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THE EFFECTS OF BOARD STRUCTURE ON THE FIRM FINANCIAL PERFORMANCE OF TANZANIAN LISTED FIRMS

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ABSTRACT

This paper examines the effects of the board structure variables of board size, outside directors and CEO duality on firm financial performance of the listed firms in Tanzania. This study uses a sample of listed Tanzanian firms from 2006 to 2018 and uses balanced panel data Ordinary Least Square (OLS) regression analysis of 120 firms-year observations obtained from the firms' audited annual reports and the OSIRIS database. Furthermore, in order to address the endogeneity problem, this study uses the Random effect regression model and the Two Stage Least Square (2SLS) regression model as a robustness test. The results show that the smaller the board size with a higher proportion of outside directors and no CEO duality, the greater the firm's financial performance. This study contributes to the understanding of the relationship between board structure and financial performance and it provides academic evidence to Tanzanian policy makers of current and future Corporate Governance reforms. First, dissimilar to most previous Corporate Governance literature that relates to developed countries, this study examines the effects of the board structure variables of board size, outside directors and CEO duality in Tanzania which is a developing country where very few Corporate Governance research studies have been conducted. It addresses the endogeneity problems between board structure and firm financial performance using Random effect regression and Two Stage Least Square (2SLS) regression models.

Keywords: *Board of Directors; Board structure; Firm Performance*

INTRODUCTION

Background Information

Corporate Governance ensures the firm's success and the protection of investors' interests through minimising risk and strengthening the controls through effective monitoring of the firm's managers (Shleifer & Vishny, 1997). It can play a key role in enhancing the economic development of developing economies (Munisi & Randoy, 2013). Tanzania is striving to achieve its goal of becoming an industrialised country by 2025. Therefore, it is argued that good Corporate Governance is one of the essential tools in steering Tanzania towards industrialisation and economic development.

As the engine of Corporate Governance mechanisms, the firm's board of directors is obliged to strengthen Corporate Governance and to enhance the firm's performance through monitoring and controlling the firm's managers, providing resources and making strategic decisions (Zahra & Pearce, 1989). In order to ensure their interests are protected, the firm's shareholders and other stakeholders entrust the board of directors to monitor and control the firm's managers. In some cases, due to their opportunist and self-interest behaviors, the firm's managers may not act completely in the owners' interests through maximizing returns on investments (Shleifer and Vishny, 1997).

Consequently, there is a need for the board of directors to conduct effective monitoring and control of the firm's managers. In addition, by failing to discharge its responsibilities effectively, the firm's stakeholders may blame the board of directors for the failure to formulate effective strategies to enable the monitoring and control of the firm's managers. In the early 2000's, firms, such as Parmalat, Enron and Enron were involved in Corporate Governance failure scandals (Tricker, 2012).

There have been international and national efforts to strengthening Corporate Governance. Consequently, many Corporate Governance Codes, such as Serbanese-Oxly in the USA, the King Report in South Africa, the Cadbury report and Combined Code in the UK, Organisation for Economic Corporation and Developments (OECD) (Tricker, 2012),

and Capital Markets and Security Authority's (CMSA) and Tanzania's Corporate Governance Guidelines, have been developed. Most of these Corporate Governance Codes emphasize the need for firms to have large proportions of independent nonexecutive directors, optimal board size and the separate roles of CEO and board chairperson in order to enhance their boards of directors' efficiency and effectiveness (Tricker, 2015).

Previous Corporate Governance research studies produced mixed findings concerning the impact of board structure on firm financial performance. Jackling and Johl's (2009), Muttakin et al.'s (2012) and Bhagat and Bolton's (2013) findings show a positive relationship between board composition and firm financial performance. However, Bhagat & Black's (2002) and Ahmed & Gabor's (2011) findings show a negative relationship between board composition and firm financial performance. Ferrer and Bandelipe's (2012), Costa's (2015) and Assenga et al.'s (2018) findings do not show any significant relationship between board composition and firm financial performance.

This study investigated the impact of aspects of board structure such as outside directors, CEO duality and board size on the firm's financial performance. There is limited number of Tanzanian Corporate Governance studies (Fulgence, 2014; Assenga et al., 2018). Therefore, this paper is expected to add to Tanzania's limited literature on Corporate Governance. It is argued that the aspects of outside directors, CEO duality and board size are very important if the firms' boards of directors are to carry out their monitoring role and advisory functions effectively and that, in the Tanzanian context, Corporate Governance needs to be strengthened. The different studies' mixed findings indicate that some of the findings from studies of developed countries' economies may not be applicable to developing countries like Tanzania. This is due to the cultural, social, legal, economic and political differences (Jackling and Johl, 2009). This study presents an opportunity to provide insights on specific Tanzanian factors which may influence the effectiveness of Corporate Governance.

The paper is structured as follows. The second section reviews the literature on the influence of board structure (outside directors, board size, and CEO duality), and its relationship with firm performance. Also, it develops the hypotheses used in this study. The third section describes the methodology used in this study. Section four presents and discusses this study's findings. Finally, section five sets out this study's conclusions.

LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESES

Two theories of agency and resources dependence were used in reviewing the literature and developing research hypotheses since one single theory is not enough to explain the relationship between board aspects of governance and firm performance (Assenga et al., 2018 and Shao 2019).

Agency theory advocates the monitoring of the firm's management to control their opportunistic behaviors and self-interests (Hillman and Dalziel, 2003; Adams et al., 2010). Agency theorists argue that separation of ownership and control creates information asymmetry and opportunistic behaviors and, hence, agency problems between shareholders and managers (Jensen and Meckling, 1976; Fama and Jensen, 1983). Hooghiemstra et al. (2019) contend that efficient monitoring of the board of directors can reduce agency problems by controlling the CEO's and the top managers' opportunistic and self-interest behaviors.

In addition, resources dependence theory is premised on the importance of the board of directors in bringing key resources to the firm. Resources dependence theory originates from the work of Pfeffer and Salancik (1978). They argue that a board of directors provides the firm with external resources such as advice and counsel, legitimacy and networking from the external environment (Pfeffer and Salancik, 1978). A board of directors enhances the firm's financial performance by providing human related resources (experience, expertise, knowledge and skills) and social related resources (Hillman and Dalziel, 2003; Nicholson and Kiel, 2007).

The application of both agency and resource dependence theories indicates the key functions of board of directors in monitoring of management to protect the interests of shareholders (agency theory) and linking the company to external resources (resource dependence theory) (Adams et al., 2010). The review of literature and hypotheses development in this section of the paper is within the context of agency and resources dependence theories. Agency theory is used to investigate outside directors and CEO duality with regards to impact on financial performance while resource theory is used to examine the relationship between board size and firm financial performance.

Outside Directors and Firm Financial Performance

Agency theory suggests a large number of outside directors ever since, in protecting the shareholders' interests, they perform a crucial role in monitoring the firm's management decisions and activities (Shleifer and Vishny, 1997; Adams

et al., 2010). In ensuring that the board of directors has an effective monitoring role, outside directors have the powers to hire, dismiss and assess the firm's CEO and top management (Adams et al., 2010). In contrast, Harris and Raviv (2006) argue that, having a large number of outside directors, can lead to the firm losing important information which can be more costly than the agency cost caused by a large number of inside directors. In line with the agency theory, resource dependence theory proposes a large number of outside directors to provide connection between the company and external resources such as intellectual and human resources (Zahra & Pearce, 1989).

Empirically, there are mixed empirical findings regarding the outside directors' impact on firm performance. Using a sample of 10,151 firm-year observations of Taiwanese listed firms from 1997 to 2015, Kao et al.'s (2019) findings show a significant and positive relationship between outside directors and firm performance. Also, Bhatt and Bhatt's (2017), Puni and Anlesinya's (2020) and Prashar and Gupta's (2020) findings show a positive relationship between outside directors and firm performance. In contrast, using a sample of 20 listed companies on the Ghana Stock Exchange across a five-year period from 2008 to 2012, Darko et al.'s (2016) findings show a negative relationship between outside directors and firm performance. In addition, Mangena et al.'s (2012) and Garba et al.'s (2014) findings show a negative link between outside directors and firm performance. The findings of other studies, such as Afrifa and Tauringana (2015) and Assenga et al. (2018) show that outside directors do not have significant impact on firm performance.

Corporate Governance guidance requires the board of directors to have higher percentage of outside directors (Cadbury, 1992; King report, 1999; OECD 2004, King report 2016). Furthermore, agency theory suggests that a larger number of outside directors enhances the board of directors' independence and its effective monitoring and control of the firm's CEO and top management and, hence, improves firm performance (Fama and Jensen, 1983; Shleifer and Vishny, 1997). Accordingly, this study's first hypothesis is as follows:
H1: There is a positive relationship between outside directors and firm financial performance.

Board Size and Financial Performance
Agency theorists argue that, relative to the firm's size, it is essential to have a large sized board of directors if the board of directors is to monitor the firm's management effectively and to minimize agency problems (Kiel and Nicholson, 2003). From the resource dependence theory perspective, a large board of directors enhances the flow of human and financial resources from the external environment to the firm and, hence, improves firm performance (Zahra & Pearce, 1989; Kiel and Nicholson, 2003). However, Yermack (1996) contends that small boards of directors are more efficient in the performance of the advisory and council tasks. Harris and Raviv (2006) contend, also, that, when compared to large boards, small boards add more value due to their effectiveness in making decisions. Merendino and Melvill (2019) argue that optimal board size improves firm's performance.

The research study findings, related to the impact of board size on firm performance, are inconsistent. Using a Colombian sample of 84 large Chinese listed firms from 2001 to 2005, companies Orozco et al.'s (2018) findings show that there is a positive relationship between board size and firm performance. Also, Kiel and Nicholson's (2003), Puni and Anlesinya's (2020) and Prashar and Gupta's (2020) studies show similar findings. On the other hand, using data from 452 large American industrial corporations between 1984 and 1991, Yermack's (1996) findings show a negative relationship between board size and firm financial performance. In addition, Guest's (2009) and Kao et al.'s (2019) findings show a negative link between board size and firm performance. However, Assenga et al.'s (2018) and Shao's (2019) findings did not show any significant relationship between board size and firm size.

Resource dependence theorists argue that a large board of directors brings external resources, such as experience, reputation, expertise knowledge and skills, which are essential in providing effective advice and counsel regarding the firm's strategic issues (Carpenter and Westphal, 2001). However, Corporate Governance best practices recommend the optimal sized board of directors so that the firm's effectiveness and efficiency are improved (Cadbury, 1992; CMSA guidelines, 2002). Therefore, this study's second hypothesis is as follows:
H2: There is a positive relationship between board size and firm financial performance.

CEO Duality and Financial Performance
It is more preferable to separate the roles of the CEO and the chairperson rather than combine them (CEO duality). Agency theory recommends the separation of the CEO and chairperson roles in order to improve the board of directors' monitoring of the decisions and activities of the CEO and the firm's top management (Fama and Jensen, 1983;

Donaldson & Davis, 1991). CEO duality impairs board independence and its monitoring function; enhances CEO entrenchment; and increases the risk of the CEO dominating the board of directors (Donaldson & Davis, 1991).
The empirical evidence on the effect of CEO duality on firm performance has yielded mixed results. Having investigated 321 American corporations in the period from 1985 to 1987, Donaldson and Davis's (1991) findings show that CEO duality has a positive impact on ROE. Also, Prashar and Gupta's (2020) studies shows similar findings. On the other hand, using a sample of 22,700 firm-year observations of Chinese listed firms between 2001 and 2005, Shao's (2019) findings show a negative relationship between CEO duality and firm financial performance. In addition, Jermias and Gani's (2014), Assenga et al.'s (2018) and Kao et al.'s (2019) findings show that CEO duality has negative impact on firm financial performance. However, Merendino and Melvill's (2019) findings show an insignificant relationship between CEO duality and firm performance.

The combination of CEO and chairperson roles can have a negative effect on firm performance since it enhances agency problems by impairing the board of directors' efficient monitoring and control of the firm's CEO and top management (Fama and Jensen, 1983). Moreover, the Corporate Governance standards recommend that the roles of the CEO and chairperson of the board be separated (Cadbury 1992; CMSA guidelines 2002; OECD, 2004). Accordingly, this study's third hypothesis is as follows:
H3: There is a negative association between CEO duality and firm financial performance.

METHODOLOGY
In order to test the hypotheses, this study used data collected from the OSIRIS data base as at 31 December 2019 and from each of the audited annual reports of the 23 companies listed on Dar es Salaam Stock Exchange (DSE), the Tanzanian stock exchange in the period from 2006 to 2015. Consistent with Assenga et al. (2018), the author chose 2006 because the firms, listed on DSE, had fully implemented the requirements of the Tanzanian Company Act 2002, which came into effect in 2006, and the International Financial Reporting Standards (IFRS) which Tanzania introduced officially in 2004. The author chose, also, 2018 since it was the most recent year for which the data had been collected. In line with Assenga at al. (2018) and Merendino and Melvill (2019), the author excluded from this study seven (7) companies from Tanzania's financial service sector because of their operating under a special regulatory environment. In order to enhance balanced panel data, the author removed, also, six (6) companies because of the lack of sufficient information about them information. The use of balanced panel data minimises the risk of the endogeneity issue (Darko et al., 2016). Consequently, this study's final sample consists of total of 120 firm-year observations over the period under investigation.

In line with Darko et al.'s (2016) and Assenga et al.'s (2018) previous studies, this study uses Return on Assets (ROA) and Return on Equity (ROE) as the dependent variables to measure firm financial performance. These variables have been widely used in previous studies because of their convenience in measuring firm performance. Consistent with Kao et al.'s (2019) and Merendino and Melvill's (2019) studies, the study uses three explanatory variables of board outside (BOUTSIDE), board size (BSIZE) and CEO duality (CEOD). The study includes, also, control variables of firm debt (FMDEBT), firm size (FMSIZE) and firm age (FMAGE) to control the effect of other factors which may affect firm performance and bias the OLS results (Kao et al. 2019). These variables have been widely applied in previous studies (Hermalin and Weisbach, 1991; Assenga et al., 2018; Merendino and Melvill, 2019). Table 1 describes the variables.

The author developed the following Ordinary Least Square (OLS) and fixed and random models to examine the impact of outside directors, board size and CEO duality on firm financial performance:

$$Yit = \alpha + \beta 1BSIZEit + \beta 2OUTSIDEit + \beta 3CEODit + B7FDEBTit + \beta 8FMSIZEit + \beta 9FMAGEit + \varepsilon it$$

Where:
Yit is alternatively ROAit and ROEit for ith firm at time t.
α is the intercept, βi is the regression coefficient of the firm and εit is the composite error term.
In using data from the Tanzanian listed firms, this study uses pooled OLS regression to examine the impact of outside directors, board size and CEO duality on their financial performance. However, due to limitations of pooled OLS, the OLS findings may be biased due to the violation of assumptions such as endogeneity, homodestasticity and no serial correlations. In analyzing robustness, consistent with Ujunwa, 2012, the study uses fixed and random regression models to correct heterodestasticity, autocorrelations and omitted variable bias (Gujarati, 2003; Ujunwa, 2012). It is argued that, compared to the pooled OLS model, Fixed effect and Random effect models enhance more robust findings. In addition, since endogeneity can bias OLS results and make them inconsistent, this study uses Two-stage Least Square

(2SLS) regression to address the endogeneity problem (Wintoki et al., 2012). Table 1 below describes the variables used in this study.

Table 1: Data Variables

Variables	Acronyms	Descriptions
Independent Variables		
Foreign Directors	FODIR	The proportion of foreign directors to the total number of directors
Control Variables		
Outside directors	BOUTSIDE	The number of outside non-executive directors as a percentage or a proportion of the total number of directors on the board.
Board size	BSIZE	The number of members who comprise the board of directors at the end of a financial year.
Firm debt	FDEBT	Financial leverage (total debt divided by total equity)
Firm size	FMSIZE	Natural logarithm of total assets
Firm age	FMAGE	Natural logarithm of the number of years which the firm has been listed on the Dar es Salaam Stock Exchange (DSE)
Dependent Variables		
Return on assets	ROA	Net income divided by total assets
Return on equity	ROE	Net Income divided by shareholders' equity.

RESULTS AND DISCUSSION

Descriptive Statistics

Table 2 below shows the descriptive statistics of this study's variables. In respect of performance variables, the results show that the average ROA is 16.45% and the average ROE is 27.24%. Turning to the explanatory variables, the proportion of outside directors is about 82.00%. This indicates that many listed Tanzanian firms comply with the requirements of agency theory and with the standards and best practices of Corporate Governance that promote a large proportion of outside independent directors on firms' boards of directors. The average number of directors on boards is 6.49 which is smaller than mean number of 9.69 in Taiwan (Kao et al., 2019) and 9.00 in Latin America (Orozco et al., 2018). The percentage of the board chairpersons, who do not hold both the position of CEO and Chairperson is about 91.00. This indicates the highest compliance with the requirements of agency theory and Corporate Governance best practices that promote the separation of the CEO and chairperson roles. Turning to the control variables, average firm size is (natural logarithm of total assets book value of total assets) 13.35, the average debt ratio is 1.82 and firm age is 1.93.

Having regard to linear regression assumptions, this study addresses significant linear regression assumptions that include multicolleniarity, normality, linearity, homogeneity and autocorrelation. The results (available upon request) show that the assumptions are reasonably met. Also, this study uses random effect regression to correct any violation of homogeneity and autocorrelations assumptions (Ujunwa, 2012).

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
ROA	120	16.44858	19.26202	-26.28	69.54
ROE	103	27.24058	18.49511	-23.77	58.27
Boutside	120	.8199167	.1593764	.43	1
Bsize	120	6.491667	2.264063	3	11
Ceod	120	.9083333	.2897647	0	1
fmdebt	120	1.820917	9.42643	-31.53	96.41
fmsize	120	13.34517	4.910645	6.96	19.97
fmage	120	1.933833	.7689392	0	3.04

Correlation Results

Table 3 below presents the results of Pearson correlation matrix amongst the variables used in the regression for the full sample over the period from 2006 to 2018. There is a negative and significant correlation between Board size and ROA and there is, also, a negative # insignificant correlation between Board size and ROE. The results indicate that the larger board size is likely to have a negative impact on firm financial performance. In addition, there is a positive and significant correlation between board size and BOUTSIDE. This result validates the theoretical stance of agency theory that the board of directors should have large number of outside directors so that they be effective in overseeing the firm's management. The results show that there are, also, negative correlations between CEO duality and ROA and between CEO duality and ROE. The results show, also, that CEO duality may have an adverse impact on the firm's financial performance. In addition, there are positive correlations between CEO duality and BSIZE and between CEO duality and BOUTSIDE. These results show that board size and outside directors have positive influences on CEO duality.

There is a negative and significant correlation between Firm size and the proxies of BOUTSIDE and CEOD #. The results are consistent with Ujunwa's (2012) argument that governance structures are interchangeable and that the selection of appropriate Corporate Governance options depends on the firm's decisions. There is a negative and significant correlation between Firm age and ROA and between Firm age and ROE. The results indicate that newer firms are expected to have higher earnings than older ones since they have lower cost structure caused by wear and tear. The significant negative relationship justifies the inclusion of FMAGE and FMSIZE as one of the control variables.

Table 3: Correlation results

		1	2	3	4	5	6	7	8
1	ROA	1.0000							
2	ROE	0.8530*** 0.0000	1.0000						
3	boutside	-0.0261 0.7770	-0.0880 0.3768	1.0000					
4	bsize	-0.2502*** 0.0059	-0.0609 0.5413	0.4449*** 0.0000	1.0000				
5	ceod	-0.2311** 0.0111	0.3083*** 0.0015	0.7149*** 0.0000	-0.4664*** 0.0000	1.0000			
6	fmdebt	-0.1491 0.1042	-0.1718 0.0828	0.0740 0.4217	-0.0184 0.8419	0.0466 0.6130	1.0000		
7	fmsize	-0.0832 0.3665	0.0373 0.7084	-0.4295*** 0.0000	0.0056 0.9518	-0.3627*** 0.0000	-0.0082 0.9296	1.0000	
8	fmage	-0.2531*** 0.0053	-0.2138* 0.0301	0.0681 0.4598	0.0573 0.5344	-0.1300 0.1569	0.0326 0.7237	0.1717 0.0608	1.0000

*** Significant at the 1% level (2-tailed). ** Significant at the 5% level (2-tailed)

Findings and discussion

Table 4 below shows that the coefficient of outside directors has a positive and significant relationship with ROA and ROE, H1 is supported. This result suggests that outside directors enhance firm's financial performance by effective and efficient monitoring and by advising the firm's CEO and top management. This result is consistent with the findings of Bhagat and Bolton (2013), Bhatt and Bhatt (2017), Kao et al. (2019), Puni and Anlesinya (2020) and Prashar and Gupta's (2020). Also, the results provide empirical evidence in support of agency theory which promotes there being a large number of outside directors to enhance effective monitoring of the owners' resources (Farma and Jensen, 1983).

Board size was found to be significantly negative related to firm financial performance. In contrast, as indicated in Tables 4 and 5. The results show that there is a negative and significant relationship between board size and ROA and that there is a negative but insignificant relationship between board size and ROE. The results suggest that, when compared to large boards of directors, small boards of directors are likely to improve firm financial performance. Yermack (1996) and Harris and Raviv (2006) argue that small boards of directors are more efficient in the discharge of the advisory and council tasks. The results are consistent with the findings of Yermack (1996), Harris and Raviv

(2006) and Orozco et al. (2018), supporting H2. However, they are contrary to the resource dependence theory which favors large boards of directors since they are likely to bring important resources from the external environment (Kiel and Nicholson, 2003).
Negative significant relationship was found between CEO duality and firm financial performance. The results support the hypothesis H3 and show that there is a negative relationship between CEO duality and firm financial performance. These results are consistent, also, with the findings of Assenga et al. (2018), Kao et al. (2019) and Shao (2019). The results support agency theory argument that the roles of the CEO and board chairperson should be separated in order to improve the effectiveness of board members in monitoring the CEO and the top management's actions and decisions (Donaldson & Davis, 1991).

Turning to the control variable, the results show that there are negative relationships between firm debt and ROA and between firm age and ROA. There is, also, a negative relationship between firm age and firm financial performance.

Table 4: OLS Regression Results

Independent Variables	ROA			ROE		
	Coef.	t	P>|t|	Coef.	t	P>|t|
boutside	53.86165	3.47	0.001***	39.72425	2.38	0.019**
bsize	-1.702739	-2.06	0.041**	.7706839	0.90	0.369
ceod	-33.0939	-4.00	0.000***	-37.08703	-4.25	0.000***
fmdebt	-.3104362	-1.87	0.064**	-1.578354	-1.35	0.180
fmsize	-.0625789	-0.17	0.867	.2766446	0.67	0.504
fmage	-8.242197	-3.83	0.000***	-8.409851	-3.85	0.000***
R2	0.2607			0.2599		
Adjusted R2	0.2215			0.2137		
F-statistics	6.64***			5.62***		
No of Observation	120			103		

*** Significant at the 1% level (2-tailed). ** Significant at the 5% level (2-tailed)
Source: Author's computation based on stata analytical software result

Robustness Tests
The OLS regression findings may suffer from the effect of violation of the OLS assumptions, such as homodestasticity, and no serial correlations and endogeneity. Endogeneity is caused mainly by omitted variable and simultaneity (Larcker and Rusticus, 2010). Board structure is likely to be determined endogeneously (Hermalin and Weisbach, 2001; Ntim, 2015). Endogeneity can bias OLS results bias and make them inconsistent (Wintoki et al., 2012). Consistent with Ujunwa, 2012, this study uses fixed and random models to correct heterodestasticity, autocorrelations and omitted variable bias (Gujarati, 2003; Ujunwa, 2012). When compared to the pooled OLS model, Fixed effect and Random effect models are argued to enhance more robust findings. In addition, since this is a convenient method of addressing the endogeneity problem, this study uses IV method with a single equation Two-stage Least Square (2SLS) regression (Ntim, 2015). However, due to the difficulties and complexity of finding appropriate instruments), 2SLS may not produce better estimates than OLS (Larcker and Rusticus, 2010.

Table 5: 2SLS Regression Results

Independent Variables	ROA			ROE		
	Coef.	z	P>|z|	Coef.	z	P>|z|
ROA lag1/ROE lag1	.441465	1.27	0.205	.2790278	1.43	0.152
boutside	34.40372	1.69	0.092	56.39711	3.63	0.000***

bsize	-.9171705	-1.09	0.274	.7944633	1.10	0.270
ceod	-21.95929	-1.79	0.073	-41.66551	-5.62	0.000***
fmdebt	-21.95929	-1.53	0.126	1.001033	0.54	0.590
fmsize	.0342105	0.13	0.893	.4744204	1.36	0.173
fmage	-6.044523	-1.66	0.097	-8.579119	-3.54	0.000***
Centered R2	0.6796			0.5175		
Uncentered R2	0.8092			0.8421		
F-statistics	12.56***			7.26***		
Sargan statistics	6.531 (0.6858)			6.220 (07177)		
No of Observation	110			93		

*** Significant at the 1% level (2-tailed). ** Significant at the 5% level (2-tailed)

Based on the available data, this study used year dummies and lagged value of performance (ROA or ROE) as instrument variables. These may not be correlated with error term but are correlated with endogeneous regressors (explanatory and control variables). The conducted sargan test shows that the instruments are reasonably good since they are not correlated with error term.

Table 5 above indicates 2SLS regression results. Based on the results obtained from the model, there is a negative and insignificant relationship between board size and ROA and between board size and ROE. These results are not consistent with the OLS findings and theories of agency and resources dependence. However, the findings are consistent with Shao's (2019) findings. These findings suggest that the issue of boards size is inconclusive in developing countries may not enhance effective monitoring of firm's management and bring external resources to the firm. There is a positive and significant relationship between the coefficient of outside directors and ROE. However, there is a positive but weakly significant relationship between outside directors and ROA. These results are consistent with OLS findings and theories of agency and resources dependence theories, which implies that large number of outside directors enhance effective monitoring of management and enhance network with external resources. Also, these findings are consistent with the findings of Bhatt and Bhatt's (2017), Puni and Anlesinya's (2020) and Prashar and Gupta's (2020. Also, there is a negative and significant relationship between the coefficient of CEO duality and ROE. However, there is but a negative and weakly significant relationship between the coefficient of CEO duality and ROA. These results are consistent with the OLS findings and the findings of Assenga et al.'s (2018) and Kao et al.'s (2019). These results support the agency theory and suggest that separation of duties of chairperson and CEO enhance independence of the board in Consistent with the OLS findings, there is a negative and significant relationship between firm age and ROE. However, there is a negative and weakly significant relationship between firm age and ROA.

Table 6: Fixed Effects Regression Results

Independent Variables	ROA			ROE		
	Coef.	t	P>|t|	Coef.	t	P>|t|
boutside	-15.17988	-0.87	0.386	46.68322	1.91	0.060
bsize	-.3322587	-0.19	0.848	-2.259298	-0.94	0.349
ceod	-8.705877	-0.90	0.368	-21.45935	-1.71	0.090
fmdebt	-.1095428	-1.22	0.225	-.5928406	-0.55	0.586
fmsize	-1.016995	-0.38	0.703	-7.916984	-2.23	0.029
fmage	-3.356728	-1.75	0.082	-1.237968	-0.45	0.652
R2	0.1580			0.1970		
Adjusted R2						
F-statistics	3.25***			3.56***		
No of Observation	120			103		

*** Significant at the 1% level (2-tailed). ** Significant at the 5% level (2-tailed)

Tables 6, 7, 8 and 9 show the results of the Fixed-Effects Regression, Hausman Fixed and Random-Effects, Random Effects Regression and Hausman Fixed and Random (ROE) models. This study used Hausman test to find out the most appropriate model between the RE model or FE model for further analysis. Table 7 indicates that the results in Hausman test show the result is greater than 0.05 (5% significance level). Hence, accept the null hypothesis. This indicates that the data set is more consistent when tested with random-effects models. Furthermore, the error term is assumed not correlated with the independent variables. Therefore, the study applies random-effects model to test the data set.

Table 7: Hausman Fixed and Random results (ROA)

	Coefficient		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E
	(b) fe	(B) re		
boutside	-15.17988	-9.037013	-6.142863	7.722066
bsize	-.3322587	-.8780268	.5457682	.9290683
ceod	-8.705877	-10.32669	1.620811	4.114722
fmdebt	-.1095428	-.1145709	.0050281	.0110448
fmsize	-1.016995	-.5905961	-.4263986	2.413185
fmage	-3.356728	-3.645675	.2889466	1.231244
Notes: chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 1.90 Prob>chi2 = 0.9287				

Based on the results obtained from the random effects model as indicated in Table 8, there is a negative and insignificant relationship between the coefficient of board size and ROE but a negative and insignificant relationship between the coefficient of board size and ROA. The results are in line with OLS results (the direction of both was negative) and inconsistent with the findings of Yermack (1996), Harris and Raviv (2006) and Orozco et al. (2018). These results do not support the argument that small boards improve the performance of the firm due to their effectiveness in making decisions (Merendino and Melvill, 2019). However, these results are consistent with Assenga et al.'s (2018) and Shao's (2019).

Also, there is a positive and significant relationship between outside directors and ROE but an insignificant relationship between outside directors and ROA. These findings support agency theory and OLS findings. These results suggest that a large number of outside directors perform a crucial role in monitoring the firm's management decisions and activities.

Table 8: Random Effects Regression Results

Independent Variables	ROA			ROE		
	Coef.	z	P>|z|	Coef.	z	P>|z|
boutside	-9.037013	-0.58	0.563	42.02988	2.00	0.045**
bsize	-.8780268	-0.60	0.546	-2.154949	-1.17	0.244
ceod	-10.32669	-1.19	0.235	-24.34742	-2.21	0.027**
fmdebt	-.1145709	-1.29	0.199	-.7650804	-0.71	0.477
fmsize	-.5905961	-0.53	0.596	-.3730515	-0.31	0.759
fmage	-3.645675	-2.49	0.013**	-5.583722	-2.68	0.007***
R2	0.1569					
Adjusted R2						
Wald Chi2	20.76***					
No of Observation	120			103		

*** Significant at the 1% level (2-tailed). ** Significant at the 5% level (2-tailed)

In addition, there is a negative and significant relationship between CEO duality and ROE and a negative but insignificant relationship between CEO duality and ROA. These findings are in line with OLS findings and the findings of Assenga et al. (2018), Kao et al. (2019) and Shao (2019). These findings support the agency theory proposition of separating the duties of CEO and Board Chairperson to improve firm performance. There is a negative and significant relationship between Firm age and ROE and a negative but insignificant relationship between Firm age and ROA. These results accord with the OLS findings.

Table 9: Hausman Fixed and Random results (ROE)

	Coefficient		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E
	(b) Fe	(B) re		
boutside	46.68322	42.02988	4.653335	12.59285
bsize	-2.259298	-2.154949	-.1043488	1.526175
ceod	-21.45935	-24.34742	2.88807	5.947475
fmdebt	-.5928406	-.7650804	.1722398	.140894
fmsize	-7.916984	-.3730515	-7.543933	3.343374
fmage	-1.237968	-5.583722	4.345754	1.776681
Notes: chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 4.71 Prob>chi2 = 0.5819				

The Random-Effects and 2SLS regression results appear similar in terms of the magnitude and direction of both sets of coefficients. Both confirm the OLS findings that there is a significant positive relationship between outside directors and firm financial performance. Similarly, both confirm that there is a significant negative relationship between both CEO duality. However, both confirm that Board size is negatively but not significantly related with firm financial performance. Therefore, OLS regression results are reasonably robust to the endogeneity tests results.

CONCLUSION

This study examined the relationship between board structure and firm financial performance in Tanzania listed firms. The findings indicate that there is a negative relationship between CEO duality and firm financial performance. Also, the findings show that, in the case of Tanzania's listed firms, outside directors have a positive impact on these firms' financial performance. These findings support the agency theoretical stance of having large number of outside directors and separation of chairperson and CEO's roles to enhance effective monitoring role of boards and firm performance. Board size was found to have negative influence on firm's financial performance but not significant. This finding does not support resources dependence theory's view of having large board. The finding suggests an optimal size board.

The findings contribute literature to the understanding of the impact of board structure and firm performance in developing countries. Consequently, there is a need for more studies to be conducted on the board of directors' impact on the firm performance in developing countries where there have been few studies on Corporate Governance (Jackling and Johl, 2009). When compared to developed countries, developing countries have unique cultural environments and Corporate Governance structures (Ntim, 2015).

Turning to the practical implications, this study's findings provide policymakers with useful empirical suggestion regarding corporate governance in Tanzania. Tanzanian policymakers should, therefore, consider firm specific characteristics in reviewing or developing corporate governance regulations. It should be noted that there were certain limitations in conducting this study. The limitation of the sample size meant that the author tried to collect as full and accurate data as possible. More specifically, developing countries suffer from research sample size limitations due to the limited availability of information caused by different factors such as undeveloped stock markets, restrictions in obtaining information and the habits of not disclosing important research information (Weekes-Marshall, 2014; Assenga et al., 2018).

Against this background, the author recommends that future research studies especially in developing countries should consider the use of data from small and medium enterprises and state-owned enterprises in order to increase the sample size. In addition, it is also recommended that the inclusion of qualitative data could add more value to their findings.

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