Board Independence and Company Performance in East Africa

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Abstract

Purpose: The main aim of this study was to examine the influence of board independence on financial performance of listed companies in the East African Community (EAC) by examining the influence of board independence on performance of EAC’s listed companies and compare the influence of board independence on company’s financial performance before and after the operationalisation of the EAC- Common Market in 2010 to make recommendations on how board independence can enhance or hinder a company’s financial performance.

Design/Methodology/Approach: We adopted a positivist paradigm in a quantitative analysis using non-probability sampling to select forty-two EAC listed companies. We developed hypotheses based on secondary data from databases (DataStream, Eikon, Mint Global Bureau Van Dijk) and company’s annual reports. SPSS was used to carry out regression diagnostic test and generate descriptive statistics, correlation, and regression results.

Findings and Recommendation: Our findings indicated that to some extent board independence had a statistically significant influence on company financial performance measured by RoA, RoE, TbQ but not PeR. Secondly; we also discovered some negligible changes in board independence for most listed companies for the period before and after operationalisation of the EAC - Common Market. Based on our inconclusive statistical results and the extant literature review, we recommend that EAC listed companies adopt a code of best practice that emphasises an increase in board independence.

Keywords: Board Independence, Regional Economic Integration, Financial Performance.

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1.0 INTRODUCTION

A board is said to be independent if it composed of majority non-executive directors with no material interests in the business of an organisation other than their directorship. This study adopted the proportion of outside directors to total directors as the measure of board independence (Barontini & Caprio 2006; Moldasheva 2015; Tshipa 2015; Youssef & Bayoumi 2015). According to CMA, K (2002), a board is said to be independent if its membership of non-executive directors is more than fifty percent of the total board membership. The main significance of board independence lies in better monitoring of the company which mitigates principal–agent conflicts (Jensen, Michael C & Meckling 1976). Hence, most corporate governance codes and good practices, require the board to be composed of both inside directors (executive directors) and non-executive directors (Cadbury 1992; CMA, K 2002; OECD 1999, 2004, 2015). The main relationship between board independence and company performance is based on the assumption that board independence results in improved company monitoring and control, promotes better decision-making and greater efficiency in the allocation of a company resources, increase productivity, and which is likely to increase company financial performance (Katto et al, 2014; Peters & Bagshaw 2014).

According to Fama and Jensen (1983), having a majority of independent, non-executive directors on the board enhances the board’s ability to create value for the company and minimises fraud on the part of the executive management. This will undoubtedly reduce the company’s operating risks. Moreover, Forker (1992) claimed that having independent non-executive directors on company boards improves the quality of financial disclosure, thus enhancing investor confidence which improves company’s bottom-line. This view was maintained by Mattingly (2004)’s suggestion that outside directors exercise a higher level of monitoring and control over the management’s activities, because they are not part of the company’s day-to-day operations. Since they are able to improved monitoring function, it improves company’s financial performance (Fama & Jensen 1983; Porter 2008).

The board requires a high level of independence for the company to be monitored effectively and achieve better financial performance (Bhagat, S. & Bolton 2008; Haniffa, R. & Hudaib 2006). Youssef and Bayoumi (2015) studied the relationship between board independence and banks’ financial performance in Egypt and discovered a significant relationship between board independence and banks financial performance. Soliman, Ragab and Eldin (2014) used a sample of Egyptian listed companies and identified a positive relationship between board independence and company financial performance. A related was carried out in South Africa by Tshipa (2015) and it was discovered that the presence of independent non-executive directors positively influenced the companies’ financial performance. Siwadi, Miruka and Ogunto (2015), also examined the influence of board independence on company financial performance in Zimbabwe and found a significant positive relationship. Ayekum, Otchere and Bedi (2014), used Ghana Stock Exchange listed companies to examine the relationship between corporate...
governance and company performance. Being the first study in Ghana to test the relationship between corporate governance and company performance, using the cash flow approach and the modified Jones model in estimating total accruals as a measure of earnings management, the study discovered a significant relationship between board independence and company financial performance (Agyekum, Otchere & Bedi 2014).

According to Cadbury Report (1992), the presence of non-executive directors on the board enhances company performance. This proposition was adopted by all Capital Market Authorities (CMA) in East Africa in their corporate governance framework (CMA Kenya 2015). Consequently, all listed companies on the Nairobi Security Exchange (NSE) are required to a third of non-executive directors on every board / governing council to ensure proper checks and balances within organisations while protecting all stakeholders interests (Petrovic 2008). Additionally, Gitundu et al. (2016), study in Kenya established that independent non-executive directors positively influenced the company efficiency, while Morekwa Nyamongo and Temesgen (2013) contend that the existence of independent board of directors enhances the performance of banks in Kenya.

On the centrally, Agrawal and Knoebel (1996); Bhagat, S. and Bolton (2008); Klein (1998); Yermack (1996) found an adverse relationship between board independence and company financial performance, while Bhagat, S. and Bolton (2008) discovered that board independence is negatively related with financial performance and castigated companies that increase the number of non-executive directors with the hope of achieving higher financial performance as being misguided. This stance is supported by Hermalin and Weisbach (1991), who suggested that outside directors are only effective at monitoring and disciplining managers of poorly performing companies, not for enhancement of company performance, because the presence of independent non-executive directors only enhances the board’s monitoring function which is the only factor that effects company performance. Last but not the least, Fosberg (1989) discovered no relation between a higher percentage of non-executive directors and various company performance measures, while Hermalin and Weisbach (1991) and Laing and Weir (1999) found no significant relationship between board composition and company performance. According to Yermack (1996), the proportion of non-executive directors does not significantly affect company financial performance. Board independence in this study was calculated as the ratio of non-executive directors to total number of directors (Anderson & Reeb 2003; Barontini & Caprio 2006).

Company Financial performance

Financial performance is a measurement of company results, policies and processes in monetary terms (Margolis & Walsh 2001). The commonly used performance measurement in accounting and finance include return on equity, return on assets, profit margin, sales growth etcetera, which measures the extent to which a company achieved her period’s financial objectives (El-Shishini 2001). According to Lussier (2011), achievement of financial objectives is influenced the prevailing internal and external risk, this call for stronger internal control systems within an organisation to monitor and control the activities of an organisation by both the executive and non-executive directors. It is thus the responsibility of the company management to identify, analyse and mitigate such risk factors by designing good corporate governance policies that can enable investors to realise their expected return on investment (Shleifer & Vishny 1997).

According to Jensen, Michael and Meckling (1976), company performance is the foundation for the principal–agent relationship, which is derived from the agreement between principal (shareholder) and agent (manager) giving the agent powers to use company assets to generate profits for the shareholder’s wealth maximisation. This forms part of the manager’s main task; ensuring that the company achieves good performance outcomes (Feltham & Xie 1994). Measuring company financial performance therefore helps the principal to evaluate the agent’s contribution to the company’s profitability over a specified period of time (Wild 1994). Confirmatory to Fama and Jensen (1983), companies’ performance depends on agents’ decisions. If managers are more motivated to maximise their personal benefits, they are likely to make poor decisions that result in poor company performance. For instance, the management of the defunct Enron and WorldCom put their personal interests before those of their company, which resulted in its calamitous failure (Claessens, S. & Yurtoglu 2013). Therefore, for a company to achieve maximum profitability, it must have a good corporate governance framework which ensures a degree of altruism in the executive management’s decisions (Shleifer & Vishny 1997). Performance measurements can be broadly categorised in two: (1) accounting based, (2) market based performance measurements.

An accounting-based performance measurement involves the use of the accounting information to assess the extent to which a company has achieved its predetermined performance objectives using the present and past published financial accounting data (Agarwal, Y 2013; Weber et al. 2012). According to Baker and Anderson (2010), in the beginning, profit -based measurement was the commonly used measure of performance, this complemented with introduction of Net Present Value by Fisher (1930) and Internal Rate of return by Hirshleifer (1958). These two were later improved on by adding on a new valuation technique by Miller and Modigliani (1958, 1961) who postulated a new capital structure model used in company valuation. According to Knight (1998), most traditional accounting-based measures were developed to help in the management’s decision-making, accountability and budgetary control activities. Hengartner (2006) posits that accounting-based performance
measures are strong measures of performance; they provide reliable results, especially during period of economic crisis, and are relatively free from speculation as compared to market-based measures. Furthermore, according to Baker and Anderson (2010), accounting-based performance measures have the advantage of being directly linked to a company’s financial survival.

Market performance measurements on the other hand include market-based ratios such as market share, number of customers and the Tobin’s q ratio (Kim 2015; Rossi, Nerino & Capasso 2015; Zagorchev & Gao 2015) and PeR (Aik, Hassan & Mohamad 2015; De Aguiar, Pinheiro & Oyadomari 2014; Shah, Haldar & Rao 2014). Unlike accounting-based performance measures, market-based measures use market value data to determine company financial performance (Eikelenboom 2005). The main advantage of market-based approaches is that they are less prone to managerial manipulations or creative accounting (Mulsow 2011). Market-based measures of performance are also risk-adjusted, especially where the Capital Asset Pricing Model (CAPM) is used in calculating the company’s market value (Mans-Kemp 2014). Hence, it is believed that using market-based ratios like TbQ provides better measures of performance, which are more reliable, long term-oriented and risk-adjusted (Kim 2015; Li, SL & Tallman 2011). This study adopted a combination of accounting-based (RoA and RoE) and market-based (TbQ and PeR) to maximise the advantage of each of the methods. These measures have been adopted given their wide usage in previous business finance, corporate governance, finance and company performance researches (AdeBIite 2012; Ansong 2013; Bhagat, S. & Bolton 2008; Mans-Kemp 2014; Okiro 2014).

Aims of the study

The overarching aim of this study is to examine the influence of board independence on the companies’ financial performance within the EAC by addressing the following specific objectives:

- i. Examine the influence of board independence on performance of EAC’s listed companies
- ii. Compare the influence of board independence on company’s financial performance before and after the operationalisation of the EAC- Common Market to make recommendations on how board independence can enhance of hinder a company’s financial performance

We hope this study will provide new and relevant knowledge about board independence in developing countries in general, and EAC countries in particular. The findings will also help in encouraging economic growth and development by identifying board independence as good corporate governance practices (OECD 1999, 2004, 2015).

2 LITERATURE REVIEW

A number of theories have been used in research to explain the relationship between board independence and company financial performance. These include the agency theory, the stakeholders’ theory, the resource dependency theory, the legitimacy theory, and the institutional theory.

2.1 Resource dependency theory

According to resource dependency theory, the value of any board member is measured by his or her ability to attract and bring in external resources into the company for the benefits of the shareholders (AdeBIite 2012). Hence, companies appoint board members based on their ability to promote the company access to some critical external resources that can enhance company value (Johnson, Daily & Ellstrand 1996). These resources may include expertise, public influence, networks or influential professionals and industry experts (Abdullah, H & Valentine 2009). According to Pfeffer and Salancik (2003), recruitment of an external (independent) board member is likely create a favourable linkage between the company and its external environment. Such networks provide a company with new information and support from its operational environment (public or government) which legitimises a company with its environment. Hillman, Shropshire and Cannella (2007), hence posits that independent directors are the most critical resource needed by any company; their presence on the board portrays equality and better career opportunities for prospective employees. This helps an organisation to attract better quality employees, who will drive increases in the company’s performance.

2.2 Legitimacy Theory

According to Suchman (1995, p. 574), the legitimacy theory states “the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions”. The theory assumes existence some beliefs which gives rise to a social contract between an organisation and the society. This gives approval to an organization to carry out business, and in turn an organisation is expected to provide accountability to the society (Deegan 2013). The legitimacy theory thus emphasises the need for an organisation to comply with the rights and expectations of its host community, failure of which would result in sanctions against the company in the form of restricted access to the market and other key resource (Deegan 2013).

In the East Africa, most companies’ operations are controlled by governments via the fiscal policy (tax systems) and the general public who provide market and input resources of materials and labour. Other listed company’s stakeholders (with interest and influence) include financial institutions and recently the security
markets who provide investment capital and the media that influences public opinion about the company’s products and services (Mendelow 1991; Tilling 2004). Therefore, listed companies have a legitimate responsibility to meet the expectations of the society (Ashforth & Gibbs 1990). The legitimate theory has a big influence on corporate governance in the EAC; listed companies often appoint outside (independent) directors from public, government, advocacy and special interest groups, and financial institutions to legitimise their operations.

2.3 Transactional cost Theory
This theory was developed from the agency theory (Coase 1937). According to Williamson (1985) and Pound (1993), like in agency theory firms will incur high transaction costs due to the principal – agent conflicts. Ordinarily, principals (shareholders) contracts an agent (manager) to run the company and maximise their wealth. But company performance is often influenced by the manager’s behaviour. Due to lack altruism, a manager will often focus on personal pay, privileges and prestige at the expense of shareholder’s wealth (Jensen, Michael C & Meckling 1976). The Transaction cost theory thus focuses on the agent’s responsibility in managing (minimising) transaction costs such information gathering, negotiation, re-negotiation and enforcement (Williamson 1985).

Williamson (1988), thus posits that a company’s transaction costs are influenced by bounded rationality (the notion of homo economics) and opportunism. Because of management bounded rationality and opportunism, managers tend to make opportunistic decisions on some transaction costs for personal gains or due to limited information or time (Simon, 1982). The transaction cost theory hence calls for stringent measures in managing company transactions to reduce operational costs. The presence of independent directors thus increases company monitoring and supervision while mitigating the risk of excessive transaction costs by the management. Hence the presence of outside directors reduces transaction and agency costs (Benkler 2002; Coase 1937; Jensen, Michael C & Meckling 1976).

2.4 Regional Economic Integration and the EAC
Regional economic integration refers to a joint trade policy by countries aimed at reducing or eliminating trade barriers amongst the member states (Salvatore 2004). It is achievable by linking the member country’s economic, social and political infrastructures to enhance each other’s economic growth and development (Kehoe 2006). According to Schiff and Winters (2003), there has been a growing trend towards regionalism, which makes economic integration a vital element among the global economies. The idea of regional economic integration was first emerged after World War II (Schiff & Winters 2003), it then expanded and was embraced by most developed countries globally. One of the best examples of such economic integration was the European Union (EU), which was formed by Luxembourg, Netherlands, United Kingdom, Italy, France and Germany in 1951. It later became the European Economic Community (EEC) in 1957 and the European Free Trade Association (EFTA) in 1960 (Radebaugh, Sullivan & Daniels 2015). The success of the EEC has encouraged the spread of integration to other regions of Latin America, Asia and Africa (Schiff & Winters 2003).

According to Mwasha, (2011), economic integration in Africa started in 1910s with the creation of the Southern African Customs Union with membership from South Africa, Botswana, Lesotho, Swaziland and, Namibia. Today Africa has many economic integrations such as; East African Community (EAC), Common Market for Eastern and Southern Africa (COMESA), Economic Community of West African States (ECOWAS), Southern African Development Community (SADC), Economic Community of Central African States (ECCAS) and the Arab Maghreb Union (AMU) among others. Despite the increase in numbers, most economic integration in Africa have not been very effective in delivering the expected economic growth and development (Mwasha 2011). Some of the reasons behind their poor performance include lack of commitment by member countries, political and economic instabilities, external debt problems, currency fluctuations, and narrow tax bases (Matthews 2003).

The EAC economic block is made up of six partner states, namely: Kenya, Uganda, Tanzania, Rwanda, Burundi and South Sudan. It has aggregate population of about 145.5 million, a total land mass of 1.82 million square kilometres and an aggregate Gross Domestic Product (GDP) of US$ 147.5 billion (EAC 2016). The EAC was first formed in 1917 between Uganda and Kenya and was later joined by Tanzania in 1927, before being dissolved in 1977 (EAC 2016). After its dissolution, the member countries came to a mediation agreement regarding the distribution of the community’s assets and liabilities, which was concluded with the signing of the 1984 treaty amongst the then three EAC member states (Kasaija 2004). In the early 1990s, the East Africa region experienced changes in leadership which resulted in significant social, economic and political transformations and the need to revive the EAC as a regional economic integration and promote the development of security markets (EAC 2016; Kasaija 2004).

In the mid-1990s, Uganda, Kenya and Tanzania formed Capital Market Authorities to regulate the activities of the East African Community Security Markets and in 1997, a joint regulatory body known as the East African Securities Regulatory Authorities (EASRA) was formed and mandated with regulating the EAC Security Markets’ activities, fast-tracking the EAC Security Markets’ integration, harmonising the legal frameworks and market
infrastructure as well as developing policy guidelines for the capital markets’ growth incentives within the EAC (Yabara 2012). Meanwhile, in 2005, the EAC’s economic integration had changed from a free trade zone to the East African Community Customs Union, which later became the East African Common Market (EAC-Common Market) in 2010. This transformation led to the advent of corporate governance in the early 2000s among all the EAC countries. Kenya was the first country to introduce a code of corporate governance in 2002 followed by Uganda and Tanzania in 2003 (CMA, K 2002; CMA, U 2003). Rwanda introduced their code of corporate governance in 2010 (RSE 2015).

3.0 METHODOLOGY

The main aim for this study was to examine the influence of board independence on the financial performance of listed companies within the EAC. To achieve this objective, we adopted the positivist paradigm under deductive approach, using quantitative techniques to identify the causes and effects of social phenomena (Collis & Hussey 2013). We adopted the quantitative approach as often used in corporate governance and company performance studies (Alaghha 2016; Heenetigala 2011; Waduge 2011). We also adopted a deductive approach, in which hypotheses were developed from the review of existing literature, and data was collected and used to confirm or negate the proposed hypotheses. We based our hypothesis testing on secondary data from published statistics and annual reports. The use of a deductive approach and hypothesis testing method is a consistent with a quantitative approach. For instance, the use of numerical measurement in the quantitative approach makes it easier for research analysis and presentation of results for explanatory purposes. Additionally, the quantitative approach has less bias error than the qualitative approach (Collis & Hussey 2013). According to Veal (2005), a qualitative approach does not often provide researchers with the same level of rigour as a quantitative approach.

We obtained our quantitative data from secondary sources, which is the most commonly used method for obtaining data in most business finance, accounting and company performance research studies (Adams, R, Hermalin & Weisbach 2008; Alaghha 2016; Haniffa, R. & Hudaib 2006; Heenetigala 2011; Kiel & Nicholson 2003; Klein 1998; Laing & Weir 1999; Tshipa 2015; Waduge 2011). Our choice of secondary data was therefore based on its suitability in addressing the aforementioned aims of this study.

3.1 Dependent variables

We adopted Return on Assets (RoA), Return on Equity (RoE), Tobin Q ratio and Price Earnings Ratio (PeR) as our independent variables as commonly used performance measurement in business, finance, accounting and Corporate governance research (Hermalin & Weisbach 2008; Alaghha 2016; Heenetigala 2011; Kiel & Nicholson 2003; Klein 1998; Laing & Weir 1999; Tshipa 2015; Waduge 2011)

3.1.1 Return on Assets (RoA)

The RoA ratio is a measure of company efficiency in generating income from its total assets (Lesakova, 2007). It one of the commonly used accounting measure of performance when evaluating companies’ economic health and the proficiency of investment portfolios (Basarab, 2010; Lesakova, 2007). According to Ingram and Albright (2006), the RoA ratio provides a links between company's annual operations and investment activities. The RoA ratio hence measures the efficiency management in using company assets (Lesakova, 2007).

The RoA is calculated as:

\[
\text{RoA} (%) = \frac{\text{Annual Profits after Interest and Tax}}{\text{Total assets at the year-end}}
\]

A higher RoA ratio is an indication of management efficiency in utilising company assets to generate a higher value for the investors (Basarab, 2010; Lesakova, 2007).

3.1.2 Return on Equity (RoE)

The RoE evaluates company performance based on investment returns. It focuses largely on the management’s ability to make an investment return for equity holders in form of financial surplus after deducting all expenses. RoE was calculated in this study as:

\[
\text{RoE} (%) = \frac{\text{Annual Profits after Interest and Tax}}{\text{Total equity at the Year-end}}
\]

A higher RoE ratio is an indicator of management’s ability to generate extra income to the owners/shareholders.

3.1.3 Tobin’s Q ratio (TbQ)

Unlike RoA and RoE, the TbQ ratio uses market values when evaluating company performance. It’s computed as the ratio of company market value to the asset’s book value (Chorafas, 2004.). A lower TbQ ratio is an indicator of poor market confidence in the company shares, which could be attributed to poor governance that reduces company profits (Weir, Laing, & McKnight, 2002). According to Gross, (2007), TbQ ratio is a hybrid measure of performance, that is based on both accounting and market-based data. TbQ was calculated as:
Year-end market capitalisation

\[ \text{TbQ} = \frac{\text{Total assets at the Year-end}}{\text{Year-end market capitalisation}} \]

According to Leng (2004), the TbQ ratio measures the company’s growth prospects using the company’s asset base. A TbQ value of one indicates that the company’s market value is equal to the total book value of its assets. If the ratio is greater than one, the company’s market value is greater than its asset book value, and hence management is deemed to have created more value for owners (Chorafas, 2004). On the other hand, a TbQ less than one indicates that the company’s market value is lower than the total book value of its assets, which may suggest that the company’s share price undervalued (Chorafas, 2004).

### 3.1.4 Price earnings Ratio (PeR)

The PeR is used to estimate company’s market value using the earnings per share (EPS) at the year-end (Bernstein & Wild, 1993). The value of the company’s PeR depends on its governance policies, the past performance future performance potential, and industry risks (Bernstein & Wild, 1993). If a company posts good past performance results (profitability), high future growth potential (positive net present value projects), it would have a higher PeR than a similar company with poor past performance and low growth potential (Bernstein & Wild, 1993). Equally, a company with good governance policies will attract affirmative market perceptions which makes it appear less risky than its peers within a same industry. Likewise, high and stable dividend pay-outs will influence a company’s PeR because of its market-signalling effect. Consistent dividend pay-outs are a good signal to the market that a company is both financially strong and committed to rewarding its owners (Lease, John, Kalay, Loewenstein, & Sarig, 1999). This study calculated PeR using the following formula:

\[ \text{PeR} = \frac{\text{Company’s year-end share price}}{\text{Earnings per share (EPS)}} \]

PeR is influenced by the company risk, particularly the finance risk or the risk of having debt capital within its capital structure. The presence of debt capital affects the company’s bottom line and EPS, hence reducing earnings growth. This also increases the financial risks such as bankruptcy, tax exhaustion, leverage associated with higher PeR ratio (Bernstein & Wild, 1993).

### 3.2 Hypothesis Development

Our hypotheses were uncured of the assumption that higher proportion of external / independent directors improve the company financial performance (Daly & Dalton 1992; Schellenger, Wood & Tashakori 1989). It’s a common practice in the EAC for companies to have not less than one-third of the board composed external independent directors (CMA, K 2002; CMA, U 2003; USE 2014). This is in compliance with the codes of corporate governance and good practice in EAC which recommends that any listed company should have at least one-third of directors as non-executive directors. According to Abdullah, (2004), there is a positive and significant correlation between board independence and company financial performance measured by returns on assets, profit margin and earnings per share. Similarly, Fauzi and Locke (2012) studied listed companies in New Zealand from the period 2007-2011 and discovered a significant association between the number of non-executive directors and company performance.

In many developed and emerging economies, board independence is considered as paramount contributor to effective company monitoring and performance (Siddiqui 2015), hence the company laws and regulations mandates all companies to have independent boards for company monitoring and control. The United States of America (USA), for instance introduced the Sarbanes-Oxley Act in 2002 to enforce the need for companies to have a majority of independent directors on their board (Li, X 2014). The choice of the board independence this study was therefore based on the assumption that board independence enhances a board's monitoring capacity, hence it was deemed useful to analyse the extent to which it may or may not influence the EAC-listed companies’ financial performance before and after operationalisation of the EAC common market in 2010. The researcher thus hypothesised that:

1. There is a significant relationship between board independence and company financial performance (H1).
2. There has been a significant change in board independence after the operationalisation of the EAC-Common Market (H2).

### 3.3 Data collection and sample selection

We adopted secondary data source mainly because the data required for this study was readily available in company annual reports and databases. The use of secondary data is consistent with other accounting, finance and corporate governance research studies, in which researchers clearly stated that they used secondary data to save time and money for data collection (Beasley, MS 1996; Heenetigala 2011; Ngwenya & Khumalo 2012; Okiro 2014; Waduge 2011). The type of secondary data used in this study includes journal articles, e-books, press releases and websites. The researcher also obtained financial data from well-established databases, namely Orbis
Bureau Van Dijk, DataStream, Eikon and Mint Global Bureau Van Dijk. Additional data sources, such as published companies’ annual reports and company websites was used in the current study. Microsoft Excel and Statistical Package for the Social Science (SPSS) version 23 was used for data handling and analysis. Excel was used to manage and format data before exporting it into SPSS for statistical analysis. SPSS was used to carry out the preliminary diagnostic tests, descriptive statistics, correlation, and regression analyses.

We adopted non-probability sampling to select the forty-two listed companies used in ours study. We used listed companies instead of private companies because their information is publicly available (Okiro 2014). We initially intended to use as a population all the listed companies on the EAC Security Markets in 2008/2009 and 2013/2014. A total of 108 companies were listed on the EAC Security Markets as at 31st June 2016. Unfortunately, not all the listed companies qualified to be included in the sample because they were either not listed on the EAC stock market for the full financial years 2008/2009 and 2013/2014, or their annual reports were not available from the DataStream, Eikon and Mint Global Bureau Van Dijk databases.

3.4 Diagnostics statistical tests
We adopted a number of diagnostic statistics to ascertain the validity of the regression models used to test the relationship between board independence and company financial performance. We tested normality of the error distribution, homoscedasticity and coefficient of variation tests.

3.4.1 Normality of the error distribution
We tested the normality of error distribution using the Shapiro-Wilk test, which is considered as the best measure for identifying any departures from normality distribution due to skewness or kurtosis (Baty et al. 2015). Under the Shapiro-Wilk test, the null hypothesis states that there is no difference between the observed distribution of survey scores and a normally distributed sample error. Hence, if the critical alpha is larger than the obtained p-value, the null-hypothesis is rejected (Shapiro & Wilk 1965). The results of the normality test are discussed in section 4 below.

3.4.2 Heteroscedasticity test
We tested homoscedasticity using the Koenke tests in the SPSS macro developed by Garcia-Granero (2002). According to Watson and Teelucksingh (2002), Koenker test results are easy to understand and the test can be carried out with small data sample, which makes it suitable for this study’s small data sample. The null hypothesis of the heteroscedasticity test implies that there is no conditional heteroscedasticity and thus the individual-specific or time-specific variance error components are equal to zero (Park 2011). The homoscedasticity assumptions of regression were met, and consequently the current study adopted the regression analysis to test the study’s hypotheses.

3.4.3 Coefficient of variation
The coefficient of variation is calculated as the ratio of the standard error of the estimate to the mean of the dependent variable (Cook & Krishnan 2015) According to Aiken, West and Pitts (2003), there is no acceptable threshold for a coefficient of variation since it vary across different disciplines but the lower the coefficient of variation, the smaller the residuals relative to the predicted value. The lower coefficient suggests a relatively good model fit compared to a higher coefficient of variation. Nonetheless, there is a drawback in using the coefficient of variation to assess model fit when a variable contains a positive and negative coefficient of variation values and the mean is close to zero, which gives a misleading result (Cook & Krishnan 2015). The results of the coefficient of variation are discussed below.

3.5. Correlation analysis
Our diagnostic tests revealed no approximate normal distribution. Hence, this study used Spearman’s rank correlation analysis to examine the relationship between board independence company performance indicators. Spearman’s rank correlation has been used in previous research on corporate governance and company performance studies (Abdullah, SN 2004; Alagha 2016; Heenetigala 2011).

3.6 Ordinary least squares (OLS) regression
We adopted OLS regression which is considered a straightforward method of statistical analysis (Zikmund et al. 2012). We adopted our model using the following equation:

\[ Y_i = \beta_0 + \beta_1 X + \epsilon \]

1.

Where:
- \( Y_i \) = the dependent variable
- \( X \) = the independent variable
- \( \beta_0 \) = intercept
- \( \beta_1 \) = slope and
- \( \epsilon \) = error term.

From the above equation, we derive equation 2 - 6 used in this study:

\[ Y_t = \beta_0 + \beta_1 B_t + \epsilon_t \]

2.
Where: $Y_t$ represents dependent variable (PeR, TbQ, RoE or RoA) at time $t$, $\beta_0 = \text{intercept}$, $\beta_i = \text{slope}$, Bi = Board independence, and $\varepsilon_t$ represents the margin of error due to other factors outside the model that may influence $Y_t$.

We thus derived the following four model equations used to test our hypotheses.

\[
\begin{align*}
\text{i. } & \text{RoA}_t = \beta_0 + \beta_1 \text{Bi} + \varepsilon_t \\
\text{ii. } & \text{RoE}_t = \beta_0 + \beta_1 \text{Bi} + \varepsilon_t \\
\text{iii. } & \text{TbQ}_t = \beta_0 + \beta_1 \text{Bi} + \varepsilon_t \\
\text{iv. } & \text{PeR}_t = \beta_0 + \beta_1 \text{Bi} + \varepsilon_t
\end{align*}
\]

4.0 RESULTS

Below the findings of our study represented by the diagnostic test, descriptive statistics, correlation and regression tests.

4.1 Study Results

Table 4.1 presents the test results of the normality, heteroscedasticity, and Coefficient of variation used in this study.

Table 4.1. Linear regression’s diagnostic test results

| Source: Own source |
|---------------------|
| Threshold assumption: | Normality test | Heteroscedasticity test | Coefficient of variation |
|                      | Normality test | Heteroscedasticity test | Coefficient of variation |
|                      | p > 0.05       | p > 0.05                | Low                    |
|                      | Shap.Wilk      | Koenker                 | Shap.Wilk              | Koenker                |
| 2013/2014            | 0.076          | 0.064                   | 0.193                  | 0.124                  | 0.056 | 0.245 |
| RoA                  | 0.930          | 0.064                   | 0.117                  | 0.780                  | 0.056 | 0.092 |
| RoE                  | 0.326          | 0.064                   | 0.131                  | 0.155                  | 0.056 | 0.252 |
| TbQ                  | 0.438          | 0.064                   | 0.177                  | 0.852                  | 0.056 | 0.239 |
| PeR                  |                |                        |                       |                       |       |       |

4.1.1 Normality of the error distribution

We tested normality distribution of the residual using the Shapiro-Wilk test, which is as a dominant tool in detecting any departure from normality due to kurtosis or skewness (Baty et al. 2015). The Shapiro-Wilk test’s statistical significance ranges from zero to one. Any value higher than 0.05 is an indication that the residual is normally distributed (Baty et al. 2015; Razali & Wah 2011). The p values for the Shapiro-Wilk tests on residual normality in 2008/2009 for PeR, was 0.852, TbQ = 0.155, RoE = 0.780 and RoA =0.124, while in 2013/2014, PeR was 0.438, TbQ = 0.326, RoE = 0.930 and RoA = 0.076. These values are all above the significance value of 0.05, which therefore confirms that the residual is normally distributed in this study (Shapiro & Wilk 1965).

4.1.2 Heteroscedasticity test

We carried out heteroscedasticity test using the Koenker tests in the SPSS macro developed by Garcia-Granero (2002). The null hypothesis in the Koenker test assumes that homoscedasticity is present (or heteroscedasticity is not present). The p values of the Koenker tests of homoscedasticity in 2008/2009 and 2013/2014 was 0.056 and 0.064 respectively meaning that the 2008/2009 and 2013/2014 are homoscedastic (p>0.05).

4.1.3 Coefficient of variation

The results of the coefficient of variation in 2013/2014 are as follows: RoA = 0.193, RoE = 0.117, TbQ = 0.131 and PeR was 0.177. Similarly, in 2008/2009, the coefficient of variation for RoA = 0.245, RoE = 0.092, TbQ = 0.252 and PeR = 0.239. According to Cook and Krishnan (2015), the lower the coefficient of variation, the smaller the residuals relative to the predicted value, the above results thus suggests a relatively good model-fit.

4.2 Descriptive statistics

We adopted the mean, median, maximum, minimum and standard deviation to identify the statistical characteristics of the study’s independent and dependent variables as indicated in table 4.2, below
Table 4.2: Descriptive Statistics

| No | Mean | Median | Std. Dev. | Minimum | Maximum | Years |
|----|------|--------|-----------|---------|---------|-------|
| RoA (%) | 42 | 40.581 | 40.109 | 4.263 | 32.758 | 50.570 | 2008/2009 |
| RoE (%) | 42 | 40.793 | 41.740 | 10.007 | 19.343 | 62.396 | 2008/2009 |
| TbQ | 42 | 0.425 | 0.390 | 1.913 | 0.165 | 2.038 | 2008/2009 |
| PeR | 42 | 9.743 | 9.812 | 1.884 | 2.719 | 37.341 | 2008/2009 |
| BI (%) | 42 | 76.869 | 81.818 | 14.549 | 33.333 | 91.667 | 2013/2014 |
| RoA (%) | 42 | 40.009 | 39.083 | 9.085 | 19.105 | 63.863 | 2013/2014 |
| RoE (%) | 42 | 39.229 | 41.318 | 11.497 | 7.090 | 64.121 | 2013/2014 |
| TbQ | 42 | 0.466 | 0.441 | 3.107 | 0.056 | 6.936 | 2013/2014 |
| PeR | 42 | 11.056 | 11.364 | 2.058 | 1.766 | 52.375 | 2013/2014 |
| BI (%) | 42 | 76.106 | 80.909 | 15.551 | 33.333 | 93.333 | 2013/2014 |

Where: BI = Board independence, RoA = Return on Asset, RoE = Return on Equity, TbQ = Tobin’s Q ratio and PeR = Price Earnings ratio

Source: Own source

4.2.1 Return on assets (RoA)

Analysis of 2008/2009 descriptive statistics on RoA, as shown in Table 4.2, indicates a mean of 40.58%, median of 40.11%, standard deviation of 4.26, minimum of 32.76% and maximum of 50.57%. For 2013/2014, the mean RoA was 40.01%, median 39.08%, standard deviation 9.09, minimum 19.11% and maximum 63.86%. There is a positive mean value in both periods, which indicates that the EAC-listed companies in this study generated a similar positive return of about 40% on assets for their shareholders before (2008/2009) and after (2013/2014) the establishment of the EAC-Common Market.

4.2.2 Return on equity (RoE)

Analysis of 2008/2009 descriptive statistics on RoE in Table 4.2 indicated a mean of 40.79%, median of 41.74%, standard deviation of 10.01, minimum of 19.34%, and the maximum of 63.40%. The RoE mean and median values for both 2008/2009 and 2013/2014 indicate that the EAC-listed companies in this study generated a similar average positive return of about 40% for their shareholders before (2008/2009) and after (2013/2014) the establishment of the EAC-Common Market.

4.2.3 Tobin’s q ratio (TbQ)

The TbQ descriptive statistics results in Table 4.2 show that for 2008/2009, TbQ had a mean of 0.4251, median of 0.390, standard deviation 1.913, minimum of 0.165, and maximum of 2.038. For 2013/2014, the TbQ descriptive statistic results included a mean of 0.466, median of 0.441, standard deviation of 3.107 minimum of 0.056, and maximum of 6.936. The descriptive statistics for TbQ indicates that EAC listed companies experiences higher volatility in 2013/2014, after the establishment of the EAC-Common Market. The degree of volatility (Standard deviation) in TbQ increased by 62% in 2013/2014 as compared to 2008/2009.

4.2.4 Price earnings ratio (PeR)

The descriptive statistics results for 2008/2009 indicate an PeR mean of 9.743, median of 9.812, standard deviation of 1.884, minimum of 2.719, and maximum of 37.341. On the other hand, in 2013/2014, the descriptive statistic results for PeR showed a mean of 11.056, median of 11.364, standard deviation of 2.058, minimum of 1.766, and maximum of 52.375. The PeR’s positive means and medians for both 2008/2009 and 2013/2014 are an indication that the EAC-listed companies continued to create value for their shareholders after the operationalisation of the EAC–Common Market in 2010.

4.2.5 Board independence

During 2008/2009, board independence had a mean value of 76.87%, median of 81.82%, standard deviation of 14.55, and minimum of 33.33% and maximum of 91.67%. Four years after operationalisation of the EAC–Common Market, the mean board independence was 76.11%, the median was 80.91%, the standard deviation was 15.55, the minimum board independence remained at 33.33% and the maximum was 93.33%. The above results indicate that the majority of companies in the EAC had more external than internal directors on their boards. The reason for the minimum board independence of 33.33% in the study data is that the corporate governance codes in all the EAC countries recommend that at least one-third of directors should be non-executive directors (CMA, K 2002; CMA, U 2003; USE 2014). Hence, the 33.33% minimum percentage for board independence in 2008/2009 and 2013/2014 (Table 4.2) demonstrate that all companies maintained the degree of board independence recommended by the EAC’s code of governance and good practice.
4.3 Spearman's correlation results

Table 4.3 Spearman’s rank correlation analysis

|                | 2008/2009 | 2013/2014 |
|----------------|-----------|-----------|
|                | Spearman’s rank correlation Coefficient | Spearman’s rank correlation Coefficient |
|                | PeR       | TbQ       | RoA       | RoE       | BI        | PeR       | TbQ       | RoA       | RoE       | BI        |
| PeR            | 1         |           |           |           |           | 1         |           |           |           |           |
| TbQ            | 0.571***  | 1         |           |           |           |           |           |           |           |           |
| RoA            | -0.325**  | 0.156     | 1         |           |           |           |           |           |           |           |
| RoE            | -0.393**  | 0.065     | 0.662***  | 1         |           |           |           |           |           |           |
| BI             | 0.094     | -0.038    | 0.010     | -0.338*   | 1         |           |           |           |           |           |

Where: *** Significant at 1% level, ** Significant at 5% level, * Significant at 10% level.

4.4 Ordinary least squares (OLS) regression results

We interpreted OLS regression results considering the coefficients, the R-squared values and the P values. According to Bowerman et al. (2003) the variable coefficient shows the size of effect that one variable has over the dependent variable. Positive coefficients indicates how much the dependent variable is expected to increase when the independent variable increases by one unit, holding other variables constant and the reverse is true for the negative coefficient (Tabachnick & Fidell 2006; Tabachnick, Fidell & Osterlind 2001). The R-squared is the fraction of the variation in the dependent variable that is predictable by an independent variable. The P value for each independent variable tests the null hypothesis that the coefficient is equal to zero. If the null hypothesis is not rejected, the respective independent variable has no effect on the dependent variable (Field 2009).

4.4.1 Influence of Board Independence on RoA

Table 4.4, below, presents a summary of the regression results on the relationship between Board Independence and RoA in 2008/2009 and 2013/2014.

| Dependent variable: RoA | 2008/2009 | 2013/2014 |
|-------------------------|-----------|-----------|
| Model fit: R^2 = 0.4960 | P = 0.0023 | F = 1.6809 | Model fit: R^2 = 0.5426 | P = 0.0003 | F = 5.8543 |
| Coeff                   | T         | P         | Coeff                   | T         | P         |
| Constant                | 60.843    | 6.091     | 0.000                   | 52.834    | 3.713     | 0.001     |
| Board independence       | 0.855     | 1.771     | 0.087*                  | -0.409    | -0.613    | 0.544     |

*** Significant at 1% level, ** Significant at 5% level, * Significant at 10% level

Source: Own source

The 2008/2009 results show an adjusted R-squared value of 0.496, which indicates that about 50% of the total variability in RoA is explained by board independence. Hence board independence has a statistically significant positive influence on RoA (p<0.09<0.10); hence an increase in board Independence by one percent would result in an increase in the RoA by 86%, holding all other variables constant. On the other hand, the 2013/2014 results show an adjusted R-squared value of 0.542 which can be interpreted; about 54% of the total variability in RoA is explained board independence but board independence does not statistically and significantly
influence on RoE RoA.

4.4.2 The influence of Board Independence on RoE
The RoE represents the net amount of profits created by the company using shareholders’ funds (Khatab et al., 2011). Table 4.5, below, presents a summary of the regression results on the relationship between board independence and RoE.

Table 4.5. Regression analysis of board independence and RoE

| Dependent variable: RoE | 2008/2009 | 2013/2014 |
|------------------------|-----------|-----------|
|                        | Model fit: R² = 0.4721 | Model fit: R² = 0.5168 |
|                        | P = 0.0997 | P = 0.0001 |
|                        | F = 1.9820 | F = 6.3576 |
| Independent Variables  | Coeff | T | P  | Coeff | T | P |
| Constant               | 62.223 | 2.924 | 0.007 | 26.876 | 1.411 | 0.167 |
| Board independence     | -0.245 | -2.069 | 0.047** | 0.105 | 0.712 | 0.481 |

*** Significant at 1% level, **Significant at 5% level, * Significant at 10% level

Source: Own Source

As shown in Table 4.5 above, in 2008/2009, regression results show an adjusted R-squared value of 0.472, which suggests that about 47% of the total variability in RoE is explained by board independence. Board independence had a statistically significant negative influence on RoE (p=0.05<0.10), hence, an increase in board independence by one percent would result in a decrease in the RoE of 25% holding other variables constant. On the other hand, the results for 2013/2014 presented an adjusted R-squared value of 0.52, which shows a better model fit than 2008/2009. The adjusted R-squared results indicates that during 2013/2014, about 52% of the total variability in RoE could be attributed to board independence but board independence does not statistically and significantly influence on RoE.

4.4.3 The influence of Board Independence on TbQ
Table 4.5, below, presents a summary of the regression results on the relationship between TbQ and Board Independence in 2008/2009 and 2013/2014.

Table 4.5: Regression analysis of Board Independence on the TbQ and TbQ

| Dependent variable: TbQ | 2008/2009 | 2013/2014 |
|------------------------|-----------|-----------|
|                        | Model fit: R² = 0.4088 | Model fit: R² = 0.7368 |
|                        | P = 0.2719 | P = 0.0000 |
|                        | F = 1.3368 | F = 8.6757 |
| Independent Variables  | Coeff | T | P  | Coeff | T | P |
| Constant               | 2.129 | 1.347 | 0.188 | 5.751 | 4.840 | 0.000 |
| Board independence     | -0.332 | -2.294 | 0.019 | -0.642 | -6.749 | 0.000*** |

*** Significant at 1% level, **Significant at 5% level, * Significant at 10% level

Source: Own Source

According to the OLS regression results in Table 4.5, the adjusted R-squared value in 2008/2009 was 0.41, which suggests that about 41% of the total variability in TbQ can be explained by board independence but board independence does not statistically and significantly influence on TbQ. The 2013/2014 results, shows an adjusted R-squared value of 0.74, which demonstrates that about 74% of the total variability in TbQ can be explained by board independence. Board independence had a statistically significant negative influence on TbQ (p=0.00<0.01), hence, an increase in board independence by one percent would result in a decrease in the TbQ of 64% holding other variables constant.

4.4.4 The influence of Board Independence on PeR
Table 4.6, below, presents a summary of the regression results on the relationship between PeR and Board Independence in 2008/2009 and 2013/2014.

Table 4.6: Regression analysis of Board Independence on the TbQ and TbQ

| Dependent variable: PeR | 2008/2009 | 2013/2014 |
|------------------------|-----------|-----------|
|                        | Model fit: R² = 0.1834 | Model fit: R² = 0.4099 |
|                        | P = 0.2402 | P = 0.0038 |
|                        | F = 1.4186 | F = 3.9907 |
| Independent Variables  | Coeff | T | P  | Coeff | T | P |
| Constant               | 3.921 | 3.312 | 0.002 | 52.824 | 3.713 | 0.000 |
| Board independence     | 0.004 | 0.473 | 0.640 | 0.032 | 0.309 | 0.236 |

*** Significant at 1% level, **Significant at 5% level, * Significant at 10% level

Source: Own Source

The 2008/2009 results (Table 4.6) show an adjusted R-squared value of 0.18, which means that during 2008/2009, only 18% of the total variability in PeR is explained by board independence. On the other hand, in
2013/2014 results, the adjusted R-squared value was 0.41, which indicates that about 41% of the total variability in PeR in 2013/2014 can be explained by board independence and board independence does not statistically and significantly influence on PeR for both 2008/2009 and 2013/2014.

### 4.4.5 Summary of the hypothesis test results.

Presented in Table 4.7, below is the summary of the hypothesis tests results for the two hypotheses used in this study.

| Study hypotheses | Tests results 2008/2009 | Tests results 2013/2014 | Overall result | Results of prior studies on the influence of corporate governance and firm’s financial performance |
|------------------|-------------------------|------------------------|----------------|------------------------------------------------------------------------------------------|
| H1: There is a significant relationship between board independence and company financial performance | | | Inconclusive | Supported  
- New Zealand-listed companies using RoA (Fauzi & Locke 2012)  
- Malaysian companies using TbQ (Ameer, Ramli & Zakaria 2010)  
- Africa-listed companies using TbQ and RoA (Kyereboah-Coleman 2008)  
- Malaysian-listed firms using RoA, PE and EPS share (Abdullah, SN 2004) |
| BI and RoA | Supported | Not supported | |  
| BI and RoE | Supported | Not supported | |  
| BI and TbQ | Not supported | Supported | |  
| BI and PeR | Not supported | Not supported | |  

| H2: There has been a significant change in board independence following the operationalisation of the EAC-Common Market in 2020 | | Inconclusive | | No similar study with similar objective has been carried out since the operationalisation of the East African common market |

### Source: Own Source

### 5.0 REFERENCES

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