 4) presents the summary and conclusions indicating the study's limitations with some suggestions for future research.

#### 1.1. The context of the study

Unlike the majority of prior investigations which focus on developed economies, the current study focuses its investigation on developing countries sampled from Anglophone sub-Saharan Africa. Developing countries are defined as those in the mid-stream of development and refer to an

amorphous and heterogeneous group of countries primarily found in Africa, Asia, Latin America, the Middle East and Oceania. Economic, political and cultural differences exist between developed and developing countries (Bokpin and Ishaq, 2009; Adegbite, 2010; Baydoun et al., 2013). Rabelo and Vasconcelos (2002) argue that factors such as economic trends toward globalisation and structural characteristics of developing countries (under-developed capital markets and government interventionism) will make the CG model different from that found in European or North American contexts. The lack of skilled human resources suggests that companies in developing economies may experience difficulties attracting those with accounting or finance backgrounds to their audit and other governance committees. Cultural differences between developed and developing countries may also require different CG arrangements (Waweru, 2014); hence, a study such as this is needful.

As earlier noted, the current study focuses its investigation on the unique context of Anglophone sub-Saharan African countries. These countries have largely been absent from cross-country panel investigations concerning corporate governance, financial reporting quality and firm performance (Callao et al., 2014). Developing countries within sub-Saharan Africa which are predominantly Anglophone share similar characteristics. All of them have their corporate governance codes patterned after South Africa's King Report I, II or III (Mangena and Chamisa, 2008; Waweru and Prot, 2018). In addition, all of them being former British colonies belong to the British Commonwealth of States, and have their legal systems originated from British common law. These countries usually uphold certain common values and have ties that bind them together, for example, adhering to Uniform Corporate Governance (CACG). They have unitary board structures, and all follow CACG's 15 principles on CG which set out for corporate boards to:

- Exercise leadership enterprise, integrity and judgment in directing their corporations;
- Ensure board appointments provide a mix of proficient directors;
- Determine the corporation's purpose and values and determine the strategy to achieve its purpose and to implement its values;
- Monitor and evaluate the implementation of strategies, policies, management performance criteria and business plans;
- · Ensure compliance with relevant laws, regulations and codes of best business practice;
- Ensure effective communication with shareholders and other stakeholders;
- Serve the legitimate interest of shareholders;
- Identify other stakeholders and formulate appropriate policies on how to relate with them;
- Ensure an appropriate balance of power and authority on the board;
- Conduct regular and effective review of internal controls;
- Regularly conduct board performance assessments as well as performance assessment of individual directors;
- Appoint CEO, participate in senior management appointments, and also ensure the motivation and protection of corporate intellectual capital, having adequate training for management and employees and a succession plan for senior management;
- Ensure that appropriate technology and proper systems are in place to run the corporation's business;
- Identify key performance indicators and risk areas in the business and monitor these;
- Ensure that the corporation will continue as a going concern for its fiscal year.

Furthermore, many rich and diverse cultures are to be found throughout the Commonwealth countries. However, all have standard features, which means that consensus on a global scale is more easily achieved than among equally diverse countries which do not enjoy such commonalities. It is in this regard that the CACG is better-placed to harness the unique characteristic of "commonwealthness" to facilitate the communication and promotion of transparent CG disclosure principles amongst various nations across the globe, and particularly within Anglophone subSaharan African countries whose cultural history regarding disclosure and transparency in corporate governance practices have been shrouded in secrecy. A study, such as the current one which focuses on developing countries from Africa would thus serve to give more impetus for bestpractice corporate governance advocate institutions, such as the CACG to advance their advocacy and policy conversations on the topic of the transmission and adoption of best-practice governance models on corporate boards of African firms. This role of the Commonwealth is especially significant in the current process of globalization. Besides, the findings of the current study would also point to areas that need strengthening in terms of CG reform efforts aimed at creating a culture of transparency in corporate governance within sub-Saharan Africa.

#### 1.2. Literature review and hypotheses development

The traditional agency theory intimates a positive association between CG and firm performance, with some empirical studies confirming this intimated relationship (Heo, 2018; Khatib, Abdullah, Al Amosh, et al., 2022; Kyereboah-Coleman et al., 2007; Osman & Samontaray, 2022; Tornyeva & Wereko, 2012). However, some other studies including the recent findings of Ali et al. (2022) contradict the traditional agency theory and reveal adverse or insignificant effects of CG on firm performance or value (see also, Abdullah & Page, 2009). Long ago, Shleifer and Vishny (1997), Claessens and Fan (2002), Denis and McConnell (2003), Gillan (2006) have given detailed surveys on the relationship between corporate governance and firm performance. As already alluded to, the evidences have always been mixed with positive (Goel et al., 2022), negative (Farhan et al., 2017), and insignificant (Coskun & Sayilir, 2012; P. K. Pham et al., 2011) results from several studies. Largely, the importance of context which cannot really be captured effectively in the metrics of quantitative studies have been cited to explain these contrasting findings. Heracleous (2001) had long argued that the accepted "Best Practices" on corporate governance has generally failed to find a convincing link between these practices and organisational performance. Heracleous (2001) noted the possibility of systemic factors that influence or account for the conflicting evidences from CG studies, and as such, there is a need for research models and paradigms that can explain the systemic and multi-directional influences. The present study, recognising the conflicting findings of prior studies regarding the effect of CG on firm performance with plausible reasons adduced for each study's findings, nonetheless argues from the agency's theoretical position and hypothesizes that CG is positively related to firm performance through the intervention of certain transmission mechanisms. The agency theory which underscores the inherent agency problem of conflict of interest, which arises as a result of the separation between ownership and control, also recognises the effectiveness of sound CG systems in disciplining management, constraining managerial opportunism, and aligning managerial interest with those of shareholders. With CG aligning the interests of managers with shareholders, there is a goal congruence regarding efforts to improve corporate outcomes, which also insures the benefit of both managers and shareholders. Thus, we specify our first hypothesis as:

#### H1: CG has a positive relationship with firm performance

As earlier explained, effective governance practices stem from the agency theory perspective, where the primary responsibility of a board is to monitor the management and protect the shareholders from any conflict of interest that arises due to the separation of ownership and control (Jensen and Meckling, 1976). The divergence of the objective of managers and shareholders leads to agency cost. Agency costs become acute at the time of poor firm performance (Bebchuk & Fried, 2003). Effective monitoring can bring down these agency costs, thereby improving firm performance. The monitoring functions of the board may include ratification of major decisions, the threat of management entrenchment, planning CEO succession and rewarding the management (Conyon & Peck, 1998; Eisenhardt, 1989; Pitcher et al., 2000; Strebel, 2004). Another prominent board monitoring function is to check managerial excesses relating to earnings management behaviour such that efficiency outcomes of earnings management are elicited instead of opportunistic outcomes. When earnings management is opportunistic, FRQ exhibits a negative relationship with firm performance (Elkalla, 2017; Rezaei & Roshani, 2012). However, when earnings management is efficient, FRQ exhibits a positive relationship with firm performance (Boachie & Mensah, 2022; Deegan, 2009). We therefore present FRQ as an important transmission mechanism or channel through which CG may favourably affect firm performance. The quality of financial reporting within a firm is reminiscent of the quality and effectiveness of the firm's CG systems. Robust and effective corporate governance systems also strengthen the quality of financial reporting which invariably elicits efficient and favourable performance outcomes. We therefore hypothesize that:

#### H2: CG has a direct relationship with FRQ

The current study further conceptualizes and hypothesizes that the CG – performance relationship may be mediated by financial reporting quality (FRQ), and an appreciable level of FRQ may be a necessary condition to realise any favourable performance effects of CG practices in firms. Again, the conduits through which CG might affect firm performance involve, the effective interplay of diverse CG mechanisms working together to monitor managerial behaviour to achieve convergence of interests, such that, efforts by managers to enhance profitability would be undertaken by increasing the operational activities of the firm (Mahrani & Soewarno, 2018), as well as taking prudent steps in, for example, smoothing or postponing real earnings recognition to influence the total corporate tax burden. These efficient earnings management actions also enhance financial reporting quality. Consequently, these actions would send positive signals to market participants of a healthier management of the financial affairs of the firm; investors and creditors would respond by extending more investible funds to the firm, thus allowing the firm to exploit real opportunities for growth and enhancement of its financial performance (see also, Kim et al., 2021). Thus, FRQ seems to serve as a transmission mechanism or mediator for the realization of favourable performance effects of CG practices of firms. In light of the foregoing, the study endeavoured to test its third hypothesis as follows:

H3: FRQ favourably mediates the relationship between CG and firm performance

#### **1.3.** Conceptual framework of hypothesized relationships

Both theoretical and empirical literature demonstrate the inter-linkages between CG and FRQ (see e.gs., Bhuiyan et al., 2010; M. T. Hasan, 2020; Proimos, 2005), FRQ and firm performance (see e.gs., Afrizal et al., 2021; Dechow et al., 1995; Mangala & Dhanda, 2019), as well as CG and firm performance (see e.gs., Ali et al., 2022; Farhan et al., 2017; Goel et al., 2022). Recognising these inter-linkages, the diagram below demonstrates inter-linkages among CG, FRQ and firm



**Source**: Authors' depiction of the inter-linkages among CG, FRQ and firm performance (2023).



performance (see, Figure 1), coupled with an analytical framework depicting the mediating role FRQ plays in the CG—firm performance relationship (see, Figure 2).

Figure 2 presents the frame of reference for the study's analytical models, wherein, the direct relationship between CG and firm performance is examined with attendant controls on the one hand, and the controlled direct and natural indirect effects of CG on firm performance with an identified mediator is assessed, on the other hand,

The following section presents a description of the methods for data gathering, and analysis of data via means of econometric models towards addressing the study's objectives and hypotheses.

#### 2. Data and method

A sample is drawn from listed non-financial firms in nine Stock Exchanges within sub-Saharan Africa. Following previous studies (Dittmar & Mahrt-Smith, 2007; Schultz et al, 2010), we exclude insurance companies and banks from our sample because financial firms are very different in many respects from non-financial firms, and as well, the choice of a suitable FRQ model adopted for non-financial firms may not be appropriate for financial firms. The choice of the study's final sample was guided by the availability and adequacy of firms audited annual reports and corresponding financial data sourced from the databases of Africanfinancials and Machameratios covering a period of thirteen years from 2007 to 2019. The study focuses its examination of CGQ of firms within its sample sub-Saharan African countries from 2007 because the timeline for the development of CG codes among the sampled countries indicates that many of the surveyed countries introduced or revised their CG codes around 2006.<sup>1</sup> Hence, 2007 and afterwards were deemed appropriate for CG quality assessments across sampled countries. Table 1 presents how the final sample selection was arrived at.

The audited annual reports data on listed firms sourced from AfricanFinancials and MachameRatios databases were converted into a panel dataset for analysis. Data on firmlevel CG mechanisms were hand-collected from firms' annual reports using respective country codes as well as the CACG CG principles as guides because all the countries from which the sampled firms were sourced happen to be Anglophone and belong to the British Commonwealth of States. As such, they share common characteristics that allow them to be targeted for a study such as this. The variables used in the study's analysis have been





**Source**: Authors' conceptual framework of the mediating role of FRQ in the CGQ – firm performance nexus (2023).

Table 1. Sample s	election			
Country of sampled firms	Number of non- financial firms whose annual reports data were sourced from Africanfinancials and Machameratios databases for the study period	Number of firms with missing annual reports data over the study period	Number of firms whose missing annual reports data were deemed inadequate (i.e., having less than half of the annual reports data covering the study period), hence excluded from the sample	Number of firms with annual reports data deemed adequate (i.e., covering more than half of the study period) and therefore retained in the study sample
Ghana	5	0	0	5
Kenya	11	3	0	11
Malawi	2	2	0	2
Mauritius	5	3	0	5
Nigeria	40	8	3	37
Namibia	2	2	0	2
South Africa	35	13	0	35
Tanzania	3	0	0	3
Zambia	4	2	0	4
Total	107	33	3	104

Source: Authors' compilation of annual reports from Africanfinancials and Machameratios websites.

explained under the sub-section 3.1 and also summarised in Table 2. The variables and how there were measures are further explained in Appendix Panel A to C.

#### 2.1. Description of study variables

#### 2.1.1. Dependent variable: firm performance

Performance may be conceived and measured in several ways for different organisations such as ROA, ROE and Tobin's Q. Performance, however, refers to how well a firm has generated returns or value for its finance providers and other stakeholders. This research uses ROA instead of ROE as its measure of performance because it reflects the returns generated for all corporate finance providers which includes equity providers of finance, whereas ROE reflects returns generated for only equity providers of finance which is a bit restrictive and does not recognise the contributions of other corporate stakeholders. Tobin's Q as a measure of market performance is also used for robustness checks of the study's results. ROA measures the competitiveness of the company and the efficiency of management, whereas Tobin's Q measures the market performance of a firm. ROA was computed as follows:

#### $ROA_{i,t} = EBIT_{i,t}/A_{i,t}$

where  $EBIT_{i,t}$  refers to profit before interest and tax for firm (i) in year (t), and  $A_{i,t}$  also refers to total assets for firm (i) in year (t).

2.1.2. Mediating variable: financial reporting quality proxied by discretionary accruals Several proxies for FRQ exist in the literature including value-relevance, accruals models and qualitative characteristics of financial statements. However, for purposes of relevance and

Table 2. Measurement of variables use	ed in the study's models		
Variable	Scale	Source	Expected Sign
Outcome Variable: ROA Return on Assets (Proxy for Firm-Performance/ Profitability)	This is measured by $ROA_{i,t} = EBIT_{i,t}/TA_{i,t}$ Where: $EBIT_{i,t} = Profit before interest and tax for firmi in year tTA_{i,t} = Total Assets for firm i in year t$	Annual reports of firms	
Mediator Variable: FRQ (proxied by Discretionary Accruals—i.e., DA)	This is measured using the Pae (2005) Discretionary Accrual's Model, $M_{q=1}/A_{t-1}$ $+_2ARev_t/A_{t-1}$ = PFE $_t/A_{t-1} +_4CFO_t/A_{t-1}$ $+_5CFO_{t-1}/A_{t-1}$ Where: $A_{t-1} = total assets in the year t-1$ $ARev_t = the change in revenues from thepreceding yearPFE_= the gross value of property, plant andequipment in the year tCPO_= operating cashflows in the year t-11, 2, 3, 4, 5 = firm-specific parametersEstimates of the firm specific parameters aredone via the model:TA_t/A_{t-1} = \alpha_1/A_{t-1} + \alpha_2ARev_t/A_{t-1} + \alpha_3PE_t/A_{t-1}Where:TA_t/A_{t-1} = \alpha_1/A_{t-1} + \alpha_5CFO_{t-1}/A_{t-1} + \varepsilon_tWhere:Total accruals (TA) is defined as incomebefore extraordinary items and discontinuedoperations minus operating cash flows, thatis, TA_t = NOP_t - CFO_t$	Annual reports of firms	+1
Exposure variable:			
<b>CGQ</b> Corporate Governance Quality	This is measured as an index for firm i in year t, on the basis of firm-level disclosures on CG mechanisms. The CGQ index was constructed via means of rotated principal component analysis.	CACG cum OECD CG Guidelines, SEC CG Codes for respective countries, Annual reports of firms	+1
			(Continued)

Table 2. (Continued)			
Variable	Scale	Source	Expected Sign
Control Variables:			
IFRS Adoption	This is a dummy variable measured as 1 since a firm's adoption of IFRS and 0 otherwise.	Annual reports of firms	+1
ASSTANG Asset Tangibility	This is measured as the ratio of tangible assets to total assets of firm i in year t.	Annual reports of firms	+
Leverage	This is measured by the total liabilities to total assets. It is represented in logarithm form	Annual reports of firms	-
<b>SIZE</b> Firm size	This is measured as the logarithm of a firm's total assets	Annual reports of firms	+
<b>GRWTH</b> Growth Opportunities	This is measured as the price-to-book ratio for firm i in year t.	Annual reports of firms	+
<b>AGE</b> Age of Firm	The is measured as the age of a firm from the date of listing on the stock market to the end of the sample period. It is represented in logarithm form.	Annual reports of firms	+
$m{\varepsilon}_{i,t}$ Error term	The error term		
Source: Authors' Compilation, 2023.			

convenience, the current study utilises discretionary accruals as its proxy for FRQ (see also, M. T. Hasan, 2020). Discretionary accrual (DA) is a non-mandatory expense or asset recorded within the accounting system that has yet to be realised. An anticipated bonus for management is an example of a discretionary accrual. Using the raw accruals amounts as a proxy for FRQ is a simple method to evaluate FRQ because firms can have high accruals for legitimate business reasons such as sales growth. A more complicated proxy can be created by attempting to categorize total accruals (TA) into nondiscretionary (NDA) and discretionary (DA) accruals. The nondiscretionary component reflects business conditions such as growth and length of the operating cycle that naturally destroy accruals, while the discretionary part identifies management choices (Keefe, 2013). The result of pulling discretionary accrual amounts from the total accrual amounts is a metric that reflects accruals due to management's choice alone. Thus, there appears to be no business reason for these accruals; hence, discretionary accrual is a better proxy for FRQ. Of the several aggregate accruals proxies advanced in the literature for measuring FRQ, the current study settles on the Pae (2005) model of discretionary accrual as suitable for the characteristics of the study's sample data. The following Pae (2005) model for total accruals was specified for the present study:

$$TA_t = \alpha_1 1 / A_{t-1} + \alpha_2 \Delta \text{Rev}_t / A_{t-1} + \alpha_3 \text{PPE}_t / A_{t-1} + \alpha_4 CFO_t / A_{t-1} + \alpha_5 CFO_{t-1} / A_{t-1} + \varepsilon_t$$
(1)

Whereas the non-discretionary accruals component is specified by the following model:

$$NDA_{t} = \alpha_{1} 1 / A_{t-1} + \alpha_{2} \Delta Rev_{t} / A_{t-1} + \alpha_{3} PPE_{t} / A_{t-1} + \alpha_{4} CFO_{t} / A_{t-1} + \alpha_{5} CFO_{t-1} / A_{t-1}$$
(2)

where;TA<sub>t</sub> is total accruals calculated as net operating income (NOPI) minus cash flows from operations for each year t (i.e.  $TA_t = NOPI_t - CFO_t$ ); NDA<sub>t</sub> is the non-discretionary accruals for each year t;  $CFO_{t(t-1)}$  is cashflows from operations for each year t, or (t-1);  $\Delta Rev_t$  is the changes in the revenue (from credit sales) for each year t; PPE<sub>t</sub> is the Property, Plant and Equipment for each year t;  $A_{t-1}$  is the total assets at the end of period (t-1);  $\varepsilon_t$  is the random error, which is used as the estimate for DA (i.e. discretionary accruals which is ordinarily calculated as total accruals minus non-discretionary accruals). The coefficients:  $\alpha_1\alpha_2\alpha_3$  are estimates of firm-specific parameters 1, 2, 3 respectively, through OLS regression from Equation 1. Hence, the proxy for FRQ is the absolute value of residuals multiplied by \_1, (i.e.,  $-|\varepsilon_t|$ ) and a higher value represents higher FRQ.

#### 2.1.3. Independent variable: corporate governance quality

The environment in which companies operate has rapidly changed and become more competitive in recent decades (Revilla et al., 2005; Vuola & Hameri, 2006). If companies are to seize these opportunities and stand up to the accompanying risks, then developing effective and efficient control systems is required. Corporate governance (CG) forms an essential part of this control system, with prior studies suggesting a direct correlation between the strength of a firm's CG with its internal control quality (Elbannan, 2009) and performance (Goel et al., 2022; Osman & Samontaray, 2022). Conceptually, there is no universally held or single definition of CG (Mayes et al., 2001). As a result, CG can be defined and practised in different ways globally, depending upon the relative power of owners, managers, and capital providers (Craig, 2004). Generally, CG can be defined as a procedure, customs, laws, policies, and institutions that affect how a corporation is directed, administered or controlled. It can also be the relationships between stakeholders and the goals already laid down for the corporation to follow. In essence, corporations are expected to have and comply with laid-down rules, systems and policies regarding relationships among their varied stakeholders towards achievement of their objectives.

Corporate Governance Quality (CGQ) therefore refers to compliance with codified laws, bestpractice ethics, systems, internal and external mechanisms, and factors that control operations at an organisation and to which the organisation remains accountable. Corporate governance may be severally measured, often based on its mechanisms such as board size, board meetings, board independence, board committees, etc. However, an index measure of corporate governance may be constructed based on the aggregation of individual mechanisms. Brown et al. (2011) stated that the quality of a firm's corporate governance is best seen as its score according to some index constructed from a set of governance indicators or characteristics. The current study constructs its CGQ indices in similitude with governance indices used by other authors (Azeem et al., 2013; Larcker et al., 2007; P. K. Biswas, 2013; Prommin et al., 2012, 2014, 2016; S. Biswas et al., 2022; Sawicki, 2009) in measuring corporate governance quality. Overall, 25 corporate governance mechanisms were used to construct the study's CGQ indices via means of rotated principal component analysis for firms based on firm-level disclosures (see Appendix). These CGQ indices for firms range from approximately -1.5 to +2.6, with larger values indicating better corporate governance quality. We justify our choice of CGQ composite indices on two grounds: (1) Considering that so little work has been done on governance in general in emerging economies, we sought to cast our net widely in our search for components that may shed light on our research questions (see also, P. K. Biswas, 2013; S. Biswas et al., 2022); (2) As reported earlier on by Tang and Chang (2015), appraising a firm's governance guality based on individual mechanisms or isolated dimensions might be inadequate. CG is a complex system consisting of numerous monitoring mechanisms from various dimensions, such as board characteristics and ownership structure. To achieve optimal supervision, the mechanisms must work closely together. Moreover, as earlier indicated by Chen et al. (2007), most previous studies have investigated the effect of CG by using specific governance characteristics, ignoring the possibility that other governance mechanisms serve as a complement or that, one characteristic is a proxy of another characteristic (see also, Wang et al., 2022). Again, Yeh et al. (2012), who used a governance index covering variables of ownership structure and board structure, argued that the benefit of incorporating governance mechanisms from various dimensions avoids the confounding effects in which different perspectives yield different predictions on CGQ. Therefore, given the lack of theory on corporate governance structure, we argue that governance guality jointly measured according to various governance facets accurately represents a firm's overall governance quality instead of individual CG mechanisms used in some studies such Ben Salah and Jarboui (2021). Moreover, given the inherent limitations with all constructs of CGQ indices, $^2$  the authors believe that CGQ indices constructed by an efficient data reduction technique known as the rotated principal component analysis (RPCA) are appropriate for the study.<sup>3</sup> RPCA seems to be a more appropriate process of constructing a measure of CG since it identifies the governance indicators which are highly correlated (Dey (2008). In addition, the study's CGQ index sought to represent something like picking subsets of the original CG items that "goes together" in terms of being about a common theme; hence -rotate- was deemed a useful tool since our goal was not simply to reduce the number of variables we are working with.

#### 2.1.4. Other control variables

Aside CGQ, several other variables have been controlled in the study's estimation including firm size (Zhou et al., 2017), growth opportunities (Kothari et al., 2002), leverage (N. Pham et al., 2015), firm age (Lin & Fu, 2017), IFRS adoption and asset tangibility (Key & Kim, 2020; Liu et al., 2011; Mensah, 2021; Singh, 2017) have also been controlled for in the study's estimations in line with recommendations from the literature. The measures for these variables have been summarized in Table 2.

#### 2.2. Model specification and estimation

The study initially specified a static model for analysing the CG and firm performance relationship. Thereafter, a dynamic model with an AR(1) structure which recognizes the dynamic nature of the CG—firm performance relationship is formulated by including a one-year lagged ROA variable as an additional explanatory variable to capture the influence of the past on the current realisations of performance (see also, Munisi & Randøy, 2013; Ndu et al., 2019).

Static Model Specification:

$$ROA_{it} = \alpha_0 + \alpha_1 CGQ_{it} + \alpha_2 DA_{it} + \alpha_3 SIZE_{it} + \alpha_4 LEV_{it} + \alpha_5 GRWTH_{it} + \alpha_6 AGE_{it} + \alpha_7 IFRS_{it} + \alpha_8 ASSTANG_{it} + \nu_i + \mu_i + \eta_t + \varepsilon_{it}$$
(3)

Dynamic Model Specification:

$$ROA_{it} = \alpha_0 + \alpha_1 ROA_{it-1} + \alpha_2 CGQ_{it} + \alpha_3 DA_{it} + \alpha_4 SIZE_{it} + \alpha_5 LEV_{it} + \alpha_6 GRWTH_{it} + \alpha_7 AGE_{it} + \alpha_8 IFRS_{it} + \alpha_9 ASSTANG_{it} + \nu_i + \mu_i + \eta_t + \varepsilon_{it}$$
(4)

Where  $ROA_{it}$  refers to the dependent variable for firm i in year t/(t-1). The independent variables comprise: SIZE<sub>it</sub> which refers to Firm-Size;  $GRWTH_{it}$ , which refers to Growth Opportunities;  $AGE_{it}$  which refers to Firm-Age from its date of incorporation;  $LEV_{it}$  which refers to Leverage;  $IFRS_{it}$  which refers to IFRS Adoption;  $ASSTANG_{it}$  which refers to Asset Tangibility;  $DA_{it}$  which refers to Discretionary Accruals (the proxy for FRQ); and  $CGQ_{it}$  which refers to Corporate Governance Quality.  $\nu_i$ ,  $\mu_i and \nu_t$  are, respectively, additional controls for firm-specific effects, country heterogenous effects that are time invariant and year-fixed effects that are time variant and common to all companies, whereas  $\varepsilon_{it}$  refers to the stochastic disturbance term.

Upon the evidence of a weak direct association between CG and firm performance ascertained from the study's previous static and dynamic model estimations, the study further endeavoured to re-examine the effect of CG on firm performance via means of mediation analysis where FRQ is used as a mediating variable. The study specifies its mediation models for analysis by following the standard approach of Baron and Kenny (1986) as follows:

Model for the Outcome (with Mediator)

$$E[Y|a,m] = \alpha_1 + \beta_1 a + \theta \tag{5}$$

Model for the mediator

$$E[M|\mathbf{a}] = \alpha_2 + \gamma \mathbf{a} \tag{6}$$

Where,  $\beta_1$  is the direct effect,  $\theta_{\gamma}$  is the indirect effect (product method).

The controlled direct effect that compares outcomes under treatment level A = 1vs. A = 0, fixing M=m:

$$CDE(m) = E(Y(1,m)) - E(Y(0,m))$$
(7)

Where CDE(m) depends on M level m.

The natural direct effect that compares outcome under treatment level A = 1vs. A = 0, fixing M=M (0), is:

$$NDE_0 = E(Y1, M(0)) - E(Y(0, M(0)))$$
(8)

Moreover, the natural indirect effect that compares outcomes under M=M(1) vs. M=M(0), fixing A = 1, is:

$$NIE_{1} = E(y(1, M(1)) - E(Y(1, M(0)))$$
(9)

Finally, the total causal effect can be decomposed as:

$$TCE = E(Y(1)) - E(Y(0)) = NDE + NIE$$
 (10)

In line with Baron and Kenny (1986), the present study therefore formulates its models for outcome (i.e., ROA) and mediator (i.e., DA) with CGQ as the exposure variable for analysis as follows:

$$E[ROA|CGQ, DA] = \alpha_1 + \beta_1 CGQ + \theta DA + \sum CONTROLS$$
(11)

$$E[DA|CGQ] = \alpha_2 + \gamma CGQ + \sum CONTROLS$$
(12)

Where  $\beta_1$  is the controlled direct effect (which is the treatment effect neither due to mediation nor interaction),  $\theta_{\gamma}$  (i.e., the product) represents the natural indirect effect (which is the treatment effect only due to mediation), and *CONTROLS* are used in the model to capture the effects of confounding variables.

#### 2.3. Estimation approach

The study estimates its static models using the fixed effect (FE) estimation strategy which was suggested by the Hausman specification test as the ideal estimation strategy for analysing Equation 1. The pooled OLS with cluster robust standard errors estimator was also employed for robustness test. Furthermore, the endogenous determination as well as the dynamic correlation between current DA cum CGQ with past performance has been documented by previous research (e.g., Wintoki et al., 2012); thus, a regression of performance variable on CGQ variable in which other firm-specific variable(s) including DA are controlled for, could be examined in a dynamic framework as displayed in Equation 2. With a dynamic model formulation, it is necessary to consider a suitable estimation strategy which is capable of dealing with biases which stems from the presence of the AR(1) structure and possible endogenous explanatory variable(s) in Equation 2. Consequently, the current study employs the system generalized method of moments by Blundell and Bond (1998) which is acclaimed to be capable of dealing with most of the endogeneity issues that arise from estimations of models such as the one displayed in Equation 2.

Finally, recognising the insignificant association between CGQ and firm performance in almost all of the study's model estimations, we sought to re-examine whether the significant effects of CG on firm performance may be transmitted through certain transmission channels. We observe how efficient earnings management (a proxy for FRQ) is practiced within the implicit bounds of corporate governance systems and structures. Therefore, we introduced efficient earnings management measured via the inverse of absolute discretionary accruals as the study's proxy for FRQ, and used this as a possible mediator in a causal mediation analysis of the effects of CG on firm performance in equations (7) and (8). This mediation analysis was carried out using the Stata community contributed command "paramed," by Emsley and Liu (2013) where several other confounding variables were controlled in the analysis similar to previous estimations. The study performed this re-examination so as to identify the "how," or the possible channel(s), or pathways through which CG may affect firm performance in a definite way. This causal mediation approach defines direct and indirect effects in terms of the counterfactual intervention [i.e. fixing exposure and mediator to a predefined value (controlled), or fixing the exposure to a predefined value and the mediator to the value that naturally follows (natural)]. The total effect decomposes into the natural direct and indirect effect, where natural effect provides information on mechanisms, while controlled effect can be interpreted in terms of interventions. The causal mediation framework proposed by Emsley and Liu was favored above other approaches of conducting mediation analysis such as the traditional Baron and Kenny (1986) method and also the structural equation modelling (SEM) method mainly because it addresses the three important limitations shared by the traditional and SEM approaches; being: the 1) inability to control for mediatoroutcome confounders, 2) the inability to incorporate exposure-mediator interaction, and 3) the inability to incorporate non-linearities in these two approaches. The results and analysis of our findings are presented under Section 3.

#### 3. Empirical results and discussion of findings

#### 3.1. Descriptive statistics

Table 3 summarises the descriptive statistics for the study's sample firms. The mean of ROA is 6.03%, suggesting that the returns generated for all providers of finance of firms in sub-Saharan Africa during the sample period are, on average, low relative to returns on government securities in these countries (www.investor.com). This reflects the poor capability of firms in exploiting their resources to generate decent returns for investors. The average level of discretionary accruals or the proportion of managed earnings for sampled firms was about 2.00%, suggesting that EM practices of firms are relatively high within sub-Saharan Africa compared to those reported by other developing economies (Tang & Chang, 2015; Zimon et al., 2021). The average size of sampled firms was 5.13 with a standard deviation of 0.80, whereas leverage was 3.75 with a standard deviation of 0.78. The sampled firms showed high growth opportunities represented by a mean price-to-book ratio of 3.13 with a standard deviation of 6.09. The mean CGQ statistic for sampled firms is 8.96e–09 along the continuum of -1.544 and +2.562 showing minimal gains in the effort to strengthen CG practices of firm in sub-Saharan Africa. About 86% of the sampled firms have adopted IFRS as their financial reporting standard and hold about 40% of the assets in tangible form.

The correlation diagnostics as presented in Table 4 show that almost all the independent variables included in the study's models have a statistically significant correlation with the dependent variable, which is likely to offer at least, some evidence for the proposition that these independent variables interact with the performance variable. This evidence, together with the VIF coefficients, which are all below the acceptable threshold of 10 (Chatterjee & Hadi, 2012) confirms the absence of multicollinearity and the necessity of including these independent variables in our empirical models to alleviate the potential bias caused by variable omission.

Table 3. Descriptive statistics								
	(1)	(2)	(3)	(4)	(5)			
Variables	N	Mean	SD	Min	Max			
SIZE	1,295	5.125	0.802	2.754	7.183			
GRWTH	1,288	3.134	6.085	-36.47	96.98			
IFRS	1,295	0.859	0.348	0	1			
ASSTANG	1,254	0.400	0.237	0.00140	0.995			
FRQ	1,295	0.0200	0.755	-2.268	26.10			
CGQ	1,276	8.96e-09	1.000	-1.544	2.562			
AGE	1,295	3.669	0.743	0	5.136			
LEV	1,264	3.755	0.779	-1.926	4.604			
ROA	1,295	6.031	15.52	-179.9	295.7			
Number of aroups	104	104	104	104	104			

Notes: This table reports descriptive statistics based on aggregate samples of which the sizes may be various because of missing values. The variables are as defined in Table 2. For interpretation purposes, the descriptive statistics are calculated on the basis of levels with the exception of *IFRS Adoption* which was computed from a dummy scale, *CGQ* which was calculated as an index from normalized rotated principal component analysis, and *Size, Age and Leverage* were calculated on the basis of logarithmic form. The ROA, being the dependent variable in our model, was not transformed but allowed to retain its original form for 1) ease of interpretations, 2) because its histogram distribution appears normal.

Table 4. Cori	relation coeff	icients									
Variables	(1)	(2)	(3)	(†)	(2)	(9)	(2)	(8)	(6)		VIFS
(1) ROA	1.000										
(2) CGQ	0.046*	1.000									1.18
	(660:0)										
(3) FRQ	0.150***	0.050*	1.000								1.01
	(0000)	(0.076)									
(4) SIZE	0.161***	-0.150***	-0.007	1.000							1.17
	(0000)	(0000)	(0.810)								
(5) GRWTH	0.226***	0.101***	-0.011	0.051*	1.000						1.10
	(0000)	(0000)	(0.700)	(0.065)							
(6) AGE	0.042	0.105***	-0.009	0.133***	0.092***	1.000					1.18
	(0.130)	(0000)	(0.734)	(0000)	(0.001)						
(7) LEV	-0.068**	0.057**	0.009	0.094***	0.040	0.083***	1.000				1.04
	(0.016)	(0.045)	(0.759)	(0.001)	(0.152)	(0.003)					
(8) IFRS	0.001	-0.038	0.027	0.152***	-0.042	0.028	-0.046*	1.000			1.29
	(0.979)	(0.177)	(0.327)	(0000)	(0.136)	(0.313)	(0.102)				
(9) ASSTANG	0.070**	0.223***	-0.047*	-0.030	0.061**	0.130***	-0.026	-0.041	1.000		1.09
	(0.013)	(0000)	(0.094)	(0.286)	(0.031)	(0000)	(0.357)	(0.149)			
(10) L.ROA	0.472***	0.047*	0.053*	0.172***	0.261***	0.061**	-0.084 ***	0.021	0.077***	1.000	1.14
	(0000)	(0.110)	(0.068)	(0000)	(0000)	(0.037)	(0.004)	(0.462)	(0.00)		
Notes: This tabl indicate signific	le presents pairw ance at 10% (*)	ise correlation co 5% (**) and 1% (*	efficients which	are based on sai	nples of which tl	he sizes may be	various because	of missing value	s. The variables a	re as defined Tat	ole 2. Asterisks

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	Static	Models	Dynamic	Models	Estimations
	(1)	(2)	(3)	(4)	(5)
Variables	OLS Estimator	FE Estimator	OLS Estimator	System GMM Estimator	FE Estimator
CGQ	0.882	0.948	0.580	0.428	1.209
	(0.593)	(1.380)	(0.384)	(0.469)	(1.136)
FRQ	2.746	2.336	2.399	1.283	2.333
	(2.833)	(2.802)	(2.714)	(3.651)	(2.811)
SIZE	1.999*	-4.978	1.155	1.963*	-6.977
	(1.048)	(7.121)	(0.839)	(1.100)	(8.185)
GRWTH	0.384*	0.178	0.242	0.117	0.177
	(0.201)	(0.140)	(0.192)	(0.195)	(0.164)
AGE	0.924	7.046	0.603	-0.0342	9.036*
	(0.713)	(4.802)	(0.486)	(0.622)	(4.948)
LEV	-2.193	-7.677***	-1.925	-2.852	-7.955***
	(1.745)	(1.910)	(1.369)	(2.272)	(1.963)
IFRS	2.710	2.659**	1.453	-2.153**	2.157
	(1.738)	(1.306)	(1.487)	(0.992)	(1.428)
ASSTANG	4.096	-0.810	2.890	2.658	-0.626
	(3.176)	(3.257)	(2.810)	(2.446)	(3.293)
L.ROA			0.358**	0.315***	0.0607
			(0.154)	(0.105)	(0.0988)
Constant	1,930***	2,137***	1,411***		2,240***
	(334.2)	(422.6)	(498.0)		(602.8)
Country fixed- effects	Yes	Yes	Yes	Yes	Yes
Year fixed- effects	Yes	Yes	Yes	Yes	Yes
Firm fixed- effects	Yes	No	Yes	Yes	No
Observations	1,210	1,210	1,115	1,115	1,115
R-squared	0.139	0.129	0.232		0.138
Number of groups	104	104	104	104	104
F-statistic	6.80***	7.34***	28.86***		10.20***
Wald chi-square				392.71***	

Robust standard errors in parentheses

\*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1

#### 3.2. Multiple regression analysis

#### 3.2.1. The effect of CG on performance

The results of the study's static and dynamic models estimated, respectively, via the baseline fixed effect and two-step system generalized method of moments with the Windmeijer (2005) finite-sample correction estimators indicate that CGQ seems an insignificant determinant of firm performance. These results appear robust even when we used alternative performance indicators (see Tables 5, 6, and 9).

Table 6. Static and dynamic regression results of firm performance (i.e., Tobin's Q) determi- nants for robustness checks						
	Static	Models	Dynamic	Model	Estimations	
	(1)	(2)	(3)	(4)	(5)	
Variables	OLS Estimator	FE Estimator	OLS Estimator	System GMM Estimator	FE Estimator	
CGQ	0.0730	-0.000721	0.0835*	0.0409	0.0395	
	(0.0483)	(0.0929)	(0.0460)	(0.0492)	(0.0949)	
FRQ	0.0762	0.0622	0.0659	0.0253	0.0592	
	(0.0886)	(0.0737)	(0.0799)	(0.0959)	(0.0679)	
SIZE	0.146*	-0.667	0.166**	0.174	-0.690	
	(0.0827)	(0.442)	(0.0828)	(0.109)	(0.530)	
GRWTH	0.154***	0.0922**	0.143***	0.151**	0.0850**	
	(0.0496)	(0.0383)	(0.0512)	(0.0744)	(0.0397)	
AGE	0.0368	0.122	0.0450	0.0309	0.547*	
	(0.104)	(0.296)	(0.0938)	(0.0661)	(0.279)	
LEV	-0.0464	-0.000349	-0.0384	0.0140	-0.106	
	(0.130)	(0.162)	(0.124)	(0.110)	(0.162)	
IFRS	0.000207	0.0472	-0.0153	-0.222*	0.0683	
	(0.166)	(0.158)	(0.150)	(0.128)	(0.170)	
ASSTANG	0.506	0.191	0.557	0.661	0.220	
	(0.353)	(0.229)	(0.350)	(0.404)	(0.236)	
L.TobinsQ			0.0433	0.0205	0.0140	
			(0.0427)	(0.0201)	(0.0155)	
Constant	106.2***	103.9***	85.25***		113.7***	
	(28.25)	(31.22)	(25.54)		(33.26)	
Country fixed- effects	Yes	Yes	Yes	Yes	Yes	
Year fixed- effects	Yes	Yes	Yes	Yes	Yes	
Firm fixed- effects	Yes	No	Yes	Yes	No	
Observations	1,210	1,210	1,115	1,115	1,115	
R-squared	0.400	0.260	0.407		0.226	
Number of groups	104	104	104	104	104	
F-statistic	15.73***	5.01***	11.98***		3.00***	
Wald chi-square statistic				929.76***		

Robust standard errors in parentheses.

\*\*\* *p* < 0.01, \*\* *p* < 0.05, \* *p* < 0.1

Upon the evidence of this apparent weak relationship between CGQ and firm performance against our expectations, we sought further to re-examine the CG—firm performance relationship from the perspective of causal mediation analysis. This analysis was carried out so as to identify the "how," or the possible channel(s), or pathways through which CG may affect firm performance in a definite way. The results of our mediation analysis are presented in Table 7 which comprises of an outcome model, a mediator model, and an estimate for controlled direct effect (CDE), natural indirect effect (NIE), and the total effect (TE) for causal inference. The results of our mediation analysis are also robust across alternative performance indicators (see, Table 8).

Table 7. Causal mediation analysis output for the study's outcome model with mediator					
	Baseline Model with ROA as outcome variable	Robustness Test Model with Tobins's Q as outcome variable			
	(1)	(2)			
Variables					
CGQ	0.882**	0.0730*			
	(0.401)	(0.375)			
FRQ	2.746***	0.0762*			
	(0.481)	(0.0450)			
SIZE	1.999***	1.461***			
	(0.509)	(0.0476)			
GRWTH	0.384***	0.154***			
	(0.064)	(0.00601)			
AGE	0.924*	0.0368			
	(0.536)	(0.0502)			
LEV	-2.193***	-0.464			
	(0.563)	(0.0527)			
IFRS	2.710**	0.000207			
	(1.267)	(0.119)			
ASSTANG	4.096**	0.506***			
	(1.640)	(0.154)			
Constant	1,930***	106.176***			
	(234.81)	(21.990)			
Country fixed-effects	Yes	Yes			
Year fixed-effects	Yes	Yes			
Firm fixed-effects	Yes	No			
Observations	1,210	1,210			
R-squared	0.139	0.400			
Adj. R-squared	0.131	0.396			
F-statistic	17.53***	72.60***			

Robust standard errors in parentheses.

\*\*\* *p* < 0.01, \*\* *p* < 0.05, \* *p* < 0.1

From our results (see Table 7), we find that CGQ has a significantly positive effect on firm performance, as evidenced by the CDE coefficient (i.e.,  $\beta_1 = .8817736$ , *p*-value = 0.028). In addition, we find CGQ to have a positive effect on FRQ as shown by  $\gamma$  in the subsequent mediator model (i.e.,  $\gamma = .0459822$ , *p*-value = 0.056), and also FRQ having a positive effect on firm performance (i.e.  $\theta = 2.745845$ , *p*-value = 0.000). There also exists a natural indirect effect where CGQ influences firm performance through the mediation of FRQ. This is evidenced by the NIE coefficient (i.e.,  $\theta \gamma = .12626011$ , *p*-value = 0.070). Overall, our findings from our causal mediation framework do confirm the existence of a causal relationship between CG and firm performance in consonance with those of other prior studies (see e.gs., Goel et al., 2022; Heo, 2018; Kyereboah-Coleman et al., 2007; Osman & Samontaray, 2022; Tornyeva & Wereko, 2012).

For a more understandable depiction, the study shows the direct and indirect effects of CG on firm performance through mediation of FRQ via Figure 3.

Table 8. Causal mediation analysis output for the study's mediator model					
	Baseline Model with FRQ as outcome variable	Robustness Test Model with FRQ as outcome variable			
	(1)	(2)			
Variables					
CGQ	0.046*	0.0460*			
	(0.024)	(0.024)			
SIZE	0.006	0.00575			
	(0.031)	(0.0306)			
GRWTH	-0.003	-0.00339			
	(0.004)	(0.00385)			
AGE	-0.018	0.0177			
	(0.032)	(0.0322)			
LEV	0.005	0.00461			
	(0.034)	(0.0338)			
IFRS	0.032	0.0321			
	(0.076)	(0.0761)			
ASSTANG	-0.184*	-0.184*			
	(0.098)	(0.0984)			
Constant	2.820***	2.820			
	(14.104)	(14.104)			
Country fixed-effects	Yes	Yes			
Year fixed-effects	Yes	Yes			
Firm fixed-effects	Yes	No			
Observations	1,210	1,210			
R-squared	0.010	0.010			
Adj. R-squared	0.002	0.002			
F-statistic	1.24	1.24			

Robust standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 9. The estimates of causal effect of CG on firm performance mediated by FRQ					
Variables	Baseline Causal Mediation- Model (1)	Robustness Test Model of Causal Mediation (2)			
CDE	0.882**	0.0730*			
	(0.401)	(0.0375)			
NIE	0.126*	0.00350			
	(0.0696)	(0.00276)			
TE	1.008**	0.0765**			
	(0.405)	(0.0375)			
Observations	1,210	1,210			

Notes: This table reports the empirical results of controlled effect of CG on firm performance as mediated by EM via means of a causal mediation analysis, where cde=controlled direct effect, nie=natural indirect effect, te=total effect. Asterisks indicate significance at 10% (\*), 5% (\*\*) and 1% (\*\*\*).

Source: Stata output of causal mediation analysis to demonstrate the direct and indirect effects of CG on performance through EM as mediator using the "paramed" command by Emsley and Liu (2013).

#### Figure 3. Path analysis: Corporate governance, earnings management, and firm performance.

**Source**: Authors' framework of mediation analysis involving CG, EM and ROA (2023).



Figure 3 shows a positive and significant association between *CGQ* and *ROA* [(1.008, p < 0.05); total effect] that is consistent with the study's expectations. In addition, *CGQ* is positively related to *FRQ* (0.046, p < 0.1) and *FRQ* is also positively associated with *ROA* (2.746, p < 0.01) which are all consistent with our expectations. Finally, to compute the indirect effect of *CGQ* on *ROA* through *FRQ*, we multiply two coefficients of (0.046) and (2.746) [i.e., (0.046) × (2.746) = 0.126]. The results of the Emsley and Liu test (i.e., p < 0.1) (Emsley & Liu, 2013) suggest that the indirect influence of *CGQ* on *ROA* through *FRQ* is significantly different from zero. Our findings show that 12.5% (0.126 is divided by 1.008) of the effect of *CGQ* on *ROA* originates from the mediating function of *FRQ*, which shows that *FRQ* serves as an intermediary in the relationship between *CGQ* and *ROA*. Overall, our findings indicate that CGQ enhances FRQ, which by implication, sends positive signals to investors of a healthier management of the financial affairs of the firm and thereby elicit positive investor response in parting with investible capital to the firm which allows the firm to exploit real opportunities for growth and enhancement in their profitability.

#### 4. Conclusions and recommendations

On the basis of the evidence from our empirical findings from our causal mediation framework, which are robust across different performance indicators, we submit that causal mediation frameworks offer suitable alternatives within which the CG—performance nexus may be investigated for firms. Again, flowing from our findings, we conclude that a positive causal relationship exists between corporate governance and firm performance. Moreover, we conclude that CGQ directly influences FRQ. We further conclude that CGQ positively affects the performance of firms through the mediation of FRQ. All three hypotheses of our study (*H*1, *H*2 and *H*3)) are therefore supported or accepted.

The evidence from the current study's mediation results which consistently shows a significantly positive effect of CGQ on firm performance for all three-dimensional effects (i.e., controlled direct effect, natural indirect effect, and total effect) seems to suggest that the beneficial effects of CG systems and structures in firms may be realised through certain transmission mechanisms such as FRQ. In the case of this study, FRQ tends to serve as the channel which acts as a partial mediator via which CG may affect firm performance. By demonstrating the mediating role of FRQ in the CG—firm performance relationship, the current study extends the agency theoretical proposition of sound CG systems being effective in enhancing firm performance through the quality of financial reporting. The recent findings by Liao et al. (2021) seem to corroborate the current study's findings and offers additional explanation regarding the channel via which the strengthening and implementation of CG reforms which invariably reflects in FRQ contribute towards firm performance enhancements, being the boost in cross-listing activities and the integration of international capital markets. Furthermore, the study's findings regarding the mediating role of FRQ in the CG—firm performance nexus also confirms the assertion that

efficient earnings management (a proxy for FRQ) seems to be practiced within the implicit bounds of sound CG systems and regulations in order to affect a firm's "bottom-line."

Policy makers in African capital markets and other emerging economies will learn that instituting sound CG measures, which assure the integrity of financial reporting, would invariably translate to favourable performance outcomes for firms in their respective capital markets. Theoretically, the study's findings support the prediction of agency theory regarding the role of CG in enhancing the quality of financial reporting, which ultimately translates into favourable performance outcomes for firms. Besides, investors, business managers and corporate governance practitioners would also be guided to direct their firm's CG systems and policies towards improvements in their FRQ and thereby reap the favourable performance effects.

Similar to other studies, this study suffers from some limitations. Unlike developed countries, there is neither a formal CG database nor any data on external monitoring by analysts in sub-Saharan Africa. Because of the unavailability of reliable, extensive data on corporate governance covering a wide range of governance indices, our study relied on disclosures in publicly available annual reports in constructing its CGQ index. We ignored the potential of segregating CG elements into smaller sub-indices (e.g., that of the RiskMetrics Group Inc.) for a severed and more comprehensive analysis of the effects of these sub-indices on the CG—firm performance relationship to ascertain the contribution of each sub-index to this nexus. With new data, it would be desirable for further research to understand how other CGQ indices from other perspectives such as the Worldwide Governance Indicators, G-Index, the E-Index, to mention a few, are related to performance, as well as their effectiveness in contributing towards the quality of financial reporting of firms within emerging economies, especially the African sub-region. Finally, future research is invited to validate the current study's findings in other contexts.

#### Author details

Michael Amoh Asiedu<sup>1</sup> E-mail: maasiedu@uew.edu.gh Emmanuel Mensah<sup>2</sup>

- <sup>1</sup> Department of Accounting, Winneba School of Business, University of Education, Winneba, Ghana.
- <sup>2</sup> Department of Accounting, University of Professional Studies, Accra, Ghana.

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#### Notes

- KPMG and ACCA (2014). Balancing Rules and Flexibility for Growth: A Study of Corporate Governance Requirements across Global Markets. Phase 2 - Africa. KPMG and ACCA.
- 2. Several studies have long recognised that there is no single approach in structuring governance mechanisms to optimise firm performance (see e.gs, Beekes et al., 2008, 2009; Bhagat et al., 2007).
- This approach was first used by Larcker et al. (2007), who demonstrated the effectiveness of PCA as a measure of corporate governance.

#### References

Abdullah, A., & Page, M. (2009). Corporate governance and corporate performance: UK FTSE 350 companies. *The British Accounting Review*, 42(2), 132–133. Adegbite, E. (2010). A scrutiny of corporate governance: Abridged paper. Journal of the Society for Corporate Governance in Nigeria, 2(1), 242–265.

- Afrizal, J., Gamayuni, R. R., & Syaipudin, U. (2021). The effect of earnings management on firm value with corporate governance as a moderating variable. *International Journal for Innovation Education and Research*, 9(2), 262–268. https://doi.org/10.31686/ ijier.vol9.iss2.2954
- Ali, S., Liu, B., & Su, J. J. (2022). Does corporate governance have a differential effect on downside and upside risk? *Journal of Business Finance & Accounting*, 49(9–10), 1642–1695. https://doi.org/10.1111/jbfa. 12606
- Azeem, M. U. L., Hassan, M., & Kouser, R. (2013). Impact of quality corporate governance on firm performance: A ten-year perspective. *Pakistan Journal of Commerce* and Social Sciences, 7(3), 656–670.
- Baron, R. M., & Kenny, D. A. (1986). The moderator mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182.
- Baydoun, N., Maguire, W., Ryan, N., & Willet, R. (2013). Corporate governance in five Arabian Gulf countries. Managerial Auditing Journal, 28(1), 7–22.
- Bebchuk, L. A., & Fried, J. M. (2003). Executive compensation as an agency problem. Journal of Economic Perspectives, 17(3), 71–92. https://doi.org/10.1257/ 089533003769204362
- Beekes, W., Hong, A., & Owen, S. (2009). An alternative measure of corporate governance using discrete principal component analysis. Working Paper, Australian School of Business, University of New. https://doi.org/10.2139/ssrn.1623005.
- Beekes, W., Le, H., & Owen, S. (2008). The relationship between corporate governance and firm

performance: A modern approach. Working Paper, Australian School of Business, University of New South Wales.

- Ben Salah, O., & Jarboui, A. (2021). Dividend policy, earnings management and the moderating effect of corporate governance in the French context. Journal of Financial Economic Policy, 14(3), 356–380. https://doi. org/10.1108/JFEP-02-2021-0034
- Bhagat, S., Bolton, B., & Romano, R. (2007). The promise and peril of corporate governance indices. ECGI Working Paper Series in Law, Working Paper N. 89/ 2007, European Corporate Governance Institute.
- Bhatt, R. R., & Bhattacharya, S. (2015). Do board characteristics impact firm performance? An agency and resource dependency theory perspective. Asia-Pacific Journal of Management Research and Innovation, 11 (4), 274–287. https://doi.org/10.1177/ 2319510X15602973

Bhuiyan, M. B., Roudaki, J., & Clark, M. (2010). Firm characteristics and corporate governance: Evidence from New Zealand. Proceedings of the Corporate Governance and Global Financial Crisis, Wharton School, Philadelphia, USA, September 24-25. In: Bhuiyan, M.B. (2010) Determinants and Consequences of Corporate Governance Regulation - New Zealand Evidence, Doctoral thesis, Lincoln University.

- Biswas, P. K. (2013). Corporate governance and its determinants in emerging countries: A case study of Bangladesh. SSRN Electronic Journal, 10(2139/ ssrn.2213702).
- Biswas, S., Bhattacharya, M., Sadarangani, P. H., & Jin, J. Y. (2022). Corporate governance and earnings management in banks: An empirical evidence from India. *Cogent Economics & Finance*, 10(1), 2085266. https:// doi.org/10.1080/23322039.2022.2085266
- Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1), 115–143. https://doi. org/10.1016/S0304-40769800009-8
- Boachie, C., & Mensah, E. (2022). The effect of earnings management on firm performance: The moderating role of corporate governance quality. *International Review of Financial Analysis*, 83. https://doi.org/10. 1016/j.irfa.2022.102270
- Bokpin, A. G., & Isshaq, Z. (2009). Corporate governance disclosure, disclosure and foreign share ownership on Ghana Stock Exchange. *Managerial Auditing Journal*, 24(7), 688–703.
- Brown, P., Beekes, W., & Verhoeven, P. (2011). Corporate governance, accounting and finance: A review. Accounting & Finance, 51(1), 96–172. https://doi.org/ 10.1111/j.1467-629X.2010.00385.x
- Callao, S., Jarne, J., & Wroblewski, D. (2014). The development of earnings management research: A review of literature from three different perspectives. *Theoretical Journal of Accounting*, 79(135), 135–177.
- Chatterjee, S., & Hadi, A. S. (2012). Regression analysis by example. John Wiley & Sons.
- Che Haat, M. H., Abdul Rahman, R., & Mahenthiran, S. (2008). Corporate Governance, transparency and performance of Malaysian companies. *Managerial Auditing Journal*, 23(8), 744–778. https://doi.org/10. 1108/02686900810899518
- Chen, A., Kao, L., Tsao, M., & Wu, C. (2007). Building a corporate governance index from the perspectives of ownership and leadership for firms in Taiwan. *Corporate Governance an International Review*, 15(2), 251–261. https://doi.org/10.1111/j.1467-8683.2007.00572.x
- Claessens, S., & Fan, J. P. H. (2002). Corporate Governance in Asia: A Survey. International Review of Finance, 3

(2), 71–103. https://doi.org/10.1111/1468-2443. 00034

- Conyon, M., & Peck, S. (1998). Board size and corporate performance: Evidence from European countries. *European Journal of Finance*, 4(3), 291–304. https:// doi.org/10.1080/135184798337317
- Coskun, M., & Sayilir, O. (2012). Relationship between corporate governance and financial performance of Turkish companies. International Journal of Business & Social Science, 3(14), 59–64.
- Craig, V. V. (2004). The changing corporate governance environment: Implications for the banking industry. *FDIC Banking Review*, 16(4), 1–15.
- Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. *The Accounting Review*, 70(2), 193–225.
- Deegan, C. M. (2009). Financial accounting theory. McGraw-Hill).
- Denis, D. K., & McConnell, J. J. (2003). International corporate governance. The Journal of Financial and Quantitative Analysis, 38(1), 1–36. https://doi.org/10. 2307/4126762
- Dey, A. (2008). Corporate governance and agency conflicts. *Journal of Accounting Research*, 46(5), 1143–1181. https://doi.org/10.1111/j.1475-679X. 2008.00301.x
- Dittmar, A., & Mahrt-Smith, J. (2007). Corporate governance and the value of cash holdings. *Journal of Financial Economics*, 83(3), 599–634. https://doi.org/ 10.1016/j.jfineco.2005.12.006
- Ehikioya, B. I. (2009). Corporate governance structure and firm performance in developing economies: Evidence from Nigeria. Corporate Governance the International Journal of Business in Society, 9(3), 231–243. https:// doi.org/10.1108/14720700910964307
- Eisenhardt, K. M. (1989). Agency theory: An assessment and review. The Academy of Management Review, 14 (1), 57–74. https://doi.org/10.2307/258191
- Elbannan, M. (2009). Quality of internal control over financial reporting, corporate governance and credit ratings. *Int J Discl Gov*, *6*, 127–149. https://doi.org/10. 1057/jdg.2008.32
- Elkalla, T. (2017). An empirical investigation of earnings management in the MENA Region (PhD Thesis, University of the West of England).
- Emsley, R., & Liu, H. (2013). PARAMED: Stata module to perform causal mediation analysis using parametric regression models. In C. Baum. (Ed.), *Statistical software components*. Boston College Department of Economics. https://econpapers.repec.org/software/ bocbocode/S457581.htm
- Fan, J. P. H., Wei, K. C. J., & Xu, X. (2011). Corporate finance and governance in emerging markets: A selective review and an agenda for future research. *Journal of Corporate Finance*, 17(2), 207–214. https:// doi.org/10.1016/j.jcorpfin.2010.12.001
- Farhan, A., Obaid, S. N., & Azlan, H. (2017). Corporate governance effect on firms' performance-evidence from the UAE. Journal of Economic and Administrative Sciences, 33(1), 66–80. https://doi.org/ 10.1108/JEAS-01-2016-0002
- Gillan, S. L. (2006). Recent developments in corporate governance: An overview. Journal of Corporate Finance, 12(3), 381–402. https://doi.org/10.1016/j. jcorpfin.2005.11.002
- Goel, A., Dhiman, R., Rana, S., & Srivastava, V. (2022). Board composition and firm performance: Empirical evidence from Indian companies. *Asian-Pacific Journal of Business Administration*, 14(4), 771–789.
- Hasan, M. T. (2020). The effect of IFRS adoption on earnings management and the moderating role of

corporate governance: evidence from Bangladesh [Doctoral thesis, Tunku Puteri Intan Safinaz School of Accountancy].

- Hasan, A., Aly, D., & Hussainey, K. (2022). "Corporate governance and financial reporting quality: A comparative study. Corporate Governance, 22(6), 1308–1326. https://doi.org/10.1108/CG-08-2021-0298
- Heo, K. (2018). Effects of corporate governance on the performance of state-owned enterprises (*No. 8555*). The World Bank.
- Heracleous, L. (2001). What is the impact of corporate governance on organisational performance? *Corporate Governance an International Review*, 9(3), 165–173. https://doi.org/10.1111/1467-8683.00244
- Iwasaki, I. (2008). The determinants of board composition in a transforming economy: Evidence from Russia. Journal of Corporate Finance, 14(5), 532–549. https://doi.org/10.1016/j.jcorpfin.2008.09.005
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behaviour, agency costs, and ownership structure. Journal of Financial Economics, 3(4), 305– 360.
- Keefe, T. (2013). Earnings quality. Investopedia. http:// www.investopedia.com/university/accountingearnings-quality/
- Key, K. G., & Kim, J. Y. (2020). IFRS and accounting quality: Additional evidence from Korea. Journal of International Accounting, Auditing & Taxation, 39, 100306. https://doi.org/10.1016/j.intaccaudtax.2020. 100306
- Khatib, S. F. A., Abdullah, D. F., Al Amosh, H., Bazhair, A. H., & Kabara, A. S. (2022). Shariah auditing: Analyzing the past to prepare for the future. *Journal of Islamic Accounting and Business Research*, 13(5), 791–818. https://doi.org/10.1108/JIABR-11-2021-0291
- Khatib, S. F. A., Abdullah, D. F., Elamer, A., & Hazaea, S. A. (2022). Development of corporate governance literature in Malaysia: A systematic literature review and research agenda. *Corporate Governance*, 22(5), 1026–1053.
- Kim, M. P., Pierce, S. R., & Yeung, I. (2021). Why firms announce good news late: Earnings management and financial reporting timeliness. *Contemporary Accounting Research*, 38(4), 2691–2722. https://doi. org/10.1111/1911-3846.12695
- Kothari, S. P., Laguerre, T. E., & Leone, A. J. (2002). Capitalization versus expensing: Evidence on the uncertainty of future earnings from capital expenditures versus R&D outlays. *Review of Accounting Studies*, 7(4), 355–382. https://doi.org/10.1023/ A:1020764227390
- KPMG & ACCA. (2014) . Balancing rules and flexibility for growth: A study of corporate governance requirements across global markets. Phase 2 - Africa. KPMG and ACCA.
- Kyereboah-Coleman, A., Adjasi, C. K., & Abor, J. (2007). Corporate governance and firm performance: Evidence from Ghanaian listed companies. *Corporate Ownership & Control*, 4(2), 123–132. https://doi.org/ 10.22495/cocv4i2p12
- Larcker, D. F., Richardson, S. A., & Tuna, I. R. (2007). Corporate governance, accounting outcomes, and organizational performance. *The Accounting Review*, 82(4), 963–1008. https://doi.org/10.2308/accr.2007.82.4.963
- Leng, A. C. A. (2004). The impact of corporate governance practices on firms' financial performance: Evidence from Malaysian companies. ASEAN Economic Bulletin, 21(3), 308–318.
- Liao, C. H., Tsang, A., Wang, K. T., & Zhu, N. Z. (2021). Corporate governance reforms and cross-listings:

International evidence. Contemporary Accounting Research, 39(1), 537–576. https://doi.org/10.1111/ 1911-3846.12729

- Lin, Y. R., & Fu, X. M. (2017). Does institutional ownership influence firm performance? Evidence from China. International Review of Economics & Finance, 49, 17–57. https://doi.org/10.1016/j.iref.2017.01.021
- Liu, C., Yao, L., Hu, N., & Liu, L. (2011). The impact of IFRS on accounting quality in a regulated market: An empirical study of China. *Journal of Accounting, Auditing & Finance, 26*(4), 659–676. https://doi.org/ 10.1177/0148558X11409164
- Mahrani, M., & Soewarno, N. (2018). The effect of good corporate governance mechanism and corporate social responsibility on financial performance with earnings management as mediating variable. Asian Journal of Accounting Research, 3(1), 41–60. https:// doi.org/10.1108/AJAR-06-2018-0008
- Mangala, D., & Dhanda, M. (2019). Earnings management and performance of IPO firms: Evidence from India. Indian Journal of Corporate Governance, 12(1), 39–58. https://doi.org/10.1177/0974686219836542
- Mangena, M., & Chamisa, E. (2008). Corporate governance and incidences of listing suspension by the JSE Securities Exchange of South Africa: An empirical analysis. The International Journal of Accounting, 43 (1), 28–44.
- Mayes, G., David, H. L., & Liuksila, A. (2001). *Improving* banking supervision. Palgrave Macmillan.
- Mensah, E. (2021). The effect of IFRS adoption on financial reporting quality: Evidence from listed manufacturing firms in Ghana. Economic Research-Ekonomska Istraživanja, 34(1), 2890–2905. https://doi.org/10. 1080/1331677X.2020.1860109
- Mohd Ghazali, N. A. (2010). Ownership structure, corporate governance and corporate performance in Malaysia. International Journal of Commerce & Management, 20(2), 109–119. https://doi.org/10. 1108/10569211011057245
- Munisi, G., & Randøy, T. (2013). Corporate governance and company performance across Sub-Saharan African countries. *Journal of Economics and Business*, 70, 92–110. https://doi.org/10.1016/j.jeconbus.2013.08.003
- Ndu, I., Chuwuogor, C., Arize, C. A., & Malindretos, J. (2019). Modelling earnings management, corporate governance, capital management and risk using dynamic panel data estimation: The case of listed deposit banks in an emerging market. African Journal of Accounting, Economics, Finance and Banking Research, 12(12), 19–47.
- Nicholson, G. J., & Kiel, G. C. (2007). Can directors impact performance? A case-based test of three theories of corporate governance. Corporate Governance an International Review, 15(4), 585–608. https://doi.org/ 10.1111/j.1467-8683.2007.00590.x
- Osman, M. A. M., & Samontaray, D. P. (2022). Corporate governance and performance of insurance companies in the Saudi market. *The Journal of Asian Finance, Economics & Business*, 9(4), 213–228. https://doi.org/10.13106/JAFEB.2022.VOL9.NO4.0213
- Pae, J. (2005). Expected accrual models: The impact of operating cash flows and reversals of accruals. *Review of Quantitative Finance & Accounting*, 24(1), 5–22. https://doi.org/10.1007/s11156-005-5324-7
- Pham, N., Oh, K. B., & Pech, R. (2015). Mergers and acquisitions: CEO duality, operating performance and stock returns in Vietnam. *Pacific-Basin Finance Journal*, 35, 298–316. https://doi.org/10.1016/j.pacfin. 2015.01.007
- Pham, P. K., Suchard, J. A., & Zein, J. (2011). Corporate governance and alternative performance measures:

Evidence from Australian firms. Australian Journal of Management, 36(3), 371–386. https://doi.org/10. 1177/0312896211413035

- Pitcher, P., Chreim, S., & Kisfalvi, V. (2000). CEO succession research: Methodological bridges over troubled waters. *Strategic Management Journal*, 21(6), 625–648. https://doi.org/10.1002/(SICI)1097-0266 (200006)21:6<625:AID-SMJ107>3.0.CO;2-A
- Ponnu, C. H. (2008). Corporate governance structures and the performance of Malaysian public listed companies. International Review of Business Research Papers, 4(2), 217–230.
- Proimos, A. (2005). Strengthening corporate governance regulations. Journal of Investment Compliance, 6(4), 75–84. https://doi.org/10.1108/15285810510681900

Prommin, P., Jumreornvong, S., & Jiraporn, P. (2012). Liquidity, ownership structure, and corporate governance. In Pennsylvania State University, School of Graduate Professional Studies Working paper.

- Prommin, P., Jumreornvong, S., & Jiraporn, P. (2014). The effect of corporate governance on stock liquidity: The case of Thailand. *International Review of Economics* & Finance, 32, 132–142. https://doi.org/10.1016/j.iref. 2014.01.011
- Prommin, P., Jumreornvong, S., Jiraporn, P., & Tong, S. (2016). Liquidity, ownership concentration, corporate governance, and firm value: Evidence from Thailand. *Global Finance Journal*, 31, 73–87. https://doi.org/10. 1016/j.qfj.2016.06.006
- Rabelo, F. M., & Vasconcelos, F. C. (2002). Corporate governance in Brazil. Journal of Business Ethics, 37(3), 321–335.

Rajagopalan, N., & Zhang, Y. (2008). Corporate governance reforms in China and India: Challenges and opportunities. *Business Horizons*, *51*(1), 55–64. https://doi.org/10.1016/j.bushor.2007.09.005

Revilla, E., Sarkis, J., & Acosta, J. (2005). Towards a knowledge management and learning taxonomy for research joint ventures. *Technovation*, 25(11), 1307–1316. https://doi. org/10.1016/j.technovation.2004.06.005

- Rezaei, F., & Roshani, M. (2012). Efficient or opportunistic earnings management with regards to the role of firm size and corporate governance practices. *Interdisciplinary Journal of Contemporary Research in Business*, 3(9), 1312–1322.
- Sawicki, J. (2009). Corporate governance and dividend policy in Southeast Asia pre-and post-crisis. *European Journal of Finance*, 15(2), 211–230. https://doi.org/10. 1080/13518470802604440
- Schultz, E. L., Tan, D. T., & Walsh, K. D. (2010). Endogeneity and the corporate governance-performance relation. Australian Journal of Management, 35(2), 145–163. https://doi.org/10. 1177/0312896210370079
- Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. The Journal of Finance, 52(2), 737–783. https://doi.org/10.1111/j.1540-6261.1997.tb04820.x
- Siagian, F., Siregar, S. V., & Rahadian, Y. (2013). Corporate governance, reporting quality, and firm value: Evidence from Indonesia. *Journal of Accounting in*

Emerging Economies, 3(1), 4–20. https://doi.org/10. 1108/20440831311287673

- Singh, R. (2017). The Wiley 2017 interpretation and application of IFRS standards. *Delhi Business Review*, 18(2), 115–116. https://doi.org/10.51768/dbr.v18i2. 182201710
- Strebel, P. (2004). The case for contingent governance. Sloan Management Review, 45(2), 59–66.
- Tang, H. W., & Chang, C. C. (2015). Does corporate governance affect the relationship between earnings management and firm performance? An endogenous switching regression model. *Review of Quantitative Finance & Accounting*, 45(1), 33–58. https://doi.org/ 10.1007/s11156-013-0427-z
- Tornyeva, K., & Wereko, T. (2012). Corporate governance and firm performance: Evidence from the insurance sector of Ghana. European Journal of Business and Management, 4(13), 95–112.
- Vuola, O., & Hameri, A. P. (2006). Mutually benefiting joint innovation process between industry and big-science. *Technovation*, 26(1), 3–12. https://doi. org/10.1016/j.technovation.2005.03.003
- Wang, D., Zhu, Q., Avolio, B. J., Shen, W., & Waldman, D. (2022). Do employees' view matter in corporate governance? The relationship between employee approval and CEO dismissal. *Strategic Management Journal*, 44(5), 1328–1354.
- Waweru, M. N. (2014). Deterninants of quality corporate governance in Sub-Saharan African. Managerial Auditing Journal, 29, 455–485.
- Waweru, N. M., & Prot, N. P. (2018). Corporate governance compliance and accrual earnings management in Eastern Africa: Evidence from Kenya and Tanzania. Managerial Auditing Journal, 33, 171–191.
- Windmeijer, F. (2005). A finite sample correction for the variance of linear efficient two-step GMM estimators. *Journal of Econometrics*, 126(1), 25–51. https://doi. org/10.1016/j.jeconom.2004.02.005

Wintoki, M. B., Linck, J. S., & Netter, J. M. (2012). Endogeneity and the dynamics of internal corporate governance. *Journal of Financial Economics*, 105(3), 581–606. https://doi.org/10.1016/j.jfineco.2012.03. 005

- Yeh, Y. H., Shu, P. G., & Su, Y. H. (2012). Related-party transactions and corporate governance: The evidence from the Taiwan stock market. *Pacific-Basin Finance Journal*, 20(5), 755–776. https://doi.org/10. 1016/j.pacfin.2012.02.003
- Zhou, F., Fan, Y., An, Y., & Zhong, L. (2017). Independent directors, non-controlling directors, and executive pay-for-performance sensitivity: Evidence from Chinese non-state-owned enterprises. *Pacific-Basin Finance Journal*, 43, 55–71. https://doi.org/10.1016/j. pacfin.2017.02.003
- Zimon, G., Appolloni, A., Tarighi, H., Shahmohammadi, S., & Daneshpou, E. (2021). Earnings management, related party transactions and corporate performance: The moderating role of internal control. *Risks*, 9(8), 146. https://doi.org/10.3390/risks9080146

#### Appendix

Corporate Governance Mechanisms used for measuring CGQ Index

Name of Variable Corporate Governance Machanisme	Type of Variable	Critoria
Panel A: Board of Directors	Type of Variable	Criteria
Panel A: Board of Directors         (1) Board Size         (2) Board Independence         (3) Board Gender Diversity         (4) Board Remuneration         (5) Board Meetings         Panel B: Audit         (1) Audit Committee Size         (2) Audit Committee Size         (2) Audit Committee Meeting         (4) Audit Committee Meeting         (4) Audit Committee Diversity         (5) Big4 Auditor Engagement         (6) Auditor Fee         (7) Audit Report Timeliness         Panel C: Other Board Committee         (RC) Size         (2) Remuneration Committee         (RC) Size         (3) Remuneration Committee         (6) Nemination Committee         (7) Nomination Committee         (8) Nomination Committee         (9) Nomination Committee         (10) Risk/Gov. Committee         (11) Risk/Gov. Committee         (12) Risk/Gov. Committee         (13) Total Number of Board         Committees (including audit	Continuous Ratio Ratio Ratio Continuous Continuous Ratio Continuous Ratio Continuous Continuous Continuous Ratio Ratio Continuous Continuous Ratio Continuous Continuous Continuous Ratio Continuous Ratio Continuous Ratio Continuous Continuous Continuous Continuous Continuous Continuous Continuous Continuous Continuous Continuous Continuous Continuous Continuous Continuous Continuous Continuous Continuous Continuous Continuous	Number of members on the board Ratio of non-executive directors to board size Ratio of females to board size Ratio of board wages to total sales Number of board meetings in a year Number of members on Audit Committee (AC) Ratio of outside directors on AC to AC size Number of AC meetings in a year Ratio of female members on AC to AC size If Big4 is engaged 1, otherwise 0 If Big4 is engaged 1, otherwise 0 Days it takes for audit report to be signed and made available to management Number of members on RC Number of RC meetings in a year Ratio of outside directors on RC to RC size Ratio of female members on RC to RC size Number of members on NC to RC size Number of Mc meetings in a year Ratio of outside directors on NC to NC size Ratio of female members on NC to NC size Ratio of female members on NC to NC size Ratio of female members on RC/GC Number of RC/GC meetings in a year Ratio of outside directors on RC/GC Number of RC/GC meetings in a year Ratio of outside directors on RC/GC Number of RC/GC meetings in a year Ratio of outside directors on RC/GC Number of RC/GC meetings in a year Ratio of outside directors on RC/GC Number of RC/GC meetings in a year Ratio of outside directors on RC/GC Number of board committees functioning on behalf of the
committee)		board of directors