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**THE IMPACT OF BOARD COMPOSITION ON DIVIDEND POLICY FOR LISTED
COMPANIES IN KENYA**

SYLVIA BAKHITA WANJIRU NJOGU

095045

**Submitted in partial fulfilment of the requirements for the degree of
Bachelor of Business Science in Finance at Strathmore University**

Strathmore Institute of Mathematical Sciences

Strathmore University

Nairobi, Kenya

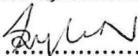
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..... Sylvia B. Wanjiru Njogu [Name of Candidate]
.....  [Signature]
..... 10th December 2019 [Date]

This Research Project has been submitted for examination with my approval as the Supervisor.

..... Mercy Kano [Name of Supervisor]
.....  [Signature]
..... 10th December 2019 [Date]

Strathmore Institute of Mathematical Sciences
Strathmore University

Dedication

I dedicate this research project to the Higher Being who watches for the gift of life and determination and will to accomplish this research. It is also to my family and friends for all their love and encouragement.

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Abstract

With the emphasis on proper corporate governance new corporate guidelines have recently been issued regarding board composition. Therefore, this study investigated the effect of board composition on dividend policy in listed non-financial firms in Kenya. The study was made up of a sample of 174 observations from 29 non-financial firms from 2013-2018. Dividend policy was divided into dividend decision and dividend payout. Board composition was represented by board independence, gender composition, board size and director ownership. The control variables were ROA, leverage and firm size. The relationship between dividend payout and board composition was obtained through a left-censored Tobit regression. The relationship between dividend decision and board composition was obtained through a logit regression. Based on the Tobit regression board size was a variable found to be positively significant. However, in the logit regression an additional variable was found to be significant besides board size, which was director ownership. The other firm specific control variables used in the study also had desired impact on dividend policy. The results suggested that firms that have a larger board pay higher dividend. This evidence was consistent with the fact that the more the directors, the more the diversification benefits leading to a higher return that result into payment of a higher dividend. Hence, having a large board can be thought as a method to mitigate agency conflict because payment of a large dividend reduces the free cash flow.

Keywords: Board composition, Dividend, Directors, Kenya.

Abbreviation

CMA	Capital Markets Authority
NSE	Nairobi Securities Exchange
DIH	Dividend Irrelevance Hypothesis
FCF	Free cash flow
OLS	Ordinary Least Squares
NPV	Net present value projects
LSE	London Securities Exchange
DCH	Dividend Clientele effect Hypothesis

1.Introduction

1.1 Background to the Study

1.1.1 Dividend Policy History

According to the The Finance Act (2018), dividends are cash or asset distributed or transferred by a company to or for the benefit of the shareholder or any person related to the shareholder. Malkawi, Raffetry & Pillai (2010) point out that at the end of every year companies are faced with a challenge; whether they should return cash to its stockholders and if so, how much in form of Dividends. Dividends are a way of satisfying shareholders because they represent part of shareholders return on investment. Abdullah, Ahmad & Roslan (2012) further insist that companies need to understand the need of optimizing the dividend payout ratio which can thus maximize shareholder wealth as well as maximize company wealth.

As far as four decades ago Black (1976) terms this issue of dividend policy as, "*The harder we look at the dividend picture, the more it seems like a puzzle with pieces that just don't fit together.*" Four decades later dividends have been one of the contested phenomena in the modern commercial corporation. Existing theories such as agency, signaling, clientele theory try to explain the behavior of dividend in the firms. Many researchers have carried out studies on various aspects on dividends in order to clarify some features of dividend policies. The various areas of studies include: (Shehu, 2015) reasons for paying dividends to shareholders and importance of maintaining a dividend payout ratio. Also, the possible association between dividend and shareholder's investment decision. All these remain inconclusive.

More research has been done on determinants of dividend policy in various stock exchanges around the world. Parkinson & Waweru (2010) reports on the determinants of dividend policy of listed companies in the Nairobi Securities Exchange include net income and liquidity. This is in line with the Kenyan Constitution Article 116 that states that no dividend shall be otherwise than out of profits (Constitution of Kenya, 2010).

Several studies have been carried out to examine impact of different corporate governance mechanisms on dividend payout ratio in different stock markets, many of them in developed countries. However, no conclusion has been made because researchers find varying results. Adjaoud & Ben-Amar (2010) and Shehu (2015) point out that there is a positive relationship

between board composition and dividend payout ratio while (Abdelsalam, El-Masry, & Elsegini, 2008), (Subramaniam & Devi, 2011) confirm there is an insignificant relationship between the board composition and dividend policy. Ghabayen (2012) finds a negative relationship between board composition and dividend payout ratio.

Over the years we can see companies trying to improve their dividend payout. This paper studies whether this improvement in dividend payout may be as a result of board composition of publicly listed companies on the Nairobi Securities Exchange. Literature present mainly focus on the relationship between dividend policy and board characteristics or corporate governance on developed countries. There is limited study of various factors affecting dividend policy in developing countries (Subramaniam & Devi, 2011) and especially in Kenya. This research contributes to the dividend debate from a perspective of a developing country filling the gap in literature in emerging markets.

1.1.2 The Board of Directors Composition

Over the last two decades, there has been an increasing public and academic interest on the various notions and mechanisms of corporate governance and how these can ensure that the shareholders' interests are at the heart of management's strategies. There are different types of Directors as provided for by the constitution who include; Directors as agents who represent the shareholders, Directors as employees of the company, Directors as Trustees of the company's property and money. Dividends are usually set by the board of directors and paid out to stockholders a few weeks later.

Introduction of dividend policy as a method of corporate governance was first mention in 1982 (Rozeff, 1982). He argues that the dividends reduce the free cash flow and hence this helps in mitigation of the free cash flow problem. Jensen (1986) supports that dividends can be used to help managers reduce agency costs by making free cash flows less available to them. However, given that the free cash flow problem is solved there exists an optimal dividend policy because high dividend result in high transaction cost as necessitated by requirement for external financing.

Corporate governance practices enhance division of authority among stakeholders, management and board of directors. One goal of corporate governance is having a well-organized functioning board and board's features like board size. Dividend policy is a direct corporate decision made

by the board and hence it necessitates the need to study the impact of board composition on dividend policy.

Black (2001) Argues that effects of corporate governance are likely to be found in the emerging economies which often have weaker rules and wider variation among firms in corporate governance. Hence Kenya's listed companies provide a good subject of study especially because it is an emerging market.

1.1.3 Nairobi Securities Exchange

Securities trading can be dated as far back as 1920's when the colonists traded shares informally on a gentleman's agreement. The London's Stock Exchange (LSE) officials accepted to recognize setting up of the Nairobi Securities Exchange as an overseas stock exchange and it was registered in 1954 under the Societies Act as a voluntary association of stockbrokers and its main functions included developing the securities market and regulating trading activities. Prices were determined through negotiation while transactions were done on telephone.

By 1968 the number of listed public sector securities were 66 where 45% belonged to the Government of Kenya, 23% to the Government of Tanzania and 11% belonging to the Government of Uganda. As a result of changing political regimes among East African Community members, various decisions were made affecting the free movement of capital. This in turn resulted in delisting of companies domiciled in Uganda and Tanzania from the NSE.

Tarus (2016) points out that in 1990 the CMA was constituted through the Capital Market Authority Act (Cap 495A) whose role to promote and facilitate development of an orderly and efficient capital market. The next year NSE was registered as a private company limited by shares. In 1999, the corporate governance guidelines were established the same year. It was in the same year that the Central Depository and Settlement Corporation Limited (CDSC) was incorporated under the Companies Act (Cap 486) and 5 year later it was commissioned.

The market in NSE is divided into 4 categories: Main Alternative Investment Segment (MIMS), Alternative Investment Segment (AIMS), Fixed Income Securities Market Segment (FISMS), Growth and Enterprise Market Segment. According to Nnadi, Wogboroma &Kabel (2013) a well-regulated stock market is a vehicle for economic development and it should then have a spin-off effect of dividend policy.

Gakeri (2013) states that, similar to other emerging markets, Kenya is characterized by a weak legal and regulatory framework. In the recent past there has been a number of corporate failures occasioned by financial distress among listed firms like the case of Uchumi Supermarkets in 2006 and CMC Kenya limited in 2012. Waweru (2014) clearly indicates the main reason attributed to these corporate failures is attributed to ineffective boards. Tarus (2016) claims that although CMA has enacted and implemented the corporate governance guidelines, there remains a need to determine whether governance mechanisms enhance effective decision-making in Kenya. These mechanisms are influenced by the board. This in turn imposes the study of dividend policy which is a corporate governance strategy. In particular, studying the impact of board composition on dividend policy.

1.2 Problem Statement

The newly added code of corporate governance (2015) by the CMA encompasses board diversity. Diversity is in terms of size, demographics, qualifications, technical expertise, relevant industry knowledge, experience, nationality, age, race and gender. The act also states that the minimum size of a board should constitute of at least 3 members. Additionally, a third of the board should be made up of independent non-executive directors.

There is evidence that more and more organizations are embracing board diversification. As of 2012 the percentage of board diversity was at 12%. According to Rossen & Tracey (2017) Kenyan board of directors' diversity in publicly listed companies as of 2015, was 18%. The latest documentation gives us 21% as of 2017 (Njihia, 2017). In the report by Mckinsey&Company (2007) it is seen that diverse boards have better leadership, administration and performance.

Literature has examined dividend policy in developed markets mainly in the USA (Easterbrook, 1984). Abdelsalam, El-Masry & Elsegini (2008) report that relatively few empirical studies focus on determinants of dividend policy in emerging markets. Jack, Glen, Yannis, Karmokolias, Miller, Robert Sanjay & Shah (1995) suggests that dividend policy in emerging markets is very different from developed countries. As the developing countries grow more importance is put on dividend policy. Now, more than ever dividend policy is important to the company. The Dividend policy is set up by the board. However, Kenya being a developing country, there is limited evidence on the role of board composition on the board of directors in listed companies

on the Nairobi Securities Exchange in Kenya. This study therefore looks to provide evidence on the impact of board composition on the dividend policy of listed companies in the Nairobi Securities Exchange.

1.3 Research Objectives

The research objectives of this study are;

1. To establish whether there is a relationship between board composition and dividend payout on listed companies in the Nairobi Securities Exchange.
2. To establish whether there is a relationship between board composition and dividend decision on listed companies in the Nairobi Securities Exchange.

1.4 Research Questions

The above objectives will be met by answering the following questions;

2. What is the relationship between board composition and dividend payout for companies listed in the Nairobi Securities Exchange?
3. How does board composition influence the dividend decision for listed companies in the Nairobi Securities Exchange?

1.5 Justification of the Study

The findings are dedicated to help corporate boards of companies be aware of the impact of diversification in their boards. The knowledge of how gender composition, independent directorship, size influences dividend policy and impacts the agency problem is essential in corporate governance. This then helps the board understand the role and level of influence they have in dividend policy and agency problem. The board can also seek to reach an optimum level based on the findings of the impactful board characteristics.

Companies that can mitigate agency problem are able to influence shareholder decisions. Therefore, this paper can benefit investors in terms of knowledge on the dividend expected as well as future capital gains. Thus, board composition helps an investor in signaling for the expected dividend based on the board characteristics.

Policy makers and regulators benefit because information will be provided on effectiveness of some corporate governance mechanisms that influence firm dividend payout. The role of the

policy and regulators makers is to ensure efficiency in the market, hence knowledge of the impact of board composition effect on dividend policy will push for creation of board regulations and guidelines that enhance corporate governance. The guidelines may be to increase or decrease the ratio of number of independent board members required.

The remainder of this paper proceeds as follows. Section 2 reviews relevant literature linking board composition to dividend payout policy. Section 3 describes the data and explains the research methodology used. Section 4 describes the data analysis methods used and section 5 discusses the findings, conclusion and limitations.

2. Literature Review

2.1 Dividend Policy and Theories

Frankfurter & Wood (1997) reports that historically Dividends trace back to the 16th Century where successful sailing captains began selling “ventures on parts” of their voyage to investors in the open market. Later, these “parts” were replaced by the term “dividend”. The denominations of the shares were either 1/8, 1/16, 1/32, 1/48 and 1/56. Investors then purchased shares from more than one captain to diversify risk which is a common practice we see now. Over the years, they have developed to what we are seeing now in the stock market with investors buying shares from listed companies.

The following theories have been advanced in order to explain the dividends.

2.1.1 Dividend irrelevance theory

Miller & Modigliani (1961) argue that shareholder wealth is not affected by dividend decision and thus they are indifferent to dividend or capital gains. Additionally, shareholder wealth is affected by income generated by investment decisions not how it distributes the wealth. Investors calculate value of companies based on capitalized value of their future earnings and not dividends. Furthermore, M&M suggest that investors’ dividend policy is effectively the same because investors can create “homemade” dividends to adjust their portfolio in order to be in line with their preference. DIH is based on the assumption on perfect capital markets and changing this assumption may complicate this.

Miller & Scholes (1982) maintains that with the dividend irrelevance hypothesis. They test whether holders of shares with higher dividends yields receive higher risk-adjusted rates of return to compensate for heavier taxes on dividend payments than on long-term capital gains. The results second the DIH. Black & Scholes (1973) also found no significant relationship between stock return and dividend.

2.1.2 Agency theory

M&M’s perfect capital market assumption where there is no conflict of interest between managers and shareholders cannot hold with reality because managers may engage in activities like consuming excessive perquisites or over-investing in rewarding managers which is costly to shareholders (Malkawi, Rafferty, & Pillai , 2010). Jensen (1986) points out that firms that have

excess cash flow are prone to give managers flexibility to use funds for personal interest. Managers may enlarge the firm beyond the optimal point, increase compensation and may engage in negative NPV projects. This theory suggests that not only are firm's debt, dividend and insider ownership levels related but they are directly related to each other. High dividend payments can mitigate agency conflict as dividend can be used as substitutes for shareholder monitoring. Through distributing resources in form of cash dividends, internally generated cash flows are not available for the needs the company wants. Hence, companies are forced source financing from the capital market bringing them under severe scrutiny (Easterbrook, 1984). This contradicts the clientele hypothesis because investors may prefer high dividend paying stocks even if they are tax disadvantaged.

Additionally, another source of the agency problem that may influence dividend policy is the potential conflict between shareholders and bondholders because bondholders are the agents of shareholders taking wealth from bondholders. Thus, bondholders prefer to use constraints on dividend payment to secure claims.

2.1.3 Signaling Theory

In M&M the assumption is that managers and outsider investors have equal share and instantaneous access to the free and available information. However, managers have more information about company's future cash flows than individuals outside the company. Hence this gap may cause the intrinsic value of the firm to be unavailable to the market. Managers bridge this gap by providing information in the dividends. Even Miller & Modigliani (1961) suggest that if markets are imperfect share prices may respond to changes in dividends, thus dividend announcements may convey information about a firm's future earnings potential.

This information can be in form of stagnating dividends or also changing dividends. Therefore, an increase in dividend is good news projecting that there will be future profitability. Similarly, when there are dividend cuts, it is a signal for poor performance in the future and the company is likely to react unfavorably. For this theory to hold then, a firm that has poor prospects should not be able to send false information and have incentives to relay this information. Malkawi, Rafferty & Pillai (2010) identify the assumptions of this theory as; presence of asymmetric information between managers and shareholders, dividends contain information about current

and future cashflows and also increase in dividend will be perceived by the market as good news and the share price will increase.

This theory states that dividends convey information about firm's prospects, and therefore even if some clientele prefer capital gains, they may still prefer high dividend payouts contradicting the predictions of the tax induced clientele hypothesis. Litner (1956) in his paper, argues that managers will increase dividends if they believe that their earnings have increased permanently. Hence, an increase in dividends will therefore mean that they expect a long-run sustainable earning. Hence agreeing with the signaling hypothesis.

However not every market reacts the same to signaling. Some markets react more to signaling than other markets. Dewenter & Warther (2002) Compared the dividend policies of U.S and Japanese firms by examining the correlation between dividend changes and stock returns and found out that Japanese firms experience smaller stock price reactions to dividend omissions. Hence still in support of this theory. Randall (1983) after analysis of effect of unexpected dividend changes on values of common stock and bonds found an increase in common stock returns following the unexpected dividend increase.

Benartzi, Miachaely & Thaler (2012) tends to disagree with other authors, using a sample of 1025 firms listed in NYSE and the American Stock Exchange (AMEX) between 1979 and 1991 studied relationship between dividends and future earnings. Firms that increase or decrease their dividends in year 0 had an increase or decrease in earnings in year 0 and 1 but no further subsequent year. Hence partially disagreeing with the signaling theory.

2.1.4 Clientele Theory

M&M (1961) noted the pre-existing dividend clientele effect hypothesis (DCH) may play a role in determination of dividend policy in some certain circumstances. Portfolio choices of some individual investors may be influenced by certain market imperfections such as transaction costs and differential tax rates and hence they have a mix preference of capital gains and dividends. For both transforming to one state is not costless. This is because some investors may prefer a reduced cost giving rise to tax minimization induced clientele and transaction cost minimization induced clientele. Hence bringing rise to the name, "dividend clientele effect" where investors are attracted to certain dividend paying stocks. Although some firms may change their dividend

policy to attract some clientele, in a perfect market, all clientele are the same and hence firm valuation remains unchanged and therefore, dividend policy remains irrelevant.

Malkawi, Rafferty & Pillai (2010) identified that firms that pay high dividend can be associated with high growth industries. Retirees and income-oriented investors may be attracted towards high dividends. If firms issue dividend they may need to restore capital with new equity issues for re-investment. Hence, if issuing costs are large then companies retain investment other than sourcing for external financing. In practice, many firms continue to issue new debt and pay dividend suggesting that they are other factors affecting dividend policy even if issuing cost exist. Lewellen, Stanley, Lease & Gary (1978) looked at individual securities and found a significant concentration by personal tax circumstances hence they were in support with this theory.

However, Kalay & Michaely (2000) challenged this opinion. He argued that marginal tax rates of the investor cannot be inferred from the ex-dividend day price drop to dividend ratio. Hence, the observed positive relationship between the price-drop ratio and dividend yield may not necessary be as a result of the tax induced clientele hypothesis.

All the above theories try to explain the dividend behavior. However, the results remain inconclusive in accordance with (Black F. , 1976).

2.2 Determinants of Dividend Policy

Odia & Ogiedu (2013) refers to dividend payout are a function of many factors including legal constraints, earnings cash flow and liquidity, shareholders expectation, availability of profitable investment opportunities, shareholders tax bracket, management controls and contractual constraint, business cycles, government policies, attitude of management, shareholders income, age of corporation as well as stability of dividend payment period.

Findings from Nnadi, Wogboroma & Kabel (2013) indicate agency costs are the most dominant determinants of dividend policy. In their research studying 29 stock exchanges in Africa from 1998 to 2009 to find the determinants of dividend policy. The key determinants included profitability that lead to firms paying a higher dividend. Financial leverage had a negative effect on the dividend policy. Total shares held by insiders had a negative influence on level of dividend paid. Government control positively influenced the dividend dispensed. Age was also

an important factor with the intuition that mature firms with less growth and investment opportunities are likely to pay dividends indicating that financial leverage inversely affected dividend decisions.

Abdelsalam El-Masry & Elsegini (2008) studied the impact of board composition in 50 Egyptian companies. They found a strong support for the signaling model where there is a significant relationship between dividend policy and firm performance. Additionally, they provided partial support for agency theory because of the significant positive relationship between dividend and institutional ownership.

2.3 Board Composition aspects

2.3.1 Independent Non-executive Directors

According to corporate governance guidelines (2015) an independent non-executive director is one who is not associated to the market intermediary or a member of the market intermediary senior management. They should have no contract service with the intermediary or senior management of the intermediary. Uzun, Szewczyk & Vama (2004) examined how various board characteristics affected U.S. corporate fraud between 1978 and 2001. As the number of independent outside directors increased in the audit and compensation committees the corporate wrongdoings decreased. Hence having more independent directors on the board increase the efficiency of the board. In line with the agency theory boards with many independent directors can limit managerial discretion by monitoring their activities. Tarus (2016) contends that, they may not provide required effectiveness because they may be less knowledgeable and lack experience in effectively managing the company. They may also be over-involved in executive decision creating self-destructive friction.

In relation to its relationship with dividend payout, contradicting conclusions have been arrived to, for different economies. The study by Shehu (2015) identifies that independent directorship of the board influenced the dividend payout significantly negatively in Malaysia while (Abdelsalam, El-Masry, & Elsegini, 2008) found no significant relationship between dividend policy and board independence in Egypt.

2.3.2 Board Size

Jackling & Johl (2009) claims that board size is a very valuable determinant of corporate governance in a company. However, there are contradicting literature on the effect of board size. Klein (2002) asserts large boards help in specialization of the board which can lead to more effective monitoring. Enlarging the board size adds different skills and expertise in management which help in minimizing agency cost.

The others view is that large boards are less effective than small boards due to difficulties of coordinating large groups (Jensen M. C., 1993). However, Tarus (2016) argues that small boards are effective in monitoring management and they are more likely to influence the decision of the management.

Kiel & Nicholson (2003) shed new light by introducing an inverted “U” relationship between board size and market-based firm performance where addition of new members add to skill mix and performance of the board till it reaches a point where adverse dynamics of a large board outweigh the benefits brought about by the greater skill mix.

Abselsalam, El-Masry & Elsegini (2008) identifies no significant relationship between dividend policy and board size in Egypt.

2.3.3 Ownership and Dividend Policy

Rozeff (1982) being among the first the proposers of an existing relationship between board composition and dividend payout, he found that there existed a negative relationship between the ownership concentration and dividend payout. In line with, greater insider concentration resulted in better monitoring thus reducing the need to pay dividends. Jensen, Solberg & Zorn (1992) discuss that firms differ in many aspects such as ownership mechanisms, size, growth, profitability. Higher insider ownership result into choosing lower debt and dividend. The cost of insider ownership is normally borne by insiders who are forced to distribute a large portion of their wealth to the firms and in turn hold a maldiversified portfolio. Managerial share ownership aligns the interest of shareholders.

Shehu (2015) Examines the relationship between board characteristics and dividend payout in Malaysian public listed companies. The findings show that concentrated ownership influenced

dividend payout positively. Abdullah, Ahmad & Roslan (2012) identified that ownership concentration was found to positively impact dividend policy.

Malkawi, Rafferty & Pillai (2010) discuss that an implication for DCH is that a firm changing its dividend policy might also change the ownership structure.

2.3.4 Gender Composition and Dividend Payout

Over the years more and more emphasis has been put on women leadership. We can see more corporate boards and organizations adopting diversity in the previously male dominated boards. Immense research has been done on the effect of gender composition of the board on corporate governance. In this paper we focus on Dividend policy, a type of corporate governance strategy.

Che, Leung & Georgen (2017) studied the impact of gender composition of the board on the dividend policy using 1691 companies from 1997-2011. They find that there is a positive effect on dividends when they employed propensity score approach, instrumental variable approach, difference in differences approach to address endogeneity. Additionally, board gender composition significantly increases the dividend payout only for firms with weak governance suggesting female directors use dividend payout as a corporate governance strategy.

Not many authors have included this variable in board composition, yet it is an important characteristic of the board that has been seen to have an impact on dividend policy. This research paper seeks to bridge this gap by introducing this variable in a developing country, Kenya.

2.3.5 Governance and Dividend Policy

As Sawicki (2009) discusses that many firms responded to the financial crisis by cutting Dividends, because in the pre-crisis period dividend payout was negatively related to the firm size and governance. However, in the post crisis period there is a significantly positive relationship between governance quality and dividend payout. Additionally, country governance was important in determining dividend payout especially in countries where the law provided better protection to the investors. In Asia governance at firm level is associated with higher dividends after reforms were instituted in protecting the minority.

Subramaniam & Devi (2011) studied 300 highest capitalized Malaysian public listed companies to find the relationship between corporate governance and dividend policy. Although he found a negative significant association between dividend payout and growth opportunities and found no

significant relationship between dividend policy and board size the conclusion he made may only apply to large firms. The sample they obtained was also biased because they only took firm reporting details on all corporate variables of interest available.

Evident from the literature review a lot of concentration on impact of board composition dividend policy has been made in developed countries like Canada, Australia, Japan, Turkey, Korea, Hongkong, Singapore, Spain, Poland, United Kingdom as well as United States. Literature on developing countries is restricted to only Egypt, Malaysia, India, Nigeria, Pakistan, Indonesia, South Africa and now Kenya. Ikunda, Muiru & Kamau (2016) only focus on impact of corporate governance on dividend of manufacturing companies in Kenya. This research seeks to fill the gap by investigate all the non-financial firms listed on the Nairobi Securities Exchange. Hence finding the impact of board composition on dividend policy.

2.4 Conceptual framework

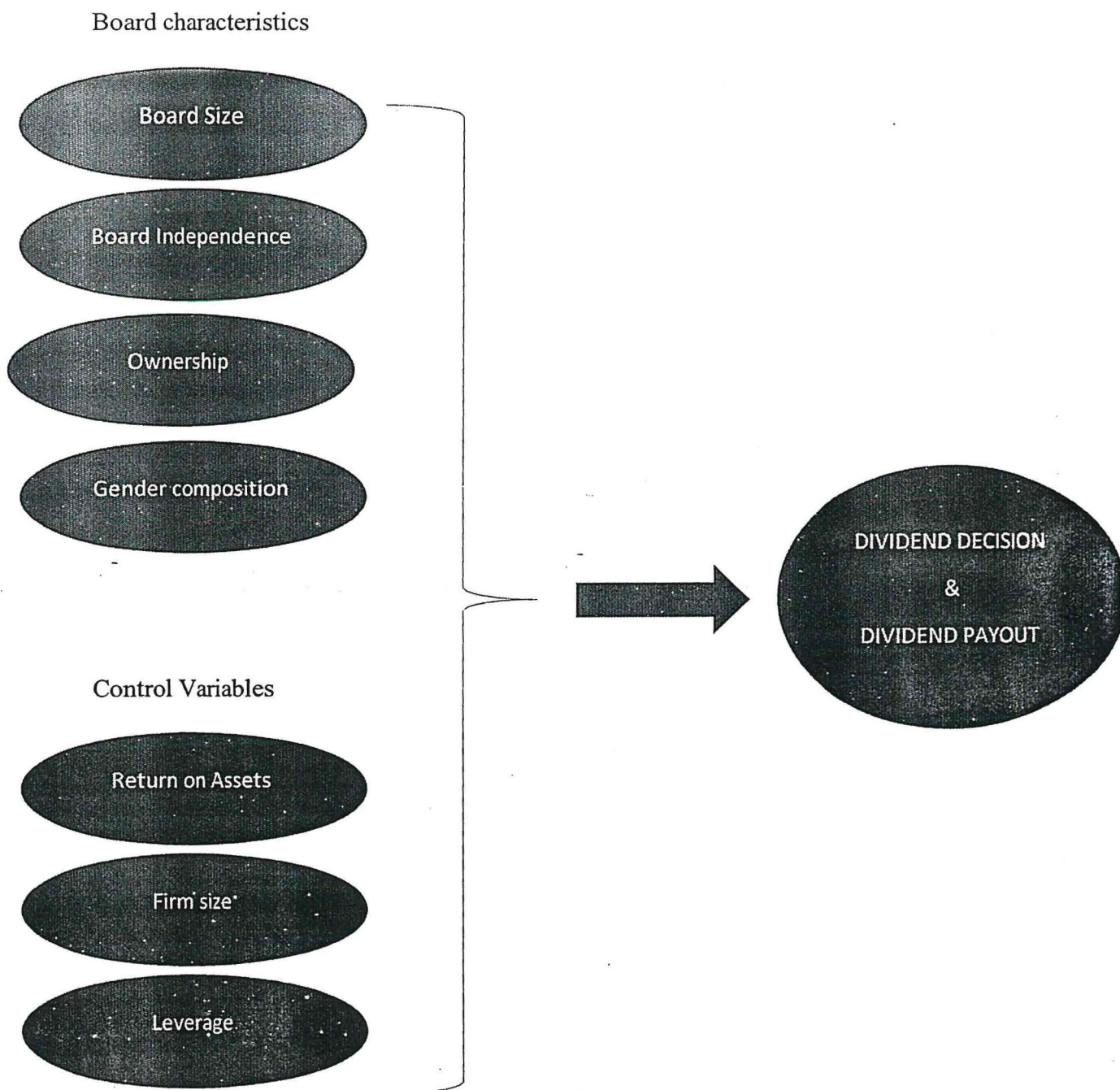


Figure 1 Conceptual Framework

3. Research Methodology

3.0 Introduction

This Chapter of the research project gives the research design that is used in the study. It also defines the research population and the sample size that the study is based on. The measures of data validity and reliability; data collection and analysis together with the research model in use are also detailed in this chapter.

3.1 Research Design

The main research design used in this paper is Correlation. Correlation analysis explains the strength of relationship between dependent and independent variables as strong, weak or very weak. Censored regression and descriptive statistics are also used to analyze the data. Descriptive statistics is used to explain mean, minimum and maximum values, calculates the standard deviation and number of observations in the sample firms used. The main purpose is just to obtain the characteristic of the sample. The censored regression explains to what extent the variables are related.

3.2 Population and Sampling

The population of this study comprised of a total of 61 listed companies on the Nairobi Securities Exchange for a 6-year period 2013-2018 in the following categories: agricultural, automobile and accessories, Commercial and services, construction and allied, energy and petroleum, Insurance, Investment, Investment services, Manufacturing and allied, Telecommunication and Technology. The study includes both dividend paying and non-dividend paying firms. This is because the exclusion of non-dividend paying sometimes leads to selection bias problem. All financial firms are excluded because they comply with special accounting practices and have special inspections by financial authorities that constrain the role of the board of directors.

3.3 Data Collection

The secondary data related to board characteristics are gathered from the individual company's published annual reports which are available on the Nairobi Securities Exchange website or the company websites. Data consists of Balance sheets, Income statements, Financial ratios and other relevant information. Firm selection was based on the following criteria; availability of annual reports from databases, external sources and company websites and hence this resulted in

focusing on listed companies. Companies that did not have available annual reports are excluded from the study.

3.4 Data analysis

3.4.1 Model

Dividend payout is considered as the dependent variable while board size, board independence, Ownership, Gender Composition, return on assets, Firm size and leverage are the independent variables.

The study used Tobit and Logit regression models due to nature of the selected data.

During this study the following research objectives were undertaken;

1. To establish whether there is a relationship between board composition and dividend payout on listed companies in the Nairobi Securities Exchange.
2. To establish whether there is a relationship between board composition and dividend decision on listed companies in the Nairobi Securities Exchange.

The first objective seeks to find the relationship between board composition and dividend payout. Hence, tobit model is used because the dependent variable dividend payout has values which are zero. Tobit regression is picked over OLS because of this censored variable. Dividend payout ratio may have two outcomes: (Pahi & Yadav, 2018) either zero in which case the firms did not give out any dividends or a positive value for firms that issued out dividends. Therefore, since the dividend payout can never be a negative the left censoring random effect Tobit model is applied. The specification of the model is as below:

$$DPO_{it} = \begin{cases} DPO_{it}^* = \alpha + \beta' X_{it} + \epsilon_{it} & \text{if } DP_{it} > 0 \\ = 0 & \text{if } DP_{it} \leq 0 \end{cases}$$

DPO_{it}^* is a latent variable that linearly depends on vector x_i of independent variables

is observed for values greater than 0 and censored otherwise.

X_{it} represents a vector of different independent variables used in the study.

ϵ_{it} represents the residual error of company 'i' at year 't' with $N(0, \sigma)$.

β' is a vector of unknown coefficients

The Tobit regression follows:

$$DPO_{it}^* = \alpha + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 OP_{it} + \beta_4 GC_{it} + \beta_5 ROA_{it} + \beta_6 FS_{it} + \beta_7 LV_{it} + \epsilon_{it}$$

α is the parameter co-efficient

DPO_{it}^* is the dividend payout of company i for time period t

BS_{it} is the board size for the company i for time period t

BI_{it} is the number of independent directors for company i for time period t divided by the total number for the company i for time period t

OP_{it} is the number of shares owned by the directors for company i time period t

GC_{it} is the number of females on the board for the company i for the time period t divided by the total number of directors for company i for the time period t

ROA_{it} is the net profit before interest tax of company i for the time period t divided by total assets of company i for the time period t

FS_{it} is the firm size of company i for the time period t

LV_{it} is the total debt of company i for the time period t divided by the total asset of company i for the time period t

ϵ_{it} error term of company i for the time period t

To ensure robustness a different measures of dividend payout was used and the regression was carried out one other time where the measure of DPO_{it}^* changed to represent another measure of Dividend payout.

Table 1: Dependent Variables

Variable name	Short name	Item from Financial Statement
Dividend Payout 1	DPO1	$\frac{\text{Dividend paid}}{\text{Net Income}}$
Dividend Payout 2	DPO2	$\frac{\text{Dividend paid}}{\text{Total assets}}$
Dividend Dummy Variable	DivDum	1 if firm 'i' pays dividend, otherwise 0

Table 1 Dependent variables Dividend Payout

The research study will conduct a hypothesis testing to examine the relationship between board composition and dividend payout. The following hypotheses are formulated for testing:

Table 2: Hypothesis Statements

Number	Variable	Null Hypothesis (H_0)	Expected Sign
01	Board size	There is no relationship between board size and dividend payout.	-/+
02	Board Independence	There is no relationship between board independence and dividend payout.	-
03	Ownership	There is no relationship between insider ownership and dividend payout.	+/-
04	Gender composition	There is no relationship between gender composition and dividend payout.	+
05	Return on Assets	There is a negative relationship between return on assets and dividend payout.	+
06	Firm size	There is a negative relationship between firm size and dividend payout.	+
07	Leverage	There is a positive relationship between leverage and dividend payout.	-

Table 2 Hypothesis Statements

To answer the second objective, which is to establish whether there is a relationship between board composition and dividend decision on listed companies in the Nairobi Securities Exchange;

From Al-Najjar & Hussainey (2009) and Pahi & Yadav (2018) we apply the random effect logit model to know the probability of a firm being a dividend payer or non-dividend payer. The decision of paying dividend is a binary decision thus appropriating the logit model. The logit regression model is:

$$P_{it} = E \left(DIVDUM = \frac{1}{X_{it}} \right) = \frac{1}{1 - e(-X_{it}^R \beta)}$$

DIVDUM represents a dividend dummy variable which equals 1 if a firm 'i' is dividend payer in year 't' or 0 otherwise. It shows a company's dividend decision whether or not to pay dividend.

$X_{it}^R\beta$ represents a matrix of parameters to be estimated where it varies from $-\infty$ and ∞ .

P_{it} range between 0 and 1 in our case it's a nonlinear function related to $X_{it}^R\beta$.

Therefore, the probability of a company to be a dividend payer is P_{it} and being a non-dividend payer is $(1-P_{it})$.

So that,

$$P_{it} = \frac{1}{1 + e^{-X_{it}^R\beta}}$$

Thus,

$$\frac{P_{it}}{1 - P_{it}} = \frac{1 + e^{X_{it}^R\beta}}{1 - e^{-X_{it}^R\beta}} = e^{X_{it}^R\beta}$$

$\frac{P_{it}}{1 - P_{it}}$ Represents the odds ratio in support of paying dividends calculated as probability of dividend payer over the non-dividend payer.

We then transform to the natural log,

$$\ln \text{DIVDUM} = \ln \left(\frac{P_{it}}{1 - P_{it}} \right) = X_{it}^R\beta$$

Thus, the Logit regression model:

$$\ln \text{DIVDUM} = X_{it}^R\beta + \epsilon_{it}$$

3.4.2 Variables

The firm specific control variables include a profitability measure which is the Return on Assets. Profitability is expected to have a positive significant impact on dividend policy. This is because profitability increases the firm's capacity to pay dividends (Pahi & Yadav, 2018). ROA is an accounting measure beyond management manipulation, and it shows a balanced sheet effect. According to Kowalewski, Stetsyak & Talavera (2007) this measure is not influenced by the liability structure of the corporation as it excludes interest payment and financial income.

Firm size can be looked at in two aspects. One, Firm size can be looked as a proxy for maturity. Large firms are well diversified and the further growth opportunities have been exhausted or they shrink. Therefore, they are more likely to use free cash flows to pay out dividend (Kowalewski, Stetsyak, & Talavera, 2007). Secondly, Large firms should have better access to external capital markets and be less dependent on internal funds to fund their investment projects. Hence, the large firms should be more likely to pay dividends than smaller firms (Adjaoud & Ben-Amar, 2010).

Leverage helps to mitigate information asymmetry and agency conflict (Odia & Ogiedu, 2013). Ajaoud & Ben-Amar (2010) suggest that leverage may influence dividend payout because the debt can be used to alleviate the free cash flow problem. Thus, the sign we expect is a negative sign.

3.5 Limitations of the study

Few variables that explained board composition were taken into account because only 4 variables representing board composition were considered. Also, the study period covers only 6 years. Future researches can seek to expand the study period as well as include more variables to represent board composition.

4. Findings

4.1 Descriptive Analysis

The descriptive analysis was done in two stages. The first stage represented by Table 3 involved generally looking at the whole data set. The second stage represented by Table 4, sought to compare the dividend paying firms and non-dividend paying firms in terms of observations, mean, maximum, standard deviation, skewness and kurtosis.

Table 3: Descriptive Table for the whole data set

	Obs	Mean	Minimum	Maximum	Standard Deviation	Skew	Kurt
Female Directors	174	1.8506	0	5	1.5731	0.3551	1.9036
Independent Directors	174	6.6091	3	14	2.6981	0.7091	3.0168
Board Size	174	9.2931	4	17	3.227	0.4828	2.3452
Fraction Independent Directors	174	0.7101	0.375	0.923	0.1338	-0.7825	2.8185
Total Company shares	174	1960000000	1200000	40100000000	7290000000	4.9480	25.9629
Director Ownership	174	0.6292	0	0.9835	0.1582	3.1586	13.7068
Gender Composition	174	0.1841	0	0.7143	0.1541	0.5983	3.1212
Total Assets	174	41100000000	321000000	379000000000	80800000000	2.7678	10.1239
Net Income Before Tax	174	3000000000	-29700000000	79900000000	11200000000	4.0301	26.2233
Net Income After Tax	174	1900000000	-26200000000	55300000000	8070000000	3.2063	23.2905
ROA	174	0.0797	-0.6426	0.7452	0.1836	0.25849	5.8979
Total Liability	174	25400000000	16300000	272000000000	58100000000	2.8196	9.8939
Dividend per share	174	2.9511	0	40	5.3427	3.4486	18.9762
Total Dividend	174	1510000000	0	44000000000	5630000000	5.6567	36.8021
Firm Size	174	9.9923	8.5064	11.579	0.7567	0.1856	2.5561
Leverage	174	0.4794	0.0379	3.7218	0.437	4.4186	30.4701
Dividend Payout	174	0.239	-1.1731	2.7235	0.3485	2.2593	18.3855

Table 3 Descriptive table for the whole data set

The average dividend payout ratio for the 29 listed firms is low at 0.239 with a minimum ratio of -1.1731 and a maximum of 2.7235. The mean dividend per share issued is 2.9511 with a range of

0-40. The average size of the board is 9.2931 with a minimum of 0 and a maximum of 17. Independence ratio in the board is high averaging at 71% ranging from 37.5% to 92.3%, which shows many companies have adapted into having many independent directors. The average number of females on the board is 18.41% with a minimum of 0 to a maximum of 71.43%. The average share ownership ranges from 0 to 98.35% with a minimum of 62.92%. The companies have a return on asset ratio average equal to 0.0797 with a maximum of 0.7452 and a minimum of -0.6426. This shows that the return on assets in Kenya is quite low, and of most recently firms have been performing badly. Firms are averagely leveraged with a mean of 0.4794, a minimum of 0.0379 and a maximum of 3.7218.

Table 4: Comparison Descriptive Table

Table 4 Comparison of Dividend Payers and non-Dividend Payers

	Obs	Mean	Minimum	Maximum	Standard Deviation	Skew	Kurt
Female Directors	*128 **46	*1.8359 **1.8913	*0 **0	*5 **5	*1.6010 **1.5089	*0.3501 **3.82378 8	*1.8546 **2.055853
Independent Directors	*128 **46	*6.8125 **6.0434	*3 **3	*14 **12	*2.5525 **3.0254	*0.8946 **0.5859	*3.6662 **1.8949
Board Size	*128 **46	*9.5468 **8.5869	*4 **4	*17 **16	*3.1344 **3.4096	*0.5298 **0.5149	*2.4255 **2.1310
Fraction Independent Directors	*128 **46	*0.7150 **0.6965	*0.4285 **0.375	*0.8888 **0.9230	*0.1204 **0.1661	*-0.6424 **0.7719	*2.4700 **2.4568
Total Company shares	*128 **46	*2360000000 **861000000	*1200000 **1200000	*4010000000 **6590000000	*8440000000 **1380000000	*4.2172 **2.8573	*18.9809 **11.953 6
Director Ownership	*128 **46	*0.0471 **0.1069	*0 **0	*0.7439 **0.9834	*0.1353 **0.2044	*3.4437 **2.4576	*14.7650 **9.4867
Gender Composition	*128 **46	*0.1753 **0.2085	*0 **0	*0.7142 **0.625	*0.1483 **0.1682	*0.4593 **0.7889	*2.8203 **3.2518
Total Assets	*128 **46	*3770000000 0 **5060000000 00	*382000000 **321000000	*379000000000 **37700000000 0	*74200000000 **97300000000 0	*2.9612 **2.2998	*11.3728 **7.4003
Net Income Before Tax	*128 **46	*4770000000 **1940000000	*-352000000 **970000000	*79900000000 **1150000000	*11900000000 **7100000000	*4.4974 **2.0131	*24.7052 **9.1656
Net Income After Tax	*128 **46	*3310000000 **2000000000	*2810000000 **2620000000	*55300000000 **9060000000	*8140000000 **6480000000	*4.5085 **2.3391	*24.9176 **9.3287
ROA	*128 **46	*0.1402 **0.0887	*-0.0420 **0.6426	*0.7452 **0.4337	*0.1440 **0.1777	*1.9950 **0.1853	*7.2055 **4.7590
Total Liability	*128 **46	*2070000000 00 **3870000000 00	*75100000 **163000000 0	*272000000000 **27200000000 0	*51200000000 **73100000000	*3.4833 **1.8085	*14.4624 **4.8144
Dividend per share	*128 **46	*4.0116 **0	*0.1 **0	*40 **0	*5.8817 **0	*3.0214 **0	*15.2259 **0

The director ownership percentage is higher in non-dividend paying firms at an average of 10.69% as compared to that of a dividend paying firm which has an average of 4.71%. The dividend paying firms have a range of 0 to 74.39% and non-dividend paying firms have a range of 0 to 98.34% ownership.

The average profit of non-dividend paying firm is negative while that of dividend paying firms is positive. The range of net income before tax for a dividend paying firm is -352 million Kenya shillings to 79.9 billion Kenya shillings while that of a non-dividend paying firm is -9.7 billion Kenya shillings to 115 million Kenya shillings. Hence, from the data we can see that most firms making losses opt out of paying dividend.

The average profit of non-dividend paying firm is negative while that of dividend paying firms is positive. The range of net income before tax for a dividend paying firm is -352 million Kenya shillings to 79.9 billion Kenya shillings while that of a non-dividend paying firm is -9.7 billion Kenya shillings to 115 million Kenya shillings. Hence, from the data we can see that most firms making losses opt out of paying dividend.

Dividend paying firms when compared with non-dividend paying firms have a larger size of the board averaging at 9.5468 while that of a non-dividend payer is 8.5869. Therefore, this suggests that companies with more directors on the board pay a higher dividend.

The total number of independent directors in a dividend paying firm averages at 6.8125 while the average number of independent directors in a non-dividend paying firm is 6.0434. This shows us that dividend paying firms have a larger number of non-executive directors who influence the dividend decision in the company.

From our sample of 29 companies, dividend paying companies formed a large percentage of the findings with 128 observations being dividend payers and 46 observations coming from non-dividend payers. The mean female representation on the board showed a larger presence in non-dividend paying firms than dividend paying firms. The gender composition average in dividend paying firms was 0.1753 and that of non-dividend payers was 0.2085. Thus suggesting, more women on the board lead to payment of a lower dividend.

	*Dividend paper				**Non-dividend payer			
Total	*128	**46	**0	*2400000	*128	**46	**0	*26.8820
Dividend	*10.0564	**9.8139	**8.5064	*8.5823	*11.5790	**0.6506	**0	*4.7993
Firm Size	*128	**46	**10.0564	*8.5823	*11.5790	**0.6506	**0	*2.8602
Leverage	*128	**46	**0.4038	*0.0378	*3.4076	**0.3346	**5.7727	*51.8586
Dividend Payout	*128	**46	**0.3250	*-1.1731	*2.7235	**0.3705	*1.949874	*17.4306
			**0	**0	**0	**0	**0	**0

The return on assets in a dividend paying firm is higher than that of a non-dividend paying firm. The mean return is 14.02% for a dividend paying company while a firm not paying dividend has a mean return which is negative, -8.87%.

Additionally, firms paying dividends are larger than firms not paying dividend. This was evidenced by the log of assets where the value of a dividend paying firm is 10.0564 while that of a non-dividend paying firm is 9.8139.

As expected, the firms that do not pay dividend are more highly leveraged than the firms that pay dividend. Non-dividend payers have a leverage ratio of 40.38% while those that pay dividend have a ratio of 68.97%.

4.2 Correlation Analysis

Table 5 and Table 6 shows the correlation of the covariates. It is a measure of the nature and degree of relationship between selected variables employed in the study. From the tables it can be observed that there is generally weak correlation between the dependent variables and independent variables. To confirm robustness Spearman correlation is used to confirm the direction of significant variables. The results from the spearman correlation are similar.

Table 5: Correlation between Dividend Payout and Independent Variables

	DPO1	BS	BI	OP	GC	ROA	FS	LV
DPO1	1.0000							
BS	0.3232*	1.0000						
BI	0.0999	0.0223	1.0000					
OP	0.0238	-0.1084	0.3354*	1.0000				
GC	0.2026*	0.2823*	-0.2103*	-0.0689	1.0000			
ROA	0.2189*	0.0150	0.0918	0.0738	-0.0157	1.0000		
FS	0.0574	0.7096*	0.0379	-0.1231	0.0798	0.1105	1.0000	
LV	-0.2365*	0.0889	-0.0154	0.0431	0.1689*	-0.3201*	0.1871*	1.0000

Table 5 Pearson's Correlation matrix for Dividend payout and Independent Variables

The Pearson's correlation matrix (Table 5) shows the degree of correlation between independent variables as low with an exception of the correlation between firm size and board size being strong (0.7096), dividend payout and board size being moderate(0.3232) and ownership percentage and board independence also medium(0.3554). The correlation is within a range of 0.0157-0.7096 is absolute terms hence there is no multicollinearity. This is accordance with

Bryman & Cramer (2011) who state that multicollinearity is present if the variables coefficient is equal to 0.8 or greater. The VIF was also used to confirm the results of no multicollinearity. Dividend payout has a significant positive correlation with board size, gender composition and return on assets. This implies that boards with more women pay a higher dividend. Additionally, the boards with more members pay a higher dividend. However, a negative significant relationship exists between dividend payout and leverage. The highest correlation is the relationship between board size and dividend payout which is 0.3232 which is a moderate correlation.

Table 6: Correlation between Dividend Decision and Independent Variables

	DIVDUM	BS	BI	OP	GC	ROA	FS	LV
DIVDUM	1.0000							
BS	0.1315	1.0000						
BI	0.0610	0.0223	1.0000					
OP	-0.1672*	-0.1084	0.3354*	1.0000				
GC	-0.0955	0.2823*	-0.2103*	-0.0689	1.0000			
ROA	0.5517*	0.0150	0.0918	0.0738	-0.0157	1.0000		
FS	0.1417	0.7096*	0.0379	-0.1231	0.0798	0.1105	1.0000	
LV	-0.2893*	0.0889	-0.0154	0.0431	0.1689*	0.1689*	0.1871*	1.0000

Table 6 Pearson's Correlation matrix for Dividend Decisions and Independent Variables

The Pearson's correlation matrix (Table 6) shows the degree of correlation between the independent variables as low with an exception of the correlation between firm size and board size being strong (0.7096), dividend decision and return on assets as large(0.5517) and ownership percentage and board independence also medium(0.3554). There is also absence for multicollinearity with the correlation all being less than 0.8 ranging from 0.0154-0.7096. Dividend decision has a significant positive correlation with return on assets. However, a negative significant relationship exists between dividend decision and ownership percentage as well as leverage. Hence, this implies that the more the ownership by directors the less the more likely it is to be a dividend non-payer.

4.3 Regression Analysis

In both models, board size, return on assets and firm size are found to be statistically significant for the 29 non-financial firms.

4.3.1 Tobit Regression

To establish whether there is a relationship between board composition and dividend payout on listed companies in the Nairobi Securities Exchange a tobit regression is used. The data is first tested for suitability: a white test showed that the data is homoscedastic as shown by Table 14. The data is then adjusted to make it normally distributed. Thus, these tests validate the use of Tobit regression in this model.

The results for the Tobit regression are as follows;

Table 7: Tobit Regression

<i>DPO1</i>	<i>Coefficient</i>	<i>Std Error</i>	<i>t</i>	<i>P> t </i>
<i>BS</i>	.0600017	.012833	4.68	0.000
<i>BI</i>	.2637254	.2306678	1.14	0.255
<i>OP</i>	-.127105	.1952805	-0.65	0.516
<i>GC</i>	.1935548	.2018818	0.96	0.339
<i>ROA</i>	.6846279	.1773041	3.86	0.000
<i>FS</i>	-.1227786	.056534	-2.17	0.031
<i>LV</i>	-.2909525	.0879764	-3.31	0.001
<i>Constant</i>	.7048527	.5156035	1.37	0.173
<i>LR chi2(7)</i>	66.63			
<i>Pseudo R2</i>	0.3030			
<i>Log likelihood</i>	-76.636957			

Table 7 Tobit Regression

The Likelihood ratio (LR) Chi-Square test that at least one of the predictor's regression coefficient is not equal to zero at 7 degrees of freedom. The Prob>chi2 when compared to the small p-value from the null. The null that the probability of obtaining this chi-square statistic (66.63) or one more extreme if there is in fact no effect of predictor variables is rejected. This helps us conclude at least one of the regression coefficients in the model is not equal to zero.

The significant variables at $p < 0.05$ are Board size, ROA, firm size and leverage. The null is rejected because the coefficients are statistically different from 0. If a company was to increase the board size by one point the expected dividend payout would increase by 0.06 points holding other variables constant. If the ROA increased by 1-point then the dividend paid out will increase by 0.6846 points. If the size of the firm increased by 1-point then the dividend payout will decrease by 0.1227 points. Also, if the leverage increased by 1 point then the dividend payout will decrease by 0.2909 points. If all the predictor variables in the model are evaluated at 0 then the predicted dividend payout would be 0.7048 points.

Board Independence and dividend payout have an insignificant positive relationship, where an increase in board independence by 1- point increases dividend payout by 0.2637. Ownership percentage has a $p > 0.05$ thus the coefficient is insignificant even if - point increase in ownership leads to a 0.1271 points decrease in dividend payout. Gender composition has a p-value of 0.339 which is above the significant level of 0.05. Hence, even if 1-point increase in females on a board leads to an increase in 0.1935 dividend payout it is insignificant.

Using DPO2 to test for robustness, the model confirms that Board size, ROA and Leverage are still significant at the 5% confidence interval as shown in Table 13.

4.3.1 Logit Regression

To establish whether there is a relationship between board composition and dividend decision on listed companies in the Nairobi Securities Exchange, the logit regression is used.

First, the data undergoes diagnostic checks to ensure that the assumptions of the logit regression hold. The first assumption states that the outcome is a binary or dichotomous variable. DivDum which is the dependent variable is binary where it is 1 when a company pays dividend and 0 when a company does not pay dividend. By testing the residuals, there existed neither significant outliers nor highly influential data points. Also, there is a linear relationship between the logit of the outcome and the predictor variable. Table 6, shows the output of the Pearson correlation which helps to justify there exists no multicollinearity.

The results for the Logit regression are as follows;

Table 8: Logistic Regression

<i>DIVDUM</i>	<i>Odds Ratio</i>	<i>Std Error</i>	<i>z</i>	<i>P> z </i>
<i>BS</i>	1.620125	.2550083	3.07	0.002
<i>BI</i>	36.14322	81.01447	1.60	0.109
<i>OP</i>	.0002318	.0004652	-4.17	0.000
<i>GC</i>	.2668941	.529204	-0.67	0.505
<i>ROA</i>	1.18e+11	6.02e+11	5.02	0.000
<i>FS</i>	.2698743	.1549384	-2.28	0.023
<i>LV</i>	1.359325	1.196368	0.35	0.727
<i>Constant</i>	1295.945	6003.029	1.55	0.122
<i>LR chi2(7)</i>	108.07			
<i>Pseudo R2</i>	0.5377			
<i>Log likelihood</i>	-46.461253			

Table 8 Logistic Regression

The null hypothesis that the probability of obtaining the chi-square statistic 108.07, if there is no effect of the independent variables taken together on the dependent variable is rejected. This is because the p-value compared to the critical value, 0.05 is less hence making the overall model statistically significant.

The significant variables from the model are board size, ownership percentage, ROA and firm size. For 1 unit increase in board size, there is a 1.6201 increase in the log odds of the company paying dividend, holding other variables constant. Additionally, for every 1 unit increase in share ownership by directors we expect a 0.00023 increase in log-odds of being a dividend paying firm. A 1 unit increase in firm size, there is a 0.2698 increase in log odds of being a dividend payer.

Board Independence, gender composition and leverage are found to be statistically insignificant. Even if a 1 unit in board independence leads to a 36.14 increase in log odds that the company is a dividend payer, the p-value is greater than the critical value $0.109 > 0.05$, hence it is insignificant. One unit increase in female representation on the board leads to a 0.2668 increase in log odds of being a dividend paying company. However, the p-value value is greater than the critical value and hence the variable is found to be insignificant. The leverage ratio is insignificant because the p-value is greater than 0.05.

Moreover, the percentage of the model correctly specified is 86.21% as shown by table 9.

Table 9: Test if the model is correctly Specified

Classified	True		Total
	D	-D	
+	120	16	136
-	8	30	38
Total	128	46	174

Classified positive if predicted $\Pr(D) \geq 0.5$

True D defined as DIVDUM !=0

Sensitivity	$\Pr(+ D)$	93.75%
Specificity	$\Pr(- \sim D)$	65.22%
Positive predictive value	$\Pr(D +)$	88.24%
Negative predictive value	$\Pr(\sim D -)$	78.95%
False + rate for true $\sim D$	$\Pr(+ \sim D)$	34.78%
False - rate for true D	$\Pr(- D)$	6.25%
False + rate for classified +	$\Pr(\sim D +)$	11.76%
False - rate for classified -	$\Pr(D -)$	21.05%
Correctly classified		86.21%

Table 9 Table showing how much of the model is correctly specified

Then a link test was performed to determine whether the equation above was properly specified and therefore, no addition of independent variables should be significant above chance. Based on our results the model passed the link test and hence no additional variables should be added to the model. Results are shown on Table 16.

The model was then tested for the goodness of fit using the Hosmer and Lemeshow's goodness of fit test as shown below.

Table 10: Hosmer and Lemeshow's goodness of fit test

Number of observations	174
Number of groups	10
Hosmer-Lemeshow $\chi^2(8)$	2.65
Prob> χ^2	0.9543

Table 10 Test of goodness of fit

The results of the test show that the p-value is greater than 0.05 hence showing that the model properly fits the data.

5. Discussion

5.1 Summary

The present study applied both panel Tobit with left censoring and the Logit model to find the relationship between dividend policy by the companies and board characteristics. The sample was made up of 29 non-financial firms listed in Kenya from 2013-2018. The board characteristics included board size, board independence, gender composition, director ownership in the company and gender composition. Also, other control variables like ROA, firm size and leverage were used. From the estimated models it is found that a board size is significant at a critical value of 5% in the Tobit model. In the logit model board size and ownership were positively significant at the same critical value. For the Tobit regression all control variables were found to be significant, however, in the logit regression only firm size and ROA were found to be significant.

5.2 Conclusion

Board size is seen to be a significant variable from both the regression analysis and correlation analysis as reported by other authors; (Pahi & Yadav, 2018), (Mansourinia, Emamgholipour, Rekabdarkolaei, & Hozoori, 2013) and (Ajathan, 2013). This provides supporting evidence for hypothesis 1. New empirical insight is obtained relating board characteristics and dividend policy in Kenya especially after change in corporate governance laws. The findings have an implication for a number of companies and shareholders. Large board sizes are associated with greater diversity where there is an increase in skill and knowledge about how to run the company. Hence, this leads to mitigation of the agency problem. A larger board size leads to diversification benefits and hence payment of a larger dividend in Kenyan firms. This study therefore contributes to literature on dividend policy as well as agency problem.

The other control variables leverage, firm size and ROA have the expected sign and impact on the dividend policy. The results are in line with the expectation from other studies. ROA being positively significant implies that the probability of a company paying dividend is higher if the company is more profitable. Additionally, the more profit a company has the higher the expected dividend amount. These findings are similar to (Pahi & Yadav, 2018).

Firm size has a positive significant impact on the dividend policy. A larger company proxied by the log of total assets has a higher probability of paying dividend than a smaller company.

According to Pahi &Yadav (2018) the larger the company, the more the company is under scrutiny pushing them to perform better. Thus, in the end they have larger profits that result into them paying higher dividends. Other authors with the same findings include: (Naceur, Goaid, & Belanes, 2006) who studied the Tunisian stock market from 1996-2002, (Maladijan & Khoury, 2014) who studied the listed banks in Lebanon and (Redding, 1997).

The findings for the logit regression are consistent with Shehu (2015) regarding director ownership, which rejects the third hypothesis. Abdullah, Ahmad & Roslan (2012) report the same findings. Hence, this infers that when directors know they have stake in a company they will choose to share in the dividends. As much as it is for selfish interest, all shareholders benefit from this decision. This can even motivate the directors to steer the company in the right direction, resulting into the company making higher profits. If the company has a higher income then they are more likely to pay a higher dividend.

The findings show no support for the second and fourth hypothesis which states that there is a relationship between dividend policy and board independence and gender composition. Gender composition is insignificant in determining dividend payout. This is because many Kenyan companies have not adopted into having more females on their boards. There are still some companies till today that have no women on their board and hence the impact of women influence on dividend policy is made small.

Since the independent director variable is insignificant, this means that the non-executive directors do not add economic value to firms in Kenya. The same results were found for Nigeria (Akhalumeh, Ohiokha, & Ohiokha, 2011).

5.3 Limitations and Recommendations

Further, the evidence provided by this paper offers theoretical and empirical insights for future studies. The theoretical aspect may be improved by the use of other theories like the stake-holder and resource dependency theories in examining factors influencing dividend payout. Researchers may also look into expanding the empirical framework to more countries in Africa by examining the impact of board characteristics on dividend policy in international government environments.

This study has some limitations. The first being, limiting our study to only board characteristics. Subsequent studies may consider impact of other corporate governance mechanisms on dividend

policy. There are more factors that dictate the dividend policy adopted by a company. Future researches may also look at macro-economic variables that may impact dividend decision.

Additionally, due to the labor-intensive nature of manually collecting the required data and lack of availability of financial reports by Kenyan firms. The data is restricted to 29 firms for 6 years. This led to having a small data set of 174 observations. Future studies can seek to extend the sample size and include other East African countries like Tanzania, Uganda, Rwanda, Ethiopia, among others. This will lead to a more robust result of the impact of board characteristics on dividend policy.

Moreover, data used in the study was collected primarily from secondary archival databases and future studies can improve the research findings by conducting in depth face-face interviews and qualitative analysis to gain further knowledge on factors that may affect dividend payout. A board of directors normally go through a long process of deliberating whether they will pay dividend and if they pay how much it will be. Hence, it is important to know these factors.

Unique characteristics found in firms in some certain industries should be investigated because there are different operating environments and different operational structures. Hence, this will shed light on why some industries pay higher dividend than others.

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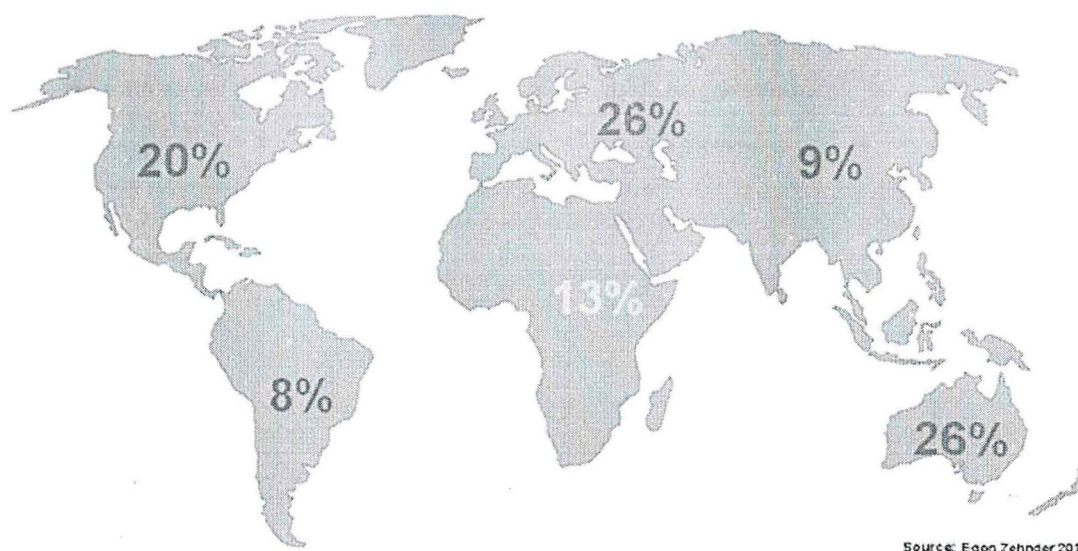
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Appendices

% Board position held by women globally



Source: Egon Zehnder 2016

Figure 2 Percentage of women in boards globally

Table 11: Independent Variables

Variable name	Short name	Item from Financial Statement
Board size	BS	Number of Directors in the board
Board independence	BI	$\frac{\text{Number of Independent Directors}}{\text{Total Number of Directors}}$
Ownership	OP	Number of shares owned by the directors
Gender Composition	GC	$\frac{\text{Number of Females on the board}}{\text{Total number of Directors}}$

Table 11 Independent variables

Table 12: Control Variables

Variable name	Short name	Item from Financial Statement
Return on Assets	ROA	$\frac{\text{Net Profit before interest and Tax}}{\text{Total Assets}}$
Firm Size	FS	Log of assets
Leverage	LV	$\frac{\text{Total debt}}{\text{Total Assets}}$

Table 12 Control Variables

Table 13: Robustness check For Tobit Regression

<i>DPO2</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t</i>	<i>P> t </i>
<i>BS</i>	.0059811	.0016827	3.55	0.000
<i>BI</i>	.0140284	.0309636	0.45	0.651
<i>OP</i>	-.0090007	.025464	-0.35	0.724
<i>GC</i>	.0745205	.0268723	2.77	0.006
<i>ROA</i>	.2252219	.0248885	9.05	0.000
<i>FS</i>	-.0080102	.0075788	-1.06	0.292
<i>LV</i>	-.0398667	.0120615	-3.31	0.001
<i>Constant</i>	.020978	.069993	0.30	0.765
<i>LR chi2(7)</i>	126.16			
<i>Pseudo R2</i>	-0.4875			
<i>Log likelihood</i>	192.48069			

Table 13 Robustness test for Tobit regression

Table 14: Table Showing Homoscedasticity

White's test for Ho: Homoskedasticity

Ha: unrestricted Heteroskedasticity

<i>Source</i>	<i>chi2</i>	<i>df</i>	<i>p</i>
<i>Heteroskedasticity</i>	31.91	27	0.2353
<i>Skewness</i>	6.55	6	0.3641
<i>Kurtosis</i>	1.42	1	0.2337
<i>Total</i>	39.88	34	0.2248

Table 14 Test for Heteroscedasticity

Table 15: Logit Regression

<i>DIVDUM</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>z</i>	<i>P> z </i>
<i>BS</i>	.4825031	.1574004	3.07	0.002
<i>BI</i>	3.587489	2.241485	1.60	0.109
<i>OP</i>	-8.369563	2.006553	-4.17	0.000
<i>GC</i>	-1.320903	1.982824	-0.67	0.505
<i>ROA</i>	25.49795	5.077223	5.02	0.000
<i>FS</i>	-1.309799	.5741131	-2.28	0.023
<i>LV</i>	.3069884	.8801194	0.35	0.727
<i>Constant</i>	7.166996	4.632162	1.55	0.122
<i>LR chi2(7)</i>	108.07			
<i>Pseudo R2</i>	0.5377			
<i>Log likelihood</i>	-46.461253			

Table 15 Logit regression with coefficients

Table 16: Test whether to add Independent Variables

<i>DIVDUM</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>z</i>	<i>P> z </i>
<i>_hat</i>	1.062889	.2296495	4.63	0.000
<i>_hatsq</i>	-.0341896	.0524056	-0.65	0.514
<i>_cons</i>	.0391007	.3115227	0.13	0.900
<i>LR chi2(2)</i>	108.35			
<i>Pseudo R2</i>	0.5390			
<i>Log likelihood</i>	-46.325021			

Table 16 Link Test