

Corporate Governance and Firm Performance : The Mediation Effect of Board Roles, Panel Evidence from Sub-Saharan Africa

Jonas Bawuah^{1,2}, Kong Yusheng¹, Agyeiwaa Owusu Nkwantabisa³

¹School of Finance and Economics, Jiangsu University, 301, Xuefu Rd. Zhenjiang, P.R. China

² Department of Accountancy and Accounting Information Systems, Kumasi Technical University, Ghana

³ZHONGNAN University of Economics and Law 182# Nanhu Road East Lake High Tech Development Zone
Wuhan P.R China 430073

ABSTRACT

The study explores the effect of corporate governance on the performance of firms in Sub-Saharan Africa by using both return on equity and return on assets as performance measures. Unique data from 252 listed firms drawn from Nigeria, South Africa, Ghana and Kenya covering thirteen year period of 2006-2018 was used and analysed within the generalised least square panel data framework. Results indicate that the direction and the extent of impact of corporate governance are dependent on the performance measure being examined. Specifically, our findings show that board structural characteristics and firm performance relationship was significant and stronger with return on equity as compared to return on asset. We also find that unlike for frequency of board meetings, the results suggest that board structural characteristics are significant predictors of firm performance and that the monitoring and resource dependence roles partially mediate the relationship between board structural characteristics and firm performance.

Keywords : Corporate Governance, Firm Performance, Board Roles, Board Structural Characteristics

I. INTRODUCTION

The increasing attention to corporate governance by government, departments and agencies across the world has ignited interest by academia globally. As a result, vast amount of literature continue to evolve. However, despite more than over three decades of research on corporate governance, the documented findings are grossly asymmetrical. This had not helped the field in gaining the much needed appreciation of the relationship between corporate board structural characteristics and firm performance. These conflicting results can be attributed in part to the fact that corporate governance researchers have relied on single theory for so long. Overwhelmingly, majority of these researches have adopted finance and

economics perspective by using agency as their primary theoretical framework (Shleifer and Vishny, 1997; Gompers et al., 2003; Dahya and McConnell, 2005, Achchuthan & Kajanathan, 2013). However, the numerous functions expected from the corporate board makes it virtually impossible for a single theory to accommodate (Kiel and Nicholson, 2007). As a result, many researchers in corporate governance and for that matter board governance consider the assumptions of the Agency theory too narrow in explaining board roles perform at various corporate bodies (Roberts et al., 2005; Pye and Pettigrew, 2005; and Aguilera, 2005) and are of the view that corporate governance especially board related research need to be looked at through a multi-theoretic perspective (Hillman et al., 2000, Hermalin and Weisbach, 2003).

More so, in spite of the numerous volumes of research in the area of corporate governance, majority of these assumed “express relationship” instead of “mediation approach” and is a serious challenge that had mitigated consensus findings (Daily et al., 2003; Shleifer and Vishny, 1997). The convention of direct relationship is too narrow and simple because it views corporate governance as a “differentiator rather than a qualifier” (Kouki and Guizani, 2015, Heracleous, 2001) whereby researchers have examined only the obvious and direct links between board features and firm performance. Importantly, only a mere handful of studies have examined the impact of moderating or mediating variables on firm performance (Guizani, 2013; Kouki and Guizani, 2015), a lacuna that many scholars have urged academics to investigate (Finkelstein and Mooney, 2003; Pye and Pettigrew, 2005) This has opened windows of opportunities toward greater interest in mediation and moderating based studies for empirical and theoretical research in the field of corporate governance and for that matter governance reforms on board structure and firm performance through an intervening variable such as board role (Van Ees et al., 2008; Wan and Ong, 2005; Zahra and Pearce, 1989, Hassan, 2014).

Moreover, despite the extant research that exist over the years on corporate governance, board dynamics and firm performance, most of these studies come from US closely followed by UK as well as other developed economies (Huse, 2007; Jackling and Johnl, 2009; Vafeas and Theodorou, 1998; Johnson et al., 1996; Yermack, 1996) to the disadvantage of developing or emerging economies; particularly countries in Sub-Saharan Africa. As a result, there is urgent need for developing and emerging economies impetus especially from Africa where we presently have the least of empirical studies. Developed economies have effective regulatory system, high levels of corporate governance indices and well developed capital market and doesn't make is more appropriate in relying on such studies in the context

of developing or emerging economies. Studies from developing countries especially those with weak legal environment may be of high importance to the field (Klapper and Love, 2002). Over the years, the lack of adequate documented evidences from African perspective especially the emerging economies within the continents like Ghana, Nigeria, Kenya and South Africa have undoubtedly impaired policy makers in forging appropriate cause for improved corporate governance. Thus, the relationship between corporate governance and firm performance is still inconclusive. Besides, comprehensive and detailed research on the relationship between corporate governance and firm performance that considers the role and structure of boards from multi-theoretic approach is barely available, especially in the African context on a cross country basis. Further, studies on corporate governance reforms and its impact on board structure and board roles in Sub-Saharan African countries remains scanty. This research intends to fill these contexts, empirical and theoretical gaps which are seen in the mix reports by examining and developing a model, derived from the extensive literature, to investigate the impact of corporate governance on firm performance taking into consideration the mediating role of board roles by combining agency and resource dependence theories from the perspective of emerging economies within Sub-Saharan Africa.

According to agency model, the separation of ownership and control creates an inherent conflict of interest between the shareholders (Principal) and the management (Agent) (Aguilera et al., 2008). Managers are said to be rational, however, they cannot be trusted to remain faithful by always acting in the best interest of wealth maximization of the principal since they are also assumed to be self-interested (Williamson, 1975; Padilla, 2002). Agents (Managers) are therefore supposed to be controlled to avoid “moral hazard” using some risk-bearing and monitoring mechanisms to check or control their deviant behaviors (Jensen, 1983; Filatachev et al.

2007). To address the agency problem, the theorists recognized the crucial role of the board as a monitoring/control mechanism that the disperse owners can use in subduing the opportunistic behaviour of agents (managers) (Stiles and Taylor 2001). They regarded corporate governance as a mechanism where a board of directors is a crucial monitoring device to minimize the problems brought about by the principal-agent relationship . On the other hand, resource dependency theorists follow a different path, where they examine the provision of resources as the main function of boards, and board capital is, according to them, the primary antecedent of this function. Provision of resources refer to the ability of board members to bring resources to the firm. The activities of the board related to the provision of resources are: providing legitimacy/bolstering the public image of the firm, providing expertise, administering advice and counsel, linking the firm to important stakeholders or other important entities, facilitating access to resources such as capital, building external relations, diffusing innovation, and aiding in the formulation of strategy or other important firm decisions. Thus, resource dependency theorists are of the view that a board's provision of resources is directly related to firm performance in that these resources at the firm's disposal help reduce dependency between the organization and external contingencies (Pfeffer & Salancik, 1978), diminish uncertainty for the firm (Pfeffer, 1972), lower transaction costs (Williamson, 1984), and ultimately aid in the survival of the firm (Singh, House, & Tucker, 1986).

The study finds its theoretical motivation based upon the two broad functions of board of directors (monitoring and provision of resources) and their association with firm performance. Generally speaking, the agency theory elaborated that the main obligation of the boards is to monitor the management of an organization whereas the resource dependency theory treaded a distinct path, where they believe that the provision of resources as the

main function of boards. However, the fundamental determinant of effective corporate governance is the set of roles or functions that are required of the board of director who serves as a link between the shareholders and the management of the organization. In view of this, a framework that moves beyond a unitary view of the board's role to a holistic view of board's roles will aid academics and practitioners in board structural characteristics-performance relationships (Gabrielsson, J. (2017); Huse (2008); Westphal, 1999). It is believed that integration of monitoring and the provision of resources will not only more accurately reflect the real world but also may overcome theoretical weaknesses in choosing one approach over another. On one hand, agency theorists state that incentives will directly improve a board's monitoring without taking into account the heterogeneous board abilities to monitor. Likewise, resource dependence theorists focus on board capital and how it relates to the provision of resources and firm performance, without considering how incentives to provide advice and counsel or to utilize their links to other organizations, for example, may affect this relationship. Both ability and incentives are likely to affect behaviour within organizations, suggesting that examining one without the other is insufficient (Hillman and Dalziel, 2003).

II. Literature Review and Hypothesis Development

2.1 Non-executive directors (NEDs), board roles and firm performance

The board of directors is a collective body that requires the combination of executive and non-executive directors that should act in the best interest of shareholders. Non-executives directors are the person entrusted by shareholders to represent them and for them to be able to exercise their duties effectively and provide unbiased business judgment to help reduce agency problems they need to be independence from management. The Agency and Resource dependence theorists are of the view that

boards dominated by executive directors are relatively less answerable to diverse shareholders (Fama, 1980; Sonnenfeld, 2002). Therefore, the presence of non-executive directors on corporate governing board is deemed beneficial for the outside investors and considered useful in bringing independence to board decisions (Combined code, 2012; Chhaochharia and Grinstein, 2007).

The availability of the non-executive directors brings resources to the firm in the shape of experience, expertise, business contacts and reputation (Klein, 2003; Haniffa and Hudaib, 2006; Baranchuk and Dybvig, 2009) The major contribution of the board is formulating company's strategy and exercise proper oversight function throughout the company operations and activities (Zinkin, 2010). Non-executive directors with relevant industry background and wide expertise could actively participate in board discussion; contribute their independent views and more willing to challenge Chief Executive Officers (CEOs) and the management team in the interest of shareholders. Zinkin (2010) has stated that several areas should be addressed by independent non-executive directors that would contribute to the effective formulation of the company strategy. They should ask questions pertaining to the businesses that the company ventures in, product market segmentation, and the valuable customers within the market segmentation (Fuji, Rahim and Tan, 2012). However, the relationship between the proportion of NEDs and firm financial performance has not been straightforward (Hermalin and Weisbach, 2003; McNulty et al., 2005)

Further, even though a number of studies exist on the role of independent directors, for instance, monitoring, strategic and resource provision duties (Weisbach, 1988; Cotter et al., 1997; Boone et al., 2007; Guest, 2008), the impacts of NEDs members on the firm performance cannot be accessed directly (Forbes and Milliken, 1999; Hermalin and Weisbach,

2003; McNulty et al., 2013). From the above it could be argued that the correlation between board structural characteristics and firm performance is inconclusive, and the kind of association between board structure and firm performance is not a direct(input-output relationship) as the link is mediated through board roles (McNulty et al., 2013). The literature on corporate governance has highlighted a number of key roles performed by the directors in improving firm performance (Ruigrok et al., 2006; Carpenter and Westphal, 2001; Stiles, 2001) and paid special attention to the monitoring and resource dependence roles of the board in firm management (Hillman and Dalziel, 2003; Hung, 1998). In this connection, the monitoring role of the board has been studied through the increased activity of the board in the form of the board meetings frequency (Vafeas, 1999; Adams, 2009). Scholars including Carcello et al. (2002); Laksmana (2008) defined the frequency of meeting as the number of times the board meets in a year to discuss and approve the important organizational issues. Brick and Chidambaran (2007) find some evidence of a positive relationship between independent directors and board meetings. This can have a plausible explanation that more non-executive members would need more time to be briefed about the situation and would consequently need more time to discuss the issues on the board and hence will be demanding more number of board meetings. As a result, more meetings allow the directors to provide more time for strategy formation and performance evaluation. Thus, higher board activity enables better board monitoring as outside directors are more likely to request for more board meetings to improve their capability to monitor management (Vafeas, 1999; Useem and Zelleke, 2006; Brick and Chidambaran, 2007; Guest, 2009; Al-Najjar, 2013). Outside directors are therefore likely to demand more board meetings to enhance their ability to monitor management, more so, in boards with more outsider participation, more time is likely to be spent in briefing board members than would be required in boards with high insider membership if

higher board activity facilitates better board monitoring. Thus there should be a positive relation between the representation of outside directors on the board and the level of board activity. Thus the non-executive directors will need more meetings of the board as they need more time to brief the board members (Brick and Chidambaran, 2007; Vafeas, 1999). Also, other extant literatures have agreed that an increased number of non-executive directors on the board raise the power and frequency of board meetings (Beasley et al., 2000; Klein, 2002). Thus, more NEDs create more board meetings which are essential. Board meetings have impact on the governance and performance relationship and could be argued that frequency of board meetings, which is the monitoring role of the board, is a mediating variable in the relation between NEDs and firm performance. Regarding the link between NEDs and resource dependence role of the board, studies have found that large board with more outside directors better constitute the resource role of the board and improves firm performance (Dalton et al., 1999; Gordon, 2007; Linck et al., 2008). Thus, increased board size with a dominance of outside directors easily transfer knowledge and expertise which in turn produces a strong resource dependence role. Mangena and Chamisa, (2008) found in a study in South Africa that firm with higher NEDs on the boards had lesser probability of suspension from the stock exchange. Further, it can be asserted that the correlation between NEDs and firm performance is mediated by board size (resource dependence role). Therefore, in combining these (Agency and Resources dependency) theoretical perspectives, it is argued that board contributes monitoring and the provision of resources. Therefore, an important contribution of this study is a more fully specified and richer model of the relationship between boards' structure and firm performance mediated by board control/monitoring and resource dependence roles. Accordingly, our stream of hypothesis would be as follows:

H₁: There is positive relationship between proportion of Non-Executive Directors and frequency of board meetings

H₂: There is positive relationship between proportion of Non-Executive Directors and board size

H₃: The relationship between proportion of NEDs and firm performance (ROE) is mediated by board control role (frequency of board meetings) and board resource dependence role (board size)

H₄: The relationship between proportion of NEDs and firm performance (ROA) is mediated by board control role (frequency of board meetings) and board resource dependence role (board size)

2.2 CEO duality, board roles and firm Performance

Corporate leadership structure could be divided into combined leadership structure and separated leadership structure (Coles JW, McWilliams VB, Sen N (2001). This has something to do with the position of the chairman of the board and CEO which continue to be top of mind around the corporate world, particularly as they relate to whether the roles of the chairman and CEO should be combined or separated. However, despite the importance of role duality of CEO/chairperson there is little agreement on how it affects the firm performance in agency and resource dependence theories as reveal by the extant literature. Combined leadership structure occur when there is CEO duality which refers to a board leadership structure in which one person undertakes the combined roles of chief executive officer (CEO–management) and chairman of the board. The chairman of the board is responsible for managing the board whereas in contrast, the CEO is responsible for the day-to-day management of the company, including the implementation of board decisions. Weir et al, (2002) explain that the resource dependence theory supports the dual role of the CEO and board chairperson as they found that firms with existence of role duality had better performance. Likewise supporters of stewardship theory argue that

CEO duality positively influence firm performance. Dehaene et al. (2001) found that when both roles were combined, there was a positive relationship between duality and firm performance. This may have a plausible explanation that with duality CEO becomes more powerful with unity of command and being an insider enjoys strategic knowledge of the firm better than any outsider chairman because less contracting is needed and information asymmetry is reduced (Haniffa RM, Cooke TE, 2005). According to these theories if the CEO has dual powers he will be able to focus more closely on the firm objectives by knowing the organization affairs in more depth (Haniffa and Hudaib, 2006) This entails that a powerful CEO will have the minimum board interference in his decisions and will be able to carve out a detailed long term strategy for the firm (Haniffa and Cooke, 2002).

Another valid reason for duality is considered to be accountability as the responsibility can be easily fixed to one person as compared to a group of people for poor performance of the organization (Bozec, 2005). However, there is also extant literature regarding inverse effect of CEO duality on firm performance (Haniffa and Cooke, 2002). As indicated by Jensen (1993) the role duality increases the agency problem because CEOs may not be accountable to the board as well as their role as CEO overshadows their role as chairperson and in this way the board's effectiveness to monitor is compromised and they start protecting and defending the executives. Therefore, separating the roles between two people will improve the board capability to monitor as well as curtail the entrenchment behaviour by a CEO (Lipton and Lorsch, 1992; Haniffa and Cooke, 2002). It will also help get rid of a non-performing CEO (Monks and Minow, 2001). This can help in developing mechanism to curtail agency problems by preventing managers from pursuing goals that advance their self-interests to the disadvantage of shareholders. Therefore, in the light of above discussion, the quandary is that agency theorists reflect that boards'

effective monitoring role is affected by role duality and separation of the two roles is necessary for better performance of the firm while the school of thought related with stewardship and resource dependence theorists claim that CEO role will be more effective when coupled with board chair and makes the organization more focussed and efficient (Haniffa and Hudaib, 2006)

Finally, there are also arguments that assert CEO duality has no influence on the performance of firm. Daily and Dalton (1992) found that there was no relationship between CEO duality and firm performance. Furthermore, some other studies also concluded that there was no significant association between CEO duality and firm performance [Zubaidah ZA, Nurmala MK, Kamaruzaman, J (2009)] Hence, it can be contended that the nexus between dual role of CEO/chairperson and the firm financial performance is equivocal and can't be determined through a direct link (Boyd, 1995; Kiel and Nicholson, 2003; Finkelstein and Mooney, 2003; Forbes and Milliken 1999) Academic research on CEO duality focuses mainly on firm performance and to date remains rather controversial. The theoretical grounds for a link between CEO duality and accounting- or market-based performance are extensive, yet no comprehensive evidence is available to confirm it. According to Dalton and Dalton (2011), little consistency appears in extant studies that relate CEO duality to financial performance. Krause, Semadeni and Cannella (2014) accordingly call for research that considers mediating and moderating attributes that might alter the strength or direction of the relationship. This opens up a way to look into this relationship under the mediation effect of board roles (McNulty, 2013). A number of roles have been suggested in the literature by the scholars however monitoring role and resource dependence role have been given more importance (Hillman and Dalziel, 2003). Board meeting frequency which symbolises the process and activity of the corporate board under the agency lens is proxies as board monitoring role

whereas the size of the board measure the board resource dependence role under the resource dependence lens. Linck, et al., (2008) are of the view that one person occupying the position of CEO and Chair of the board is a symbol of entrenchment activity by the CEO. This will undermines the monitoring role of the board which invariably reduces the board activity and its resources provision roles. Though it is acknowledged that increased board activity is instrumental in minimising entrenchment and thereby improve firm performance (Kiel and Nicholson, 2003), board activity can however be affected when the CEO also doubles as the chair of the board of directors (Brick and Chidambaran, 2010). Similarly, the independence of the board can be undermined as CEO duality grants excess power to a single executive, weakening board monitoring, fostering managerial entrenchment and negatively affecting firm performance (Boyd, 1994; Westphall and Zajac, 1994; Dalton *et al.*, 1998; Finkelstein and D'Aveni, 1994; Krause, Semadeni and Cannella, 2014) and more so agency problems in the form of increased information asymmetry between the CEO and the board (De Villiers et al., 2011). Empirical evidence in line with this argument has linked CEO duality reduces board activity due to unfitted power leading to adverse outcomes for shareholders as a result of imposed decisions including excessive executive compensation on the board(Boyd, 1994). The CEO would in this case monopolize board meetings and lean on his own agendas which are different from the interest of the owners of the firm (Kelton and Yang, 2008). In the absence of a clear separation of the two leadership roles, the board's role in overseeing managerial opportunism is curtailed (Zona, 2012).

Conversely, separated leadership structure that is the separation of the CEO and board chairman roles will increase the board activity by making the CEO accountable to his actions. As this study has adopted the Vafeas (1999) argument that board activity measures the board monitoring capability, it can be contended that boards with an insider chairman

would meet less frequently. Hermalin and Weisbach (1998) propose a board structure model to be a product of an intercession between the CEO and outside directors. The CEO, as part of a company's structure, have a better knowledge of the business and may provide useful company information while outside directors play a role of control over managerial decisions through skills, knowledge expertise and objectivity, to reduce the agency's costs and to protect shareholders' interest (Farinha, 2003). While Lehn et al., (2003) are of the view that monitoring or control function of the board is more efficient with a larger board having a sizable proportion of outside directors because of better repository of joint shareable information. Therefore, separation of roles of CEO and Chairman will be instrumental in expanding the board memberships with more people having diversified backgrounds from outside. Consequently, the following hypotheses would be tested:

H5: There is a negative relationship between role duality and frequency of board meetings

H6: There is a negative relationship between role duality and board size

H7: The relationship between CEO duality and firm performance (ROE) is mediated by frequency of board meetings (control role) and board size (resource dependence role).

H8: The relationship between CEO duality and firm performance (ROA) is mediated by frequency of board meetings (control role) and board size (resource dependence role).

2.3 The Conceptual Model

Over three decades of extensive research in the field of corporate governance much is still yet to be known about board structural characteristics or elements that contributes to the performance of board roles and ultimately the performance of the firm. Despite few recent studies on the composition of corporate board structure and its effect on the various roles perform by the board; there have been numerous calls for

III. METHODOLOGY

more research studying board roles. Here, we respond to these calls by providing a contribution to board roles research with a development of a model that depart from the conventional input-output approach to input-mediator-output from which a variety of hypotheses are developed. The conceptual framework of the research is shown in Figure 1. The model summarizes the hypotheses developed based upon various theoretical foundations.

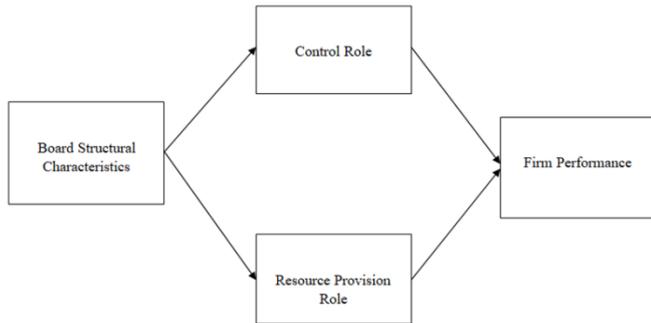


Figure 1. Research Model

3.1 Sample and Data

The sample firms used in this study in examining the board structural characteristics, board roles, and financial performance link were drawn from companies listed on the Ghana Stock Exchange (GSE), Nigeria Stock Exchange (NGSE), Johannesburg Stock Exchange (JSE) of South Africa and Nairobi Securities Exchange (NSE) of Kenya. The official list of all the listed firms was obtained directly from the official stock market websites of the countries involve and was crosschecked against the list provided by the official website of stock market of the African sub region. (<https://www.african-markets.com/en/stock-markets>). The details of the listed firms into financial and non-financial firms are shown below since the study is based on the non-financial firms.

Table 1. Statistics on Stock Markets for the Study (2018)

Stock market	No. of Listed companies	No of Non-Financial Companies	Estimated No. for the study	percentage
South Africa (JSE)	392	328	176	54%
Nigeria (NSE)	171	109	40	37%
Ghana (GSE)	44	33	17	51%
Kenya (NSE)	65	42	19	45%
Total	672	512	252	

The data were extracted from company audited annual financial and corporate governance reports. The regressions employed are fixed effect and random effect models to examine the impact of corporate governance, board roles and firm performance. The GLS and OLS regressions were by extension employed.

3.2 Empirical Model Specification

The panel data, also known as longitudinal or cross-sectional time-series data, takes the general form denoted as follows:

$$Y = \alpha + \beta X_{i,t} + \varepsilon_{i,t}$$

Where Y represents the dependent variable, which is the our measure of financial performance which is ROE or ROA for country i in period t; and $X_{i,t}$ is a vector of explanatory variables for country i in time t; ε represents the disturbance term; α is a constant term; and β represents the regression coefficient of the explanatory variables. i and t represents the cross-sectional and time-series dimensions respectively.

Following the works of Ntim, Collins G. and Osei, Kofi A. (2011), Mangena, M. and Tauringana, V.

(2006), we control for other factors considered as control variables that influence firms' financial performance and generalize the specification of a performance equation that accounts for the effects of corporate governance mechanisms on financial performance of firms in Sub-Saharan Africa. Thus, in deriving our empirical model for estimating this relationship for Sub-Saharan Africa, we posit that:

$$FP = f(NED, CEO \text{ dual}) \tag{2}$$

The mathematical form of the above function can be written as:

$$FP = \beta_0 + \beta_1 NED + \beta_2 CEO \text{ dual} + \beta_3 \text{Control} \tag{3}$$

Following an econometric panel estimation technique equation seven can be rewritten as

$$FP_{it} = \beta_0 + \beta_1 BSC (\beta_1 \& \beta_2)_{it} + \lambda_i [\beta_5 LEV_{it} + \beta_6 SIZE_{it} + \beta_7 AGE_{it} + \beta_8 Econ \text{ gr}_{it} + \beta_9 MZ_{it}] + \eta_i + \varepsilon_{it} \tag{4}$$

As discussed earlier, both return on assets (ROA) and return on equity (ROE) have been used as measures of the firm's financial performance. We therefore disaggregated equation (4) into the following sets of equations:

$$ROA_{it} = \alpha_0 + \beta_1 BSC (\beta_1 - \beta_4)_{it} + \lambda_i [\beta_5 LEV_{it} + \beta_6 SIZE_{it} + \beta_7 AGE_{it} + \beta_8 Econ \text{ gr}_{it} + \beta_9 MZ_{it}] + \eta_i + \varepsilon_{it} \tag{5}$$

$$ROE_{it} = \alpha_0 + \beta_1 BSC (\beta_1 - \beta_4)_{it} + \lambda_i [\beta_5 LEV_{it} + \beta_6 SIZE_{it} + \beta_7 AGE_{it} + \beta_8 Econ \text{ gr}_{it} + \beta_9 MZ_{it}] + \eta_i + \varepsilon_{it} \tag{6}$$

Where: FP denotes financial performance for firm *i*, BSC denote vector of board structural characteristics variables (NED, CEO dual); NED denotes board independence (NED) and CEO dual denote board leadership (CEO/ Chair Duality), LEV denotes leverage, SIZE denote company size, AGE denotes Firm's age, MZ denotes Firm's Size and Econ gr denotes Economic growth. β_i denotes measures the relative effect of board structural characteristics on financial performance and λ_i denotes set of parameters measuring the relative effect of the control variables. *t* denotes time and ε_t denotes stochastic error term.

Equation (5) and (6) are the basis of estimating the relationship between board structural characteristics and measures of firms' financial performance. However, to further enrich our analysis, we made use of board role (frequency of board meetings-FOBM and board size-BZ) as a mediating variables.

Table 1 Description of Variables

Variables	Description	Formula
Board Structural Characteristics	to be measured by proportion of Non Executives Directors (NEDs) on the board	Number of NEDs board members over board size times 100
Board Independence(NED)		
CEO/ Chair Duality (Board leadership)	would be looked by the presence or absence of CEO/Chair duality on the board	Measure through a dummy which assumes value of 1 if the CEO and the Chairman of the Board is occupied by the same person otherwise 0
Mediating Variables	Board roles	

Monitoring/Control Role	The means through which the board perform their supervisory role. This is measured through board meetings held in the period	Number of board meetings held in the period
Resource Provision/dependency role	The ability of the board to provide vitae resources to the firm. This is proxy by the size of the board	Total number of members on the Board(board size)
Control variables	Leverage	Total long term liabilities over TA
	Firm size	ln of total assets (natural log of TA)
	Firm age	Years of incorporation
	Economic growth	GDP
	Market size	Numbers of Listed companies
Firm performance	Return on Assets (ROA)	Net income over total assets
	Return on Equity (ROE)	Net income over total equity

IV. RESULTS AND DISCUSSION

We employ unique data on a sample of 252 listed companies on Ghana, Nigeria, Kenya and South Africa's stock exchanges. We must indicate that our selection of the 252 firms was primarily based on convenience and also the availability of completed data when eliciting data on some of the governance variables (such as board activity intensity,

CEO duality, and audit committee characteristics etc.). Thus, while the performance variables were largely computed based on the firms financials performance, two main measures were considered, the return on equity (ROE) and return on asset (ROA). Firms sampled covered industrial, manufacturing, mining, agriculture and services sectors. Table 2 is a summary of firm distribution by country and sector.

Table 2 : Firm Distribution by Sector and Country

Country	Sector					Total
	Mining	Manufacturing	Industrial	Agricultural	Services	
Ghana	2	5	4	2	4	17
Kenya	2	5	7	1	4	19
Nigeria	5	11	13	4	7	40
South Africa	19	48	51	23	35	176
Total	28	69	75	30	50	252

4.1 Board Structural Characteristics, Board Role and ROE as Firm Performance

The mediation hypotheses predicted that board roles mediate the relationship between board structural characteristics and firm performance. Ordinary least square with fixed effects method for regression was used to predict the mediating role of board roles. The choice of the fixed effect model was due to the result from the Hausman specification test that suggests the preference of the fixed effect model over the random

effect. The three steps technique suggested by Baron and Kenny (1986) was employed to assess the mediating role of board roles. Baron and Kenny (1986) suggested three steps for assessing mediation among independent, mediating, and dependent variables. In order to support mediation of variable(s), the following three conditions of mediation are essential to be met in regression analysis.

First condition: The independent variables and the proposed mediators must each, be significantly related to the dependent variable when considered separately.

Second Condition: Independent variable(s) to be significantly related to the proposed mediator(s).

Third Condition: The last condition stipulates that the relationship between the independent variable (IV), and the dependent variable (DV), should be weaker or non-significant when the proposed mediator is in the regression equation than when the proposed mediator is not in the equation

H₁: There is positive relationship between proportion of Non-Executive Directors and frequency of board meetings

H₂: There is positive relationship between proportion of Non-Executive Directors and board size

H₃: The relationship between proportion of NEDs and firm performance (ROE) is mediated by board control role (frequency of board meetings) and board resource dependence role (board size)

We used the above three conditions to test the following hypotheses:

Table 4. Board Structural Characteristics, Board Role and ROE as Firm Performance

Independent variables	Dependent Variables (ROE)							
	M1	M2	M3	M4	M5 (FOBM)	M6 (BZ)	M7	M8
Const.	0.3261 (3.21)**	0.2188 (4.27)**	0.1862 (3.63)**	0.5622 (4.36)**	0.4222 (3.93)**	0.3271 (4.95)**	0.4262 (3.66)**	0.5277 (4.50)**
Firm Size (TA)	0.1241 (1.17)	0.0289 (3.19)**	-0.0176 (0.65)	-0.0076 (0.85)	-0.0219 (2.76)**	0.4532 (0.77)	0.0349 (3.86)	0.0362 (1.73)
Leverage	-0.2340 (3.63)**	-0.2451 (4.76)**	0.5244 (3.75)**	0.3655 (3.18)**	0.0624 (3.63)**	0.0522 (0.63)	0.4091 (3.63)**	0.4191 (3.75)**
Econ. Growth	-0.516 (4.28)**	-0.3242 (2.14)*	0.0366 (3.92)**	0.0452 (3.16)**	0.2661 (2.01)*	0.1711 (3.24)**	0.0695 (0.95)	0.402 (1.41)
Firm Age	0.0133 (0.28)	0.1065 (0.45)	0.0195 (2.003)*	0.0743 (0.89)	0.0262 (2.79)**	0.0113 (0.12)	0.6443 (0.44)	0.4251 (0.79)
Market Size	-0.6132 (4.67)**	-0.5231 (3.24)**	-0.2171 (2.33)**	-0.3544 (3.19)**	-0.1752 (2.82)**	0.0955 (1.36)	0.1364 (0.87)	0.2655 (0.21)
Frequency of board meeting		0.0253 (2.06)*					0.0050 (3.92)**	
Board Size			-0.0712 (3.51)**					-0.0051 (2.73)**
NEDs				0.1523 (2.90)**	0.0423 (2.71)**	0.1076 (3.32)**	0.0045 (3.17)**	0.0071 (2.87)**
R ²	0.3543	0.7242	0.7197	0.7752	0.7827	0.7652	0.7892	0.7915
F-test	F= 11.42 (0.0000)	F= 10.77 (0.0000)	F=10.21 (0.0000)	F=10.53 (0.0000)	F=11.31 (0.0000)	F=10.34 (0.0000)	F=11.42 (0.0000)	F=9.95 (0.0000)
Breusch Pagan LM test	$\chi^2=0.245$ (0.5262)	$\chi^2=0.095$ (0.4251)	$\chi^2=0.162$ (0.7231)	$\chi^2=0.092$ (0.6241)	$\chi^2=0.147$ (0.5231)	$\chi^2=0.066$ (0.5534)	$\chi^2=0.052$ (0.4261)	$\chi^2=0.062$ (0.4372)
Hausman Test	$\chi^2=15.42$ (0.0000)	$\chi^2=14.45$ (0.0000)	$\chi^2=15.13$ (0.0000)	$\chi^2=14.61$ (0.0000)	$\chi^2=15.87$ (0.0000)	$\chi^2=16.07$ (0.0000)	$\chi^2=15.19$ (0.0000)	$\chi^2=15.32$ (0.0000)

Note, given the results from the various tests conducted (F-test, Breusch Pagan LM test and the Hausman Test); the fixed effects model has been chosen and consequently reported. *, ** means 5% and 1% significant levels respectively, and t –values are reported in parenthesis.

The results obtained from regression analysis by testing the Mediating Effect of Board Role between Board Structural Characteristics and return on equity (ROE) as Firm Performance are presented in Table 4. In Model1 (M1) in Table 4, the controlled variables have been regressed against the performance measure

of return on equity (ROE). The regression relationship has been controlled by firm size (total asset), leverage, Economic growth, Market size, and Firm age. The figures reveal that there is a significant negative relationship of three of these variables (see table 4, M1) with ROE and fit statistics for M1 are R² = .3543 when a restricted model is run by regressing only the controls against ROE. This also implies that the model run by only controls can have significant effect on the model. The overall model explains about 35.4% variance.

In examining the mediation effects, we sequentially introduced the independent variable (NEDs) and the proposed mediators (frequency of board meeting and board size), in to the model and were found to be significantly related to the dependent variable (ROE) when considered separately Which satisfy the first condition for the mediation relationship.

The results in M2, M3 and M4 show marginally significant positive relationship for frequency of board meetings on the corporate performance ($\beta = .0253, p < .05$) and negative relationship for the board size on corporate performance ($\beta = -.0712, p < .1$) and proportion of non-executive directors on the board (NEDs) and corporate performance ($\beta = .1523, p < .01$). The fit statistics for M2, M3, and M4 are $R^2 = .7242$, $R^2 = .7197$, and $R^2 = .7752$, which are relatively higher than M1.

In summary, to assess the effect of independent variables on mediating variable as the first condition of mediation, ROE as performance measure was regressed on board structural characteristics and board roles. The first regression model provides the results of relationship between board structural characteristics with mediating effects and ROE (columns M2, M3 and M4). The results provided by M2, M3 and M4 as discussed earlier provides adequate evidence for the first condition of mediation recommended by Baron and Kenny (1986).

In M5 and M6, the second condition of mediation is assessed by regressing board control role/monitoring role and resource provision role (Frequency of board meetings (FOBM) and board size (BZ)) on Board Structural Characteristics indicators (NEDs) respectively. More specifically, in M5 the board monitoring role (Frequency of board meetings) is regressed on Board Structural Characteristics indicator (NEDs) without accounting for the mediation effect. The results show that the relationship is significant and positive ($\beta = .0423, p < .01$). The value for the proportion of non-executive directors and resource dependence role (Board Size) in M6 is also positive and significant ($\beta = .1076, p < .01$) showing that more presence of NEDs on the board increases the board meeting frequency causing improved control role of the board and leading to more resource provision role. The value of fit statistics are R^2

$= .7827$, and $R^2 = .7652$ for this model which elaborates that almost 78.2% and 76.5% of the variances in the models are accounted for these variables. These results favor the hypotheses H₁, and H₂ that *there is positive relationship between proportion of Non-Executive Directors and frequency of board meetings and that there is positive relationship between proportion of Non-Executive Directors and board size.*

To test for the final condition of mediation both Board Structural Characteristics indicator and board control role were added in the models M7 and M8. More specifically, in M7 the ROE is regressed on board control role (Frequency of board meetings) while accounting for the mediating effect. The results show that most of the variables are insignificant except for the leverage which is marginally significant and positive ($\beta = .4091, p < .01$). The value of fit statistics is $R^2 = .7892$ for this model which elaborates that almost 78.9% of the variance in the model is accounted for these variables. The value of frequency of board meetings which is a mediating variable is statistically significant and positive ($\beta = .0050, p < .01$) and by introducing it into the model the marginal effect of the independent variable (NEDs) decreases ($\beta = .1523 > \beta = .0045$) which supports the third and necessary condition for mediation. Thus mediation effect is confirmed.

In M8 the ROE is regressed on board resource provision role (board size) while accounting for the mediation effect. The results show that most of the variables are insignificant except for the leverage which is marginally significant and positive ($\beta = .4191, p < .01$). The value of fit statistics is $R^2 = .7915$ for this model which elaborates that almost 79.1% of the variance in the model is accounted for these variables. The value of board size which is a mediating variable is statistically significant and positive ($\beta = .0051, p < .01$) while then again the marginal effect of the independent variable (NEDs) decreases ($\beta = .1523 > \beta = .0071$) which supports the third and necessary condition for mediation. Thus mediation effect is confirmed. These results supported hypotheses H₃, that *the relationship between proportion of NEDs and firm performance (ROE) is mediated by board control role (frequency of board meetings) and board resource dependence role (board size).*

4.2 CEO duality, Board Role and ROE as Firm Performance

Duality, in corporate governance literature, refers to a situation where a person occupies the seat of Chief Executive Officer (CEO) and the chairperson of the board. In many cases, CEOs with long tenure usually double as the board chair. That is, with duality, an individual person, CEO, is responsible for managing the board which is the role of Chairperson and the same person is also responsible for the day to day management of the company (e.g., such as board decisions implementation) which is the role of CEO. The practice is rejected by many since it weakens the board's independence and serves as a threat to

objective decision making in the firm. Consequently, it is important to examine the mediated effects of CEO duality under agency as well as resource dependency roles; hence, the following hypotheses are formed:

H₅: There is a negative relationship between role duality and frequency of board meetings

H₆: There is a negative relationship between role duality and board size

H₇: The relationship between CEO duality and firm performance (ROE) is mediated by frequency of board meetings (control role) and board size (resource dependence role).

Table 5. CEO duality, Board Role and ROE as Firm Performance

Independent variables	Dependent Variables (ROE)							
	M1	M2	M3	M4	M5 (FOBM)	M6 (BZ)	M7	M8
Const.	0.2214 (3.66)**	0.1762 (4.43)**	0.4262 (3.73)**	0.3272 (3.53)**	0.3622 (3.17)**	0.2639 (3.44)**	0.3262 (3.11)**	0.2643 (4.72)**
Firm Size (TA)	0.1241 (1.17)	0.0289 (3.19)**	-0.0176 (0.65)	-0.0095 (1.21)	-0.1244 (3.15)**	0.2724 (0.56)	0.0738 (2.00)*	0.1633 (2.33)*
Leverage	-0.2340 (3.63)**	-0.2451 (4.76)**	0.5244 (3.75)**	0.3713 (2.98)**	0.0542 (2.71)**	-0.1099 (2.83)	0.2871 (3.94)**	0.2533 (3.74)**
Econ. Growth	-0.516 (4.28)**	-0.3242 (2.14)*	0.0366 (3.92)**	0.0562 (3.74)**	0.1877 (2.43)*	0.0826 (2.07)**	0.0427 (0.27)	0.5372 (1.07)
Firm Age	0.0133 (0.28)	0.1065 (0.45)	0.0195 (2.003)*	0.0331 (2.09)	0.0349 (2.63)**	0.1632 (0.73)	0.4414 (0.83)	0.2442 (0.29)
Market Size	-0.6132 (4.67)**	-0.5231 (3.24)**	-0.2171 (2.33)**	0.2514 (0.19)	-0.0942 (3.61)**	0.1661 (2.72)**	0.0935 (2.53)	0.9762 (0.53)
Frequency of board meeting		0.0253 (2.06)*					0.0472 (2.63)**	
Board Size			-0.0712 (3.51)**					-0.0178 (2.91)**
CEO duality				0.1772 (3.61)**	-0.1137 (3.42)**	0.2514 (2.87)**	0.0236 (3.48)**	0.0213 (3.99)**
R ²	0.3543	0.7242	0.7197	0.7554	0.7374	0.7324	0.7731	0.7634
F-test	F= 11.42 (0.0000)	F= 10.77 (0.0000)	F=10.21 (0.0000)	F=11.21 (0.0000)	F=10.45 (0.0000)	F=10.95 (0.0000)	F=11.83 (0.0000)	F=10.32 (0.0000)
Breusch Pagan LM test	$\chi^2=0.245$ (0.5262)	$\chi^2=0.095$ (0.4251)	$\chi^2=0.162$ (0.7231)	$\chi^2=0.073$ (0.4231)	$\chi^2=0.036$ (0.4191)	$\chi^2=0.152$ (0.4362)	$\chi^2=0.191$ (0.5331)	$\chi^2=0.162$ (0.4334)
Hausman Test	$\chi^2=15.42$ (0.0000)	$\chi^2=14.45$ (0.0000)	$\chi^2=15.13$ (0.0000)	$\chi^2=14.76$ (0.0000)	$\chi^2=16.12$ (0.0000)	$\chi^2=14.11$ (0.0000)	$\chi^2=14.64$ (0.0000)	$\chi^2=14.86$ (0.0000)

Note, given the results from the various tests conducted (F-test, Breusch Pagan LM test and the Hausman Test); the fixed effects model has been chosen and consequently reported. *, **

means 5% and 1% significant levels respectively, and t –values are reported in parenthesis.

Here, we follow similar procedure as we did before, In M5 and M6 of table 5, the second condition of mediation is assessed by regressing board control role and resource provision role (Frequency of

board meetings and board size) respectively on Board Structural Characteristics indicators (Chairman/CEO duality). More specifically, in M5 the board monitoring role (Frequency of board meetings) is regressed on Board Structural Characteristics indicator (Chairman/CEO duality) without accounting for the mediation effect. The results show that the relationship is significant and negative ($\beta = -.1137, p < .01$). The value for the relationship between board size and Chairman/CEO duality is however positive and significant ($\beta = .2514, p < .01$) showing that this particular hypothesis does not hold for the study. The values of fit statistics are $R^2 = .7374$, and $R^2 = .7324$ for this model which elaborates that almost 73.7% and 73.2% of the variances in the models are accounted for these variables. These results favor the hypotheses H₅, but rejected H₆ that *there is a negative relationship between role duality and frequency of board meetings and that there is a negative relationship between role duality and board size*.

Similarly, to test for the final condition of mediation both Board Structural Characteristics indicator and board control role and resource provision role were added in the models M7 and M8 respectively. More specifically, in M7 the ROE is regressed on board control role (Frequency of board meetings) while accounting for the mediation effect. The results show that four of the variables are significant and three of them were insignificant. The value of fit statistics is $R^2 = .7731$ for this model which elaborates that almost 77.3% of the variance in the model is accounted for these variables. The value of frequency of board meetings which is a mediating variable is statistically significant and positive ($\beta = .0472, p < .01$) and by introducing the mediating variable into the model the marginal effect of the independent variable (Chairman/CEO duality) decreases ($\beta = .1772 > \beta = .0236$) which supports the third and necessary condition for mediation. Thus mediation effect is confirmed.

In M8 the ROE is regressed on board resource provision (board size) while accounting for the mediation effect. The results show that most of the variables are insignificant except for three that show insignificant effects (*economic growth, firm age and market size*). The value of fit statistics is $R^2 = .7634$ for this model which elaborates that almost 76.3% of the variance in the model is accounted for these variables. The value of board size which is a mediating variable is statistically significant and negative ($\beta = -.0178, p < .01$) and by introducing the mediating variable into the model the marginal effect of the independent variable (Chairman/CEO duality) decreases ($\beta = .1772 > \beta = .0213$) which supports the third and necessary condition for mediation. Thus mediation effect is confirmed. These results favor the hypotheses H₇, that *the relationship between CEO duality and firm performance (ROE) is mediated by board control role (frequency of board meetings) and board resource dependence role (board size)*.

4.3 Board Structural Characteristics, Board Role and ROA as Firm Performance

The results obtained from regression analysis by testing the relationships between Governance variables, Board Resource Provision and monitoring roles and Performance measure of ROA are presented in Table 6

The mediation hypotheses predicted that board roles mediate the relationship between board structural characteristics and firm performance. Ordinary least square with fixed effects method for regression was used to predict the mediating role of board roles. The choice of the fixed effect model was due to the result from the Hausman specification test that suggests the preference of the fixed effect model over the random effect. The three steps technique suggested by Baron and Kenny (1986) was employed to assess the mediating role of board roles. Baron and Kenny (1986) suggested three steps for assessing mediation among independent, mediating, and dependent variables. In

order to support mediation of variable(s), the following three conditions of mediation are essential to be met in regression analysis.

First condition: The independent variables and the proposed mediators must each, be significantly related to the dependent variable when considered separately.

Second Condition: Independent variable(s) to be significantly related to the proposed mediator(s).

Third Condition: The last condition stipulates that the relationship between the independent variable (IV), and the dependent variable (DV), should be weaker

or non-significant when the proposed mediator is in the regression equation than when the proposed mediator is not in the equation

We used the above three conditions to test the following hypotheses:

H₄: The relationship between proportion of NEDs and firm performance (ROA) is mediated by board control role (frequency of board meetings) and board resource dependence role (board size).

H₈: The relationship between CEO duality and firm performance (ROA) is mediated by frequency of board meetings (control role) and board size (resource dependence role).

Table 6. Board Structural Characteristics, Board Role and ROA as Firm Performance

Independent variables	Dependent Variables (ROA)							
	M1	M2	M3	M4	M5 (FOBM)	M6 (BZ)	M7	M8
Const.	0.3252 (4.73)**	0.2653 (3.47)**	0.2763 (4.19)**	0.3672 (3.76)**	0.3673 (3.51)**	0.2886 (4.11)**	0.3828 (3.90)**	0.3637 (3.64)**
Firm Size (TA)	0.2151 (1.36)	0.1324 (1.35)	0.2131 (0.56)	0.1432 (1.22)	0.3254 (3.42)**	0.3622 (3.84)**	0.3252 (3.54)**	0.3346 (3.77)**
Leverage	-0.3181 (3.45)**	-0.2314 (3.75)**	-0.3252 (4.15)**	0.1746 (3.61)**	0.0756 (3.19)**	0.3245 (3.63)**	0.2254 (3.95)**	0.2653 (3.73)**
Econ. Growth	-0.334 (3.21)**	0.0254 (3.53)**	-0.2431 (3.52)**	0.1834 (3.15)**	0.2766 (4.02)**	0.2738 (3.98)**	0.2647 (3.52)**	0.1963 (3.38)**
Firm Age	0.0405 (2.73)**	0.0246 (2.01)*	-0.2134 (3.73)**	0.1742 (3.33)**	0.1655 (1.23)	0.1273 (1.48)	0.1522 (1.07)	0.1855 (1.24)
Market Size	-0.1523 (3.77)**	-0.1652 (3.15)**	-0.2142 (2.92)**	-0.2651 (3.16)**	0.4251 (3.14)**	0.4733 (3.19)**	0.3271 (3.84)**	0.3273 (3.19)**
Frequency of board meeting	0.1542 (3.17)**						0.0263 (3.76)**	0.0511 (3.94)**
Board Size		0.1414 (4.00)**					0.0633 (4.27)**	0.0175 (4.23)**
NED			0.2355 (3.43)**		0.2467 (3.57)**	0.2271 (3.79)**	0.0641 (3.77)**	0.0566 (3.43)**
CEO dual				0.2197 (3.74)**	0.2259 (3.78)**	0.2595 (3.22)**	0.04276 (3.53)**	0.1074 (3.19)**
R ²	0.6533	0.8426	0.8363	0.8637	0.8435	0.8265	0.8536	0.8393
F-test	F= 10.51 (0.0000)	F= 12.19 (0.0000)	F=12.27 (0.0000)	F=12.17 (0.0000)	F=11.63 (0.0000)	F=10.17 (0.0000)	F=12.43 (0.0000)	F=12.42 (0.0000)
Breusch Pagan LM test	$\chi^2=0.093$ (0.4324)	$\chi^2=0.136$ (0.4895)	$\chi^2=0.092$ (0.5371)	$\chi^2=0.063$ (0.4375)	$\chi^2=0.064$ (0.4190)	$\chi^2=0.043$ (0.5377)	$\chi^2=0.085$ (0.4387)	$\chi^2=0.186$ (0.5363)
Hausman Test	$\chi^2=14.67$ (0.0000)	$\chi^2=15.73$ (0.0000)	$\chi^2=14.44$ (0.0000)	$\chi^2=15.18$ (0.0000)	$\chi^2=16.63$ (0.0000)	$\chi^2=15.09$ (0.0000)	$\chi^2=15.73$ (0.0000)	$\chi^2=16.66$ (0.0000)

Note, given the results from the various tests conducted (F-test, Breusch Pagan LM test and the Hausman Test); the fixed effects model has been chosen and consequently reported. *, ** means 5% and 1% significant levels respectively, and t – values are reported in parenthesis.

The results obtained from regression analysis by testing the relationships between Governance variables, Board monitoring/control role and resource provision role and performance measure of return on assets (ROA) are presented in Table 6.

In examining the mediation effects, we sequentially introduced the independent variables proportion of non-executive directors on the board (NEDs), CEO/Chairman duality and the proposed mediators (frequency of board meeting and board size), in to the model and were found to be significantly related to the dependent variable (ROA) when considered separately Which satisfy the first condition for the mediation relationship.

The results in M1, M2 and M3 show marginally significant positive relationship for frequency of board meetings on the corporate performance ($\beta = .1542, p < .01$), and also positive relationship for the board size on corporate performance ($\beta = .1414, p < .01$) and proportion of non-executive directors on the board (NEDs) and corporate performance ($\beta = .2355, p < .01$) and CEO/Chairman duality on corporate performance ($\beta = .2197, p < .01$). The fit statistics for M1, M2, M3 and M4 are $R^2 = .6533, R^2 = .8426, R^2 = .8363, R^2 = .8637$ which are relatively higher.

In summary, to assess the effect of independent variables on mediating variable as the first condition of mediation, ROA as performance measure was regressed on board structural characteristics and board roles. The first regression model provides the results of relationship between board structural characteristics with mediating effects and ROA (columns M1, M2, M3 and M4). The results provided by M1, M2, M3 and M4 as discussed earlier provides adequate evidence for the first condition of mediation recommended by Baron and Kenny (1986).

In M5 and M6, the second condition of mediation is assessed by regressing board control role and resource provision role (Frequency of board meetings (FOBM) and board size (BZ)) on Board Structural Characteristics indicators (NEDs) and CEO/Chairman duality. More specifically, in M5 the board monitoring role (Frequency of board meetings) is regressed on Board Structural Characteristics indicators (NEDs) and CEO/Chairman duality without accounting for the mediation effect. The results show that the relationships are significant and positive ($\beta = .2467, p < .01$) and ($\beta = .2259, p < .01$) for (NEDs) and CEO/Chairman duality respectively. Then again in M6 The values for the proportion of non-executive directors is also positive and significant ($\beta = .2271, p < .01$) and CEO/Chairman duality is also positive and significant ($\beta = .2595, p < .01$) when the board resource provision role (board size) is regressed on board structural characteristics without accounting for the mediation effect showing that more presence of NEDs and CEO duality on the board increases the board resource provision role of the board. The value of fit statistics are $R^2 = .8435$, and $R^2 = .8265$ for these model which elaborates that almost 84.3% and 82.6% of the variances

in the models are accounted for these variables. These results favor the hypotheses H₄, that *the relationship between proportion of NEDs and CEO duality and firm performance (ROA) is mediated by board control role (frequency of board meetings) and board resource dependence role (board size).*

To test for the final condition of mediation both Board Structural Characteristics indicators and board control role and resources provision roles were added in the models M7 and M8 respectively. More specifically, in M7 the ROA is regressed on board control role (Frequency of board meetings (FOBM) while accounting for the mediation effect. The results show that most of the variables are significant except for firm age which is marginally insignificant and positive ($\beta = .1522, p > .05$). The value of fit statistics is $R^2 = .8536$ for this model which elaborates that almost 85.3% of the variance in the model is accounted for these variables. More importantly the value of frequency of board meetings which is the mediating variable is statistically significant and positive ($\beta = .0263, p < .01$) and by introducing it into the model the marginal effect of the independent variable (NEDs) decreases ($\beta = .0641 < \beta = .2467$) which supports the third and necessary condition for mediation. Thus mediation effect is confirmed. Similarly, the value of board size which is a mediating variable is statistically significant and positive ($\beta = .0633, p < .01$) and by introducing it into the model the marginal effect of the independent variable (NEDs) decreases ($\beta = .0641 < \beta = .2467$) which supports the third and necessary condition for mediation. Thus mediation effect is confirmed. In the same way, when the process was done we saw a decrease in CEO/Chairman duality ($\beta = .04276 < \beta = .2259$).

In M8 the ROA is regressed on board resource provision role (board size) while accounting for the mediation effect. The results show that most of the variables are significant except for the firm age which is marginally insignificant and positive ($\beta = .1855, p > .05$). The value of fit statistics is $R^2 = .8393$ for this model which elaborates that almost 83.9% of the variance in the model is accounted for these variables. The value of board size which is a mediating variable representing board resource provision role is statistically significant and positive ($\beta = .0175, p < .01$) which supports the third and necessary condition for mediation. Thus mediation effect is confirmed. These results give support to the acceptance of the hypotheses H₈, that *the relationship between CEO/Chairman duality and firm performance (ROA) is mediated by board control role (frequency of board meetings) and board resource dependence role (board size).*

V. Concluding Remarks

An in-depth literature review exploring the research on boards suggested that there is limited understanding of the research on board roles explaining board structure and firm performance. The aim of this study was therefore to investigate this relationship in order to add to knowledge and to explore the mediating role of board role which may help to add value to a company through strengthening board roles. From the literature review, a model and hypotheses were developed to examine the relationships between board structural characteristics, board roles, and firm performance.

To be able to test the accuracy of the model, different panel data analysis were conducted. Employing this model, the concepts of board roles mediation in board structural and firm performance relationship by using multiple theoretical foundations in the framework of corporate governance reforms by using the panel data was believed to be innovative contributions to the existing board and corporate governance literature.

The research tested the model developed via panel data approach. The panel dataset was examined to justify the presence of panel specification effects using Hausman test. The results revealed that the panel data had fixed effects. Consequently, the process of hypotheses testing was conducted using fixed effect regression analysis. The hypotheses relating to the mediating impact of the board control role and board resource dependence role were tested using the method proposed by Baron and Kenny (1986), similar to the approach of De Jong and Elfring (2010). Most of the hypotheses were accepted for the study.

Unlike for Frequency of board meetings, the results suggest that board structural characteristics are significant predictors of firm performance and that the monitoring and resource dependence roles partially mediate the relationship between board structural characteristics and firm performance. The results confirm recent empirical findings of the importance of board roles as intermediary mechanisms in explaining firm performance (Aguilera and Cuervo-Cazzura, 2009; Brick and Chidambaran, 2010; Van Ees et al., 2009). Furthermore, the results also revealed that board structural characteristics and firm performance relationship was significant and stronger with return on equity as compared to return on asset.

VI. ACKNOWLEDGMENT

This paper is supported by National Natural Science Foundation of China. Number 71371087

VII. REFERENCES

- [1]. Adams, Renee B. Asking Directors about their Dual Roles [R]. University of Queensland and ECGI (2009), SSRN: <http://ssrn.com/abstract=1362339>
- [2]. Aguilera, R. V. and Cuervo-Cazurra, A. (2009). 'Codes of Good Governance', *Corporate Governance: An International Review*, Vol. 17, No. 3, Pp.376-387.
- [3]. Aguilera, R.V. (2005) Corporate governance and director accountability: an institutional perspective, *British Journal of Management*, S39-S53
- [4]. Baranchuk, N. and Dybvig, P. Consensus in Diverse Corporate Boards [J]. *The Review of Financial Studies*, 2009, 22(2): 715-747
- [5]. Baron, Reuben M. and David A. Kenny (1986), "The Moderator-Mediator Variable Distinction in Social Psychological
- [6]. Beasley, M., J. Carcello, D. Hermanson and P. D. Lapedes. Fraudulent financial reporting: Consideration of industry traits and corporate governance mechanisms [J]. *Accounting Horizons*, (2000): 441-454
- [7]. Boone, A. L., Field, L. C., Karpoff, J. M. and Raheja, C. G. The determinants of corporate board size and composition: An empirical analysis [J]. *Journal of Financial Economics*, 2007, 85: 65-101
- [8]. Brick, I., Chidambaran, N. K. (2010). Board meetings, committee structure, and firm value, *Journal of Corporate Finance*, 16: 533-553.
- [9]. Brick, I.E. and Chidambaran, N.K. Board Meetings, Committee Structure, and Firm Performance [J]. Available at SSRN: <http://dx.doi.org/10.2139/ssrn.1108241>, (2007)
- [10]. Carcello, J., D. R. Hermanson, T.L. Neal and R. Riley, Jr. Board characteristics and audit fees [J]. *Contemporary Accounting Research* (Fall): 2002. 365-384
- [11]. Carpenter, M.A. and Westphal, J.D. The strategic context of external network ties: examining the impact of director appointments on board involvement in strategic decision making [J]. *Academy of Management Journal*, 2001, 4 (4): 639-66
- [12]. Chhaochharia, V. and Grinstein, Y. Corporate Governance and Firm Value: The Impact of the 2002 Governance Rules [J]. *Journal of Finance*, 2007, 62(4):1789-1825
- [13]. Coles, J., McWilliams, V., and Sen, N. An examination of the relationship of governance mechanisms to performance [J]. *Journal of Management*, 2001, 27: 23-50

- [14]. Dahya, J. and McConnell, J. J. (2005). 'Outside Directors and Corporate Board Decisions', *Journal of Corporate Finance*, Vol. 11, Pp.37-60.
- [15]. Daily, C., Dalton, D. R. and Cannella, A. A. (2003). 'Corporate Governance: The Impact of Board Composition and Structure, *Academy of Management Journal*, Vol. 28, Pp.371-382.
- [16]. Dalton, D., Daily, C. and Ellstrand, A. Number of directors and financial performance: A meta analysis [J]. *Academy of Management Journal*, 1999, 42(6), 674-686. Davis
- [17]. Dehaene A, De Vuyst V, Ooghe H (2001) Corporate performance and board structure in Belgian companies, *Long Range Planning*, 34(3):383-398
- [18]. De Jong, B. A., and Elfring, T. (2010). How Does Trust Affect the Performance of Ongoing Teams? The Mediating Role of Reflexivity, Monitoring and Effort. *Academy of Management Journal*, 53(3), 535-549.
- [19]. Fama, E. F. Agency Problems and the Theory of the Firm [J]. *Journal of Political Economy*, 1980, 88(2):288-307
- [20]. Farinha, J. (2003). Corporate governance: A survey of the literature, *Universidade do Porto Economia*, Discussion Paper no. 2003-06 Retrieved from SSRN <http://ssrn.com/abstract=470801> or <http://dx.doi.org/10.2139/ssrn.470801>
- [21]. Finkelstein, S. and Mooney, A.C. Not the usual suspects: how to use the board process to make boards better[J]. *Academy of Management Executive*, 2003, 17 (2): 489-505
- [22]. Forbes, D., & Milliken, F. Cognition and corporate governance: Understanding boards of directors as strategic decision-making groups [J]. *Academy of Management Review*, (1999), 24: 489-505. DOI:10.5465/AMR.1999.2202133
- [23]. Fuzi, S. F S, Rahim, M. and Tan, A (2012). Factors influencing Performance of Independent Directors in Malaysia, 2012 IEEE Symposium on Humanities, Sciences and Engineering Research
- [24]. Gompers, P., Ishii, J., and Metrick, A. (2003) Corporate governance and equity prices, *Quarterly Journal of Economics*, 118 (1), 107-155.
- [25]. Gordon, J. N. The rise of independent directors in the United States, 1950-2005: Of shareholder value and stock market prices [J]. *Stanford Law Review*, 2007, 59: 1465-156
- [26]. Hassan, M. The Impact of Corporate Governance on Board Structure and Board Roles: An Empirical Study of Pakistani Listed Firms [Book]. Unpublished PhD Thesis. Newcastle University, UK (2014)
- [27]. Haniffa, R. and Hudaib, M. Corporate Governance Structure and Performance of Malaysian Listed Companies [J]. *Journal of Business, Finance and Accounting*, 2006, 33(7 and 8):1034-1062
- [28]. Haniffa RM, Cooke TE (2005) The impact of culture and governance on corporate social reporting, *Journal of Accounting and Public policy*, 24:391-430
- [29]. Haniffa, R. M. and Cooke, T. E. Culture, Corporate Governance and Disclosure in Malaysian Corporations [J]. *Abacus*, 2002, 38(3):317-349
- [30]. Hermalin, B.E. and Weisbach, M.S. (2003) Boards of directors as an endogenously determined institution: a survey of the economic literature, *Economic Policy Review*, 9 (1), 7- 26
- [31]. Hillman, A.J., Cannella, Jr., AR., and Paetzold, R.L. (2000) The resource dependence role of corporate directors: Strategic adaptation of board composition in response to environmental change, *Journal of Management Studies*, 37 (2), 235-255
- [32]. Hillman, A. J., & Dalziel, T. Boards of directors and firm performance: Integrating agency and resource dependence perspectives [J]. *Academy of Management Review*, 2003. 28(3): 383-396

- [33]. Huse, M. Boards, governance, and value creation [M]. Cambridge: Cambridge University Press, 2007
- [34]. Jackling, B., & Juhl, S. Board structure and firm performance: evidence from India's top companies. *Corporate Governance [J]: An International Review*, 2009, 17(4), 492-509. DOI: 10.1111/j.1467-8683.2009.00760
- [35]. Kelton, A. and Yang, Y. The impact of corporate governance on internet financial reporting [J]. *Journal of Accounting and Public Policy*, 2008, 27: 62-87
- [36]. Kiel, G. C. and Nicholson, G. J. (2003). 'Board Composition and Corporate Performance: How the Austrian Experience Informs Contrasting Theories of Corporate Governance' *Corporate Governance: An International Review*, Vol. 11, No. 3, Pp.189-205.
- [37]. Klein, A. Likely effects of stock exchange governance proposals and Sarbanes- Oxley on corporate boards and financial reporting [J]. *Accounting Horizons*, 2003,17 (4): 343-355
- [38]. Krause, R., M. Semadeni and A. A. Cannella (2014). 'CEO duality: a review and research agenda', *Journal of Management*, 40, pp. 256–286
- [39]. Kouki, M. and M. Guizani (2015). 'Outside directors and firm performance: the moderating effects of ownership and board leadership structure', *International Business Research*, 8, pp. 104–116
- [40]. Linck, J.M. Netter, T. Yang. The determinants of board structure [J]. *Journal of Financial Economics*, 2008, 87: 308–328
- [41]. Lipton, M. and Lorsch, J. W. A modest proposal for improved corporate governance [J]
- [42]. Mangena, M. and Tauranga, V. (2006). 'Corporate Boards, Ownership Structure and Firm Performance in an Environment of Economic and Political Instability: The Case of Zimbabwe Stock Exchange Listed Companies', Working Paper, School of Management, Bradford University, UK.
- [43]. McNulty, T. and Zattoni, A., and Douglas, T. Developing Corporate Governance Research Through Qualitative Methods: A Review of Previous Studies [J]. *Corporate Governance: An International Review*, 2013, 21(2):183-198
- [44]. Nicholson, G.J. and Kiel, G.C. Can directors impact performance? A case based test of three theories of corporate governance, *Corporate Governance [J]. An International Review*, 2007, 15(4): 585-608
- [45]. Ntim, Collins G. and Osei, Kofi A. (2011) 'The Impact of Corporate Board Meetings on Corporate Performance in South Africa' *African Review of Economics and Finance*, Vol. 2, No. 2, pp.83-103.
- [46]. Payne, G.T., Benson, G.S., and Finegold, D.L. (2009) Corporate board attributes, team effectiveness and financial performance, *Journal of Management Studies*, 46 (4), 704-731
- [47]. Research: Conceptual, Strategic and Statistical Considerations," *Journal of Personality and Social Psychology*, 51 (6), 1173–82.
- [48]. Roberts, J., McNulty, T., and Stiles, P. (2005) Beyond agency conceptions of the work of the nonexecutive director: creating accountability in the boardroom, *British Journal of Management*, 16, S5-S26
- [49]. Ruigrok, W., Peck, S.I., and Keller, H. Board characteristics and involvement in strategic decision making: Evidence from Swiss companies [J]. *Journal of Management Studies*, 2006, 43(5), 1201-1226
- [50]. Shleifer, A., & Vishny, R. A Survey of Corporate Governance [J]. *Journal of Finance*, 1997, 52 (2):737–783.
- [51]. Sonnenfeld, J. A. What Makes Great Boards Great [J]. *Harvard Business Review*, 2002, 80(9), 106-113
- [52]. Useem, M. And Zelleke, A. Oversight and Delegation in Corporate Governance: Deciding What the Board Should Decide [J]. *Corporate Governance*, 2006, 14(1): 2-12

- [53]. Van Ees, H., Gabrielsson, J., and Huse, M. (2009). Toward a Behavioral Theory of Boards and Corporate Governance. *Corporate Governance-an International Review*, 17(3): 307-319.
- [54]. Van Ness, R., Miesing, P., & Kang, J. Board of director composition and financial performance in a Sarbanes-Oxley world. *Academy of Business and Economics Journal*, 2010, 10: 56–74
- [55]. Wan, D. & Ong, C.H. Board structure, process and performance: evidence from public-listed companies in Singapore [J]. *Corporate Governance: An International Review*, 2005, 13(2): 277-290
- [56]. Weisbach, M. S. Outside Directors and CEO Turnover [J]. *Journal of Financial Economics*, 1988, 20:431-460
- [57]. Yermack, D. Higher market valuation of companies with a small board of directors [J]. *Journal of Financial Economics*, 1996, 40(2), 185–211. DOI:10.1016/0304-405X(95)00844-5
- [58]. Zahra, S.A. and Pearce J.A. Boards of directors and corporate financial performance: A review and integrative model [J]. *Journal of Management*, 1989, 15(2): 291-334
- [59]. Zinkin, J (25 June, 2010), Independent directors must learn to ask CEOs the right questions
Zubaidah ZA, Nurmala MK, Kamaruzaman, J (2009) Board structure and corporate performance in Malaysia, *International Journal of Economics and Finance*, 1(1):150-164

Cite this article as :

Jonas Bawuah, Kong Yusheng, Agyeiwaa Owusu Nkwantabisa, "Corporate Governance and Firm Performance : The Mediation Effect of Board Roles, Panel Evidence from Sub-Saharan Africa", *International Journal of Scientific Research in Science, Engineering and Technology (IJSRSET)*, Online ISSN : 2394-4099, Print ISSN : 2395-1990, Volume 7 Issue 2, pp. 153-157, March-April 2020. Available at doi : <https://doi.org/10.32628/IJSRSET207238>
Journal URL : <http://ijsrset.com/IJSRSET207238>