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**The Relationship between Executive Compensation and Earnings
Management among Non-Financial Companies Listed on the Securities
Exchange in East Africa**

Ger Carol Owenga

066451

**A Research Thesis submitted to the School of Management and
Commerce in partial fulfillment of the requirements for the degree of
Master of Commerce**

June, 2018

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

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Approval

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ABBREVIATIONS AND ACRONYMS

AEM	Accrual-based Earnings Management
GAAPs	Generally Accepted Accounting Principles
IAASB	International Auditing and Assurance Standards Board
IFRSs	International Financial Reporting Standards
REM	Real Earnings Management

ABSTRACT

This research study aims at determining the extent of earnings management among non-financial companies listed on the securities exchange in East Africa and consequently, its relationship to executive compensation. The study was conducted among 41 non-financial companies listed during the period 2002-2016. The study used both primary and secondary sources of data whereby secondary data gathered from annual reports were used to provide empirical evidence which aimed at determining the extent of earnings management and its relationship to executive compensation. Primary data obtained through the use of questionnaires given to respondents were used to assess the perception of industry players on the extent of earnings management and its relationship to executive compensation. Pooled OLS regression was used to analyze the secondary data whereas the primary data were analyzed using descriptive statistics and triangulated to secondary data findings. This study finds that a positive significant relationship exists between executive compensation and accrual-based earnings management, however a negative and significant relationship exists between executive compensation and real earnings management. Investors are encouraged to exercise caution when deciding how to remunerate executives. Researchers and scholars are encouraged to research on better models to estimate earnings management. The study incorporated both accrual-based and real strategies in studying the relationship between executive compensation and earnings management, providing evidence of the use of both strategies. A limitation of this study is that it focused on non-financial companies, therefore other researchers are encouraged to look into earnings management in financial companies.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The management of a company is charged with the responsibility to prepare and faithfully present financial statements that are free from material misstatement and error (IAASB, 2014). Financial statements of a company serve as one of the ways in which a company's performance can be evaluated as they provide a summary of financial transactions that occurred during the financial period (Nurdiniah & Herlina, 2015). IFRSs and GAAPs that are used in preparation of financial statements, give managers flexibility in exercising their judgment when it comes to selection of accounting methods, their application and changes over periods of time. Therefore, managers can improve the quality of financial statements using their knowledge. However, if managers use their discretion over accounting methods to influence the level and quality of earnings, it is possible for earnings management to occur (Zadeh, Salehi & Alaei, 2012).

Various scholars have attempted to define earnings management (El Diri, 2017; Healy & Wahlen, 1999; Ronen & Yaari, 2008). Healy and Wahlen (1999) define earnings management as when managers use their judgement in financial reporting to change financial reports in order to either mislead stakeholders about the performance of the firm or to influence the outcomes of contracts that are pegged on performance. Ronen & Yaari (2008) define earnings management as all the management action that lead to a failure to report “the true short term, value maximizing earnings” as known by management. This definition makes an addition to Healy and Wahlen (1999) in two ways. First, their definition gives a boundary between normal activities and what is considered earnings management. Second, not all earnings management is considered to be misleading. There is earnings management that is considered to have informational value to investors as normal earnings are distinguished from one time anomalies in order to avoid distortion of earnings. El Diri (2017) gives a definition that incorporates the conditions that allow managers to manipulate earnings. He defines earnings management as the use of management discretion on accounting standards to present earnings either downwards or upwards by “abusing some contracting deficiencies, stakeholders’ bounded rationalities, and information asymmetries.” This study takes earnings management to be all actions undertaken by

management in order to increase or decrease reported earnings, as this aspect seems to be consistent among all the definitions.

Managers can manage earnings using two ways. First, the desired level of earnings could be obtained through deviating from the normal business activities. This is referred to as real earnings management (REM) (Dechow & Skinner, 2000; Roychowdhury, 2006). This way of managing earnings could have a negative impact on the future economic performance of the firm because the aim is to boost only current period sales which could lead to negative consequences on future cash flows hence leading to subsequent poor performance. For instance, excessively using price discounts to increase sales could lead to customers to continuously expect such discounts in the future and this could to low future margins (Cohen et al., 2008; Roychowdhury, 2006) Secondly, we have accrual based earnings management (AEM) whereby reported income can be manipulated when managers have to book accruals for events that require discretion in accounting standards (Healy & Wahlen, 1998). Examples of these events are losses from bad debts, asset impairments and the salvage value of long-term assets. If these estimates are biased in order to affect the underlying true economic performance, AEM has been applied.

One way to control earnings management (by accounting techniques) is setting more rigorous Accounting standards. However, this may have the unwanted effect that manager's turn to real earnings management (Rahman et al., 2013). Therefore, the authors suggest that additionally, companies might want to look towards improving their corporate governance practices as they signal the potential for earnings management. Roman (2009) suggest that audit committee members should be aware of opportunities created by management in order to manipulate earnings either by taking advantage of timing of different transactions or making estimates.

Enron, Arthur Andersen and World Com are among some of the accounting scandals that have been reported within the last two decades and they have consequently had an effect on the trust that regulators have on financial statements. Subsequently, the quality of financial statements has been brought to question by regulators (Inaam, Khmoussi & Fatma, 2012). The global surveys on fraud conducted in 2013, 2014 and 2016 by Ernst & Young show evidence that pressure to meet financial targets are still very present among many businesses globally. The 13th Global Fraud Survey, conducted between December 2014 and January 2015, shows willingness by executives to justify certain activity when under pressure to

meet financial targets- 6% of executives respondents — including C-suite executives — are willing to justify misstating company financial performance while 46% of chief financial officer (CFO) respondents stated that one or more options from a list of questionable actions are justifiable (Ernst & Young, 2015). The 2016 survey results show that almost half of all finance team members interviewed stated that they would be prepared to engage in at least one form of unethical behavior to meet financial targets or safeguard a company's economic survival. 7% of finance team members below the CFO would misstate financial performance – nearly double the proportion of all respondents which stood at 4% (Ernst & Young, 2016). Regionally, the Ernst & Young's 2013 Europe, Middle East, India and Africa Fraud Survey, 53 per cent of managers believed their companies over-report their financial performance, driven by increased pressures to hit targets in an increasingly challenging business environment. Additionally, 79 per cent of Kenyan managers, representing East Africa, said their firms will be under pressure to deliver better results over the next one year (Ernst & Young, 2013). In 2015, the survey results showed that more than one in five senior managers have heard of early revenue recognition occurring in their company in the last year (Ernst & Young, 2015).

In Kenya, particularly, there have been incidences where big companies have collapsed or nearly collapsed and the management of those companies have subsequently been accused of mismanagement. At the heart of such scandals, the quality of financial reporting has been called to question, which points towards earnings manipulation. For instance, most recently, the Board of the Capital Markets Authority (CMA) has taken administrative action against the National Bank of Kenya (NBK) Board members and former Senior Managers who served at the Bank as at December 31, 2015 for the alleged misrepresentation of financial statements and embezzlement of funds at NBK (Capital Markets Authority, 2018). In 2012, CMC Motors directors were accused of recognizing undelivered vehicle sales as revenues and not capturing interest payments for cars sold on credit, thereby inflating its earnings (Herbling, 2014). Uchumi Chain of Supermarkets management was purported to have been misstating facts about its true position by manipulating its financial statements to an amount of Ksh.1.04 billion up to the year 2014. In 2015, Mumias Ltd. management was purported to have approved discounts and credit notes that led to price variations in excess of 243 million (Cytonn Investments, 2016). In Tanzania, Uganda, Rwanda and Burundi, there is lack of such records of incidences where earnings manipulation may have occurred. As a

result, there is scarcity of research on how much more earnings management there could be and to what extent.

Previous research that studied the relationship between earnings management and executive compensation, examines accrual-based earnings management. The focus might have been more towards AEM as it is easy to detect in comparison to REM since accruals are the principal product of GAAP (Beneish, 2001). There has been inconsistency in the findings on the relationship between executive compensation and accrual-based earnings management which could be attributed to the variables used in the study, context of the study or methodology used in the research. In terms of the contexts of the studies, different researchers have carried out their researches in different economic contexts. Some studies have been carried out in developed nations such as France (Hassen, 2014; Lakhali et al., 2014) USA (Kam, 2010; Li, 2017), China (Zhou et al., 2016), Australia (Sun & Hovey, 2013), Sweden (Andersson & Frisk, 2016) and the findings have been inconsistent in that some studies have found a positive relationship (Lakhali et al., 2014; Li, 2017; Kam, 2010) whereas some have found no significant relationship (Andersson & Frisk, 2016; Zhou et al., 2016) and negative relationship (Hassen, 2014). Studies that have been conducted in developing nations such as Iran (Karimi, 2014; Zadeh et al., 2012), Indonesia (Nurdiniah & Herlina, 2015) Kenya (Njogu, 2016) also show inconsistent results. In terms of variables used and how they are measured, different researchers have used different measures for executive compensation. First, different researchers have used different measures for executive compensation. Some researchers measured executive compensation as executive bonus and the findings show a positive relationship (Carter et al., 2005; Lakhali et al., 2014; Zadeh et al., 2012) whereas other researchers used CEO compensation and the findings show no significant relationship (Li, 2017; Zhou et al., 2016) and other researchers have used the total compensation paid to executives but the results were inconsistent in that others show a positive relationship (Kam, 2010; Shuto, 2007;) and others show a negative relationship (Hassen, 2014). Secondly, different researchers have used different models in measuring earnings management where there were different findings.

There are different methods of measuring accrual-based earnings management. Healy (1985) was the first to come up with a model to measure earnings management using discretionary accruals. He assumes that earnings management is practiced routinely every accounting period. Thus, he assumes that non-discretionary accruals is measured by the

variance in the normal levels of accruals from one year to the next. DeAngelo (1986) made an adjustment to Healy (1985) in that she estimated nondiscretionary accruals to be the variance between the total accruals measured in the current year and the total accruals in the prior year. The Jones model (1991) tries to incorporate the effect of changes in the economic environment on non-discretionary accruals. The Modified Jones model(1991) and the standard Jones model differ from each other in the aspect that changes in revenues are adjusted for the change in receivables in the event period. The Modified Jones model assumes that all changes in credit sales result from the use of earnings management. The industry model (1991) assumes that there are variations between different industries that are inherent to those industries. These variations in industries tend to affect working capital items. In order to make adjustments the industry model uses industry median values. The DD model propose including past, present and future cash flows (CF) as additional relevant variables in explaining nondiscretionary accruals, McNichols (2002) recommends that researchers combine the determinants from both the Jones and the DD models. The Augmented Jones Model (2011) posits to addresses a practical implementation issue in order to improve the “peek ahead” bias of DD accrual quality model. This study sought to use multiple models available in literature including: the original Jones 1991; the modified Jones 1995; Kasznik 1999, DD 2002, McNichols, 2002, Kothari 2005, Yoon 2006; the augmented Jones 2011.

More recent research on the relationship between executive compensation and earnings management has attempted to look at real earnings management strategies in addition to accrual-based earnings management (Zhou et al., 2016; Li, 2017). The incorporation of real earnings management could be because more recent research has shown that due to increased regulation, there seems to be a complementary relationship between the two strategies (Li, 2017) or sometimes there may be a substitution between the two strategies (Chan et al., 2014; Heide & Lim, 2016). There is however scarcity of research with regards to real earnings management strategies and consequently this research sought to add on to the body of knowledge by incorporating both accrual-based and real-earnings management in studying the relationship between executive compensation and earnings management.

1.2 Statement of the Problem

Within the last two decades there have been economic scandals such as Enron, Tyco, WorldCom and Satyam, just to mention a few, that have brought into question the credibility of financial reporting (Inaam, Khmoussi & Fatma, 2012). In these incidents, it has mainly been the investors specifically shareholders that have been greatly affected and have to bear the consequences. It is important to study the relationship between executive compensation and earnings management because most often when earnings are manipulated, it is the shareholders that suffer, and when they use earnings information to pay remuneration to management in terms of bonus, they are more likely to be misinformed.

The impact of earnings manipulation has been so severe that it has led to tightened regulation especially in more developed economies such as USA that put in place the Sarbanes-Oxley Act in order to protect investors of public companies from fraudulent financial activity (Carter et al., 2005). In East Africa, more specifically Kenya, there have been incidences where companies have collapsed or nearly collapsed and the management of those companies have subsequently been accused of mismanagement. In response to such corporate scandals, the Capital Markets Authority of Kenya in 2017 took administrative action against the National Bank of Kenya senior management for misrepresentation of financial statements and siphoning money out of the bank through an embezzlement scheme (Capital Markets Authority, 2018). A survey conducted by Ernst & Young between December 2014 and January 2015 reported that managers are willing to manipulate earnings in order to maximize their bonuses and up to 79% of managers agree that they would be under increased pressure to deliver good financial performance (Ernst & Young, 2015). More recently, the Institute of Certified Public Accountants of Kenya (ICPAK) has put in place guidelines that require disclosure of key audit matters to shareholders in a bid to improve investor protection.

In East Africa, various studies have been conducted in earnings management, more so emphasizing on the importance of corporate governance as a control measure of earnings management practice (Bulle, 2014; Chelogoi, 2017; Iraya et al., 2015; Outa, 2017; Waweru, 2018). However, there is scarcity of research within the East African region that examines executive compensation as motivation for earnings management. Within the international context, various studies have been done to study executive compensation as an incentive of

earnings management and the relationship between the two. However, there has been inconsistency in findings which in part can be attributed to the models used to measure accrual-based earnings management. There are studies that find a positive relationship (Kam, 2010; Lakhali et al., 2014; Li, 2017) while other studies find no significant relationship (Andersson & Frisk, 2016; Karimi et al., 2014; Zadeh et al., 2012; Zhou et al., 2016) and other studies find a negative relationship (Hassen, 2014). This study makes use of multiple-models in estimating accrual-based earnings management in order to make comparisons in findings and close the gap in inconsistencies. In addition to accrual-based earnings management, most recent research has attempted to study real earnings management practices in relation to executive compensation (Li, 2017; Zhou et al., 2016). However, these studies are few and consequently this research sought to add on to knowledge by studying both accrual-based and real earnings management strategies.

1.3 Research Objectives

The study sought to address the following objectives:

1. To establish the extent of earnings management among non-financial companies listed in East Africa.
2. To determine the significance of the relationship between executive compensation and earnings management among non-financial listed companies in East Africa.
3. To obtain perspectives of industry players on the extent of earnings management and its relationship to executive compensation among non-financial companies listed in East Africa.

1.4 Research Questions

The study sought to answer the following research questions:

1. What is the extent earnings management among non-financial companies listed in East Africa?
2. What is the significance of the relationship between executive compensation and earnings management among non-financial companies listed in East Africa?
3. What is the perspective of industry players on the extent of earnings management and its relationship to executive compensation among non-financial companies listed in East Africa?

1.5 Scope of the study

The study sought to determine the extent of earnings management and its relationship to executive compensation among non-financial companies listed on the securities exchange in East Africa for the period 2002-2016. The study also sought the perspective of industry players on the extent of earnings management and its relationship to executive compensation.

1.6 Significance of the study

This study will be useful to the following:

1.6.1 Investors

The study examined the extent of earnings management by non-financial firms listed on the securities exchange in East Africa. The findings will help future investors when making decisions as to whether to commit their funds in a company. The study also examined the relationship between executive compensation and earnings management. The findings of the study are expected to assist current investors, shareholders of companies, when they make decisions regarding paying bonuses to management.

1.6.2 Researchers and scholars

The study examined the relationship between executive compensation and earnings management. The study used multiple models in the examination of earnings management in an attempt to bridge the inconsistencies in research. Additionally, the study sought to add to the existing body of knowledge by incorporating real earnings management where scanty research has been done in relation to executive compensation. Further, the study sought the views of industry players in an attempt to better understand the extent of earnings management.

1.6.3 Policy makers and regulators

Through the examination of the extent of earnings management by non-financial firms listed on the securities exchange in East Africa, policy makers and industry regulators such as Capital Markets Authority can be able to monitor trends and patterns of the practice and consequently give regulations and guidelines to companies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents literature review on earnings management and its relationship to executive compensation. The chapter begins with a theoretical review that helps to inform the variables used in the study and to explain the relationship between the variables. Thereafter, there will be an empirical review of literature on the relationship between executive compensation and earnings management that will highlight the inconsistencies in literature. There will then be a discussion of various models used measuring earnings management, highlighting the strengths and weaknesses of the models. Finally, there will be presented the conceptual framework for the study.

2.2 Theoretical review

There are quite a number of theories that have been proposed in literature that guide the understanding of earnings management, including: positive accounting theory; agency theory and legitimacy theory. The positive accounting theory's bonus plan hypothesis posit that when managers' bonus is based on the reported earnings of a firm, the managers are motivated to engage in those accounting practices that will increase their remuneration. The agency theory suggests that management, as agents of shareholders are motivated by self-interest to maximize their own welfare to the detriment of the shareholders who are the principal in this agency relationship. The legitimacy theory posits that organization will openly disclose and report on those activities which it expects that society will want it to engage in. This is because there exists a social contract between the organization and society. This study is guided by the propositions of the Positive accounting theory and the Agency theory, because the two theories focuses on relations between various groups of individuals in the company, for instance in this study the focus was on the relationship between shareholders and executives.

2.2.1 Positive accounting theory

This theory was proposed by Watts and Zimmerman (1978). The authors try to provide an explanation as to why certain firms choose to use certain accounting practices and methods. The theory also tries to provide a forecast of methods used by certain firms. However, it does not prescribe which accounting methods a firm is to use. The positive accounting

theory highlights self-interest of the stakeholders of the firm as being the main reason as to why a firm may choose a certain accounting method (Colin et al., 2009; Setyorini & Ishak, 2012). For instance, there is an agency relationship between managers and the various stakeholders of the company such as shareholders and debt-holders. The stakeholders are only after ensuring that their stake in the firm in terms of wealth is protected. Therefore, the positive accounting theory tries to predict the accounting methods adopted by certain firms while considering the effect of these accounting practices on stakeholders' wealth.

The positive accounting theory has three hypotheses including the bonus plan hypothesis, the debt equity hypothesis and the political cost hypothesis. Using these three hypotheses Watts and Zimmerman (1978) attempt to explain and subsequently forecast whether a firm would use a particular accounting method or whether it would reject the particular method. Each one of these hypothesis represent different incentives that could explain the practice of earnings management. The bonus plan hypothesis posits that when managers' bonus is based on the reporting earnings of a firm, then the managers will choose those accounting methods and practices that will increase the reported income in that financial period, all other factors held constant. Managers are opportunists and they will take advantage of any opportunity thereof to maximize their own interest in form of wealth maximization. Subsequently, if they believe that a particular accounting method or practice will increase reported earnings, they will choose to use that particular accounting method or practice (Salah, 2011). This hypothesis posits a positive relationship between executive compensation and earnings management.

Previous studies have used this theory to explain the relationship between executive compensation and earnings management (Kam, 2010; Hassen, 2014; Lakhal et al., 2014; Njogu, 2016; Nurdiniah et al., 2015) and the findings suggested that there is a significant relationship. In this research, this theory was used to explain the opportunistic behavior of executives and why they may choose to employ certain accounting methods. The theory informed the dependent variable (earnings management) as a technique that management might employ to increase their compensation (independent variable) towards the fulfilment of their own self-interest. The findings of the study confirm a positive relationship between executive compensation and accrual-based earnings management, meaning that when executive compensation is based on the reported earnings of the firm, the executives will engage in earnings management practices to increase their compensation. However, the

findings suggest a negative relationship between executive compensation and real earnings management, meaning that when executive compensation is based on the reported earnings of the firm, the executives will not engage in earnings management practices to increase their compensation. This finding is inconsistent with the bonus plan hypothesis.

2.2.2 Agency theory

Agency as proposed by Jensen and Meckling (1976) defines a contractual relationship whereby one or more parties referred to as the principal transfers decision making rights to another party in order to perform a service on their behalf. The positive accounting theory uses agency relationship to explain the association between the firm and various stakeholders. For instance, an agency relationship exists between managers and shareholders whereby shareholders assume the role of principal while the managers are the agent. The shareholders delegate authority to the managers to act on their behalf in order to maximize their wealth. According to the agency theory, the firm is viewed as a set of contractual relationships among various principals and agents.

Individuals within an agency relationship have their own individual interests and objectives and will take advantage of any opportunity available in order to maximize their welfare. Therefore, agents may not always work to maximize their principal's welfare but their own. In cases where there is imperfect flow of information certain problems will arise. The agent may work contrary to the objectives of the contract or the agent may not put their best efforts into their work. Subsequently, conflict of interests arises between principal and agent and the principal is therefore forced to incur agency costs in order to minimize the agency problem (Fontrodona & Sison, 2006).

Previous studies have used this theory to explain the theoretical assumption of aligning the interests of executives with those of shareholders (Andersson & Frisk, 2016; Karimi et al., 2014; Lakhali et al., 2014; Njogu, 2016; Sun & Hovey, 2013). This study used this theory to explain the relationship between executives (agent) and shareholders (principal). The theory informed the dependent variable, earnings management as a form of agency cost. This may happen when managers prepare the company's financial statements in a way that presents a better picture of the company's financial affairs and as a result the shareholders rely on this information when making investment decisions, only to their own detriment. Therefore, earnings management is in fact related to agency theory because the managers can create agency costs (Davidson et al., 2004). The agency theory posits that when shareholders put

in place optimal contracts with executives whereby compensation package of executives are linked with shareholders' interests, then there is a higher likelihood of union of interests and reduced agency problems. Hence, the higher the pay the less opportunistic the executive would be and the less the likelihood that the executive will be inclined to manipulate company's results or to violate contracts that bind them with shareholders in order to satisfy their own interests. Failure to do this, the executive risks the possibility of losing their job and being (Hassen, 2014). Therefore, this theory posits a negative relationship between executive compensation and earnings management. Inconsistent with this theory, the findings of the study show a positive relationship between executive compensation and accrual-based earnings management, meaning that even with higher pay, executives are more opportunistic and do not align their interests with that of shareholders. However, the findings suggest a negative relationship between executive compensation and real earnings management, meaning that with higher pay executives are less opportunistic and do align their interests with those of shareholders.

2.2.3 Legitimacy theory

Organizations will engage in those activities that are acceptable to society's norms and standards. An organization will openly disclose and report on those activities which it expects that society will want it to engage in. This is because there exists a social contract between the organization and society. The organization will only survive within society if it does not breach this social contract. Contrary to this, the organization's continued existence is in jeopardy and the society may not allow it to continue with its operations. The nature of this social contract is not static but is rather dynamic. The "terms" of this contract continue to change because society's expectations also continue to change. Therefore, the organization must also adapt to these changes and interpret them appropriately (Cuganesan et al., 2007).

Since organizations rely on the society to survive, the management must continuously check to ensure that their activities do not become "illegitimate", in which case they must take the necessary remedy measures. In order to influence the perception of society, organizations must make corporate disclosures within their annual reports and published financial statements to show that they are not going against society's expectations (Cuganesan et al., 2007). Managers, especially when engaging themselves in earnings management, openly disclose their corporate social responsibility activities in order to seem more attractive to

the society and other stakeholders. Subsequently, society and other stakeholders perceive the managers to be at their best performance. Voluntary disclosure is therefore a necessity in annual reports of companies in order to hold the organizations socially responsible (Sun et al., 2010). Previous studies have used this theory to explain the relationship between companies and the society, given that the relationship takes the nature of a social contract (Alhamrog et al., 2015; Gavana et al., 2017; Härkönen, 2017). This theory however does not fit in this study as the study examines the relationship between shareholders and executives and not society.

In summary of the theories, various theories have been used in literature to explain earnings management behavior, including positive accounting theory, agency theory and legitimacy theory. This study relied on the positive accounting theory and the agency theory since the two theories focus on the relationship between shareholders and management unlike the legitimacy theory which focuses on the relationship between shareholders and society. The positive accounting theory was useful in determining executive compensation (incentive) as an independent variable while the agency theory was useful in determining earnings management (agency cost) as the dependent variable.

2.3 Empirical review

This section consists of an empirical review on the relationship between executive compensation and earnings management. Research conducted in this area has shown various inconsistencies which may be explained by differences in theories used, variables used, context of the study and methodology. Hence, this section highlights the various inconsistencies presented in empirical findings.

2.3.1 The relationship between executive compensation and earnings management

Early research showed that bonus schemes pegged on earnings serve as a popular basis of rewarding managers (Gaver et. al, 1995; Guidry et. al, 1999 Healy, 1985; Holthausen et. al, 1995). Zmijewski and Hagerman (1981) reported that when managers' bonus are based on the firm's earnings, the higher the probability that they will use those accounting methods that increase earnings in order to earn higher bonuses. These findings were supported by (Gaver et. al, 1995; Guidry et. al, 1999; Healy, 1985; Holthausen et. al, 1995).

Subsequent studies have moved away from focusing solely on bonus schemes towards other components of executive compensation. Gao and Shrieves (2002) identify the various

components of executive compensation as salary, stock options, restricted stock, bonus and long term incentive plans. Their study which was conducted on US firms found that stock options and bonuses are positively related to earnings management. Subsequently, Bergstresser and Philippon (2004) use CEO stock and options to measure CEO incentives. They find that those companies whose CEOs' overall compensation is more sensitive to company share prices have higher levels of earnings management. Carter et al. (2005) while focusing on bonus payments go a step further to look at nondiscretionary, positive and negative discretionary accruals. They find a positive relationship between bonus payments and the nondiscretionary proportion of earnings. They also find a significantly more positive relation between bonuses and income-increasing discretionary accruals than between bonuses and the nondiscretionary portion of earnings. However, their findings report a negative relationship between bonuses and income-decreasing discretionary accruals.

Shuto (2007) adds on to literature by studying executive compensation and earnings management in Japan. They use total cash compensation (executive salary and bonus) as a proxy for executive compensation. This justification is based on a consensus by researchers in Japan at a time when only the total amount of compensation paid to all directors was disclosed, and information regarding the compensation paid to individual directors was not publicly available. The findings are consistent with previous research that discretionary accruals are positively and significantly associated with executive compensation. Subsequently, Kam (2010) adds on to the body of research by studying short term remuneration and equity incentives in relation to earnings management. The findings show that there is a positive relationship between CEO short term remuneration and earnings management. However, contrary to Bergstresser and Philippon (2004) no evidence is found for a positive relationship between equity incentives and earnings management. The differences in their findings could be attributed to difference in variables used as proxy for executive compensation.

Zadeh, Salehi, & Alaei (2012) come in to study multiple factors affecting earnings management in Iran. They study managers' bonus, leverage, size, effective tax rate. With regards to managers' bonus they did not find any significant relationship between managers' bonus and earnings management. These findings proved inconsistent with previous studies on bonus compensation. As an extension of literature, Sun and Hovey (2013) studied the various components of executive compensation-(salary, bonus, shares, options, long term

incentive plans); and their impact on earnings management. The findings showed that endogeneity exists in that fixed compensation and salaries provide disincentives for managers to practice aggressive earnings management whereas at-risk compensation and bonuses induce managers to employ income-increasing discretionary accruals to inflate reported earnings.

Inconsistent with prior researches that found a positive relationship between executive compensation and earnings management, Hassen (2014) finds a negative relationship. This research was conducted in France and he uses the Dechow and Dichev (2002) model that has been modified by Ball and Shivakumar (2005) in measuring discretionary accruals. Karimi et al. (2014) investigates the relationship between board remuneration and earnings management of accepted companies on Tehran stock exchange. His findings are consistent with Nassir Zadeh, Salehi, & Alaei (2012). This study uses the Kothari model of performance measurement to measure discretionary accruals. Lakhali (2014) studies whether performance based pay reduces earnings management in France. The findings show that there is a positive and significant relationship between the variable executive compensation and earnings management. This is inconsistent with Hassen (2014). Additionally the findings show that the amount of stock-options granted and exercised is positively associated to upward earnings management. This is consistent with Bergstresser and Philippon (2004) and inconsistent with Kam (2010). This study used the modified Jones model (1995).

Similar to Zadeh et al. (2012), Nurdiniah and Herlina (2015) analyzed factors affecting the motivation of earnings management in manufacturing listed in Indonesia Stock Exchange. They looked at motivation bonus; motivation debt, the motivation of the political cost. They find that motivation bonus has a positive and significant impact of earnings management. These findings are consistent with Njogu (2016) who examined factors influencing earnings management among companies listed on the Nairobi Securities Exchange and also found a positive and significant relationship between managers' bonus and earnings management. Both these findings are however inconsistent with Zadeh, Salehi, & Alaei (2012). The difference in findings could be because Njogu (2016); Nurdiniah and Herlina (2015) used ROA as a proxy for managers' bonus while Zadeh et al. (2012) used the actual bonus paid to managers. However, Andersson and Frisk (2016) studied variable pay as a predictor of earnings management among Swedish listed companies. They did not find any significant relationship between executive compensation and earnings management. The modified Jones model (1995) was used in the study.

Recent studies, although few, have incorporated both accrual-based and real earnings management as opposed to prior studies that have solely focused on accrual-based earnings management. Zhou et al. (2016) studied the impacts of accrual-based and real earnings management on executive compensation among Chinese public firms in the private sector. The findings show that while accrual-based earnings management does not impact executive compensation, real earnings management leads to high executive compensation. The Modified Jones model (1995) was used to measure accrual based earnings management and the performance match model by Kothari was used to check for robustness. Real earnings management was measured using the Roychowdhury (2006) model. Li (2017) investigated the relationship between accrual-based and real earnings management strategies and the effect of CEO equity incentives on the two strategies. The findings show that there is a positive and significant relationship between CEO equity compensation and accrual-based and real earnings management. Accrual based earnings management was measured using the performance match model by Kothari while real earnings management was measured using the Roychowdhury (2006) model.

The inconsistency in results could be explained by a number of issues such as differences in research setting, differences in methodology used in measuring earnings management, differences in theories used or differences in variables used. The prior researches used different methods in measuring earnings management. Some researches such as Healy (1985) used the Healy method in measuring earnings management while Zadeh et al. (2012) used the modified Jones model, Karimi et al. (2014) used the Kothari model of performance matching, Njogu (2016) used the Yoon model in measuring earnings management. Therefore, it is important to use other accruals models in order to be assured of the relationship between earnings management with executive compensation. This study proposes to add on to the body of literature by investigating the relationship between executive compensation while focusing on both accrual based and real earnings management to complement previous research.

Table 2. 1 Summary of models used in literature

Authors	Model used	Findings
Healy (1985)	Healy model	There is a strong association between accruals and managers' income-reporting incentives under their bonus contracts.
Gao & Shrieves (2002)	Modified jones (1995)	Both bonus and options are positively related to the magnitude of DCA.
Bergstresser & Philippon (2004)	Modified jones model (1995)	More 'incentivized' CEOs—those whose overall compensation is more sensitive to company share prices—lead companies with higher levels of earnings management.
Carter et al. (2005)	Kasznik (1999)	Positive relation between bonus payments and the nondiscretionary proportion of earnings .Positive relation between bonuses and income-increasing discretionary accruals. negative relation between bonuses and income-decreasing discretionary accruals.
Shuto (2007)	Kasznik (1999)	Discretionary accruals are positively and significantly associated with executive compensation
Kam(2010)	Modified jones model (1995)	A positive relationship between CEO short term remuneration and earnings management; No evidence is found for a positive relationship between equity incentives and earnings management
Zadeh et al. (2012)	Modified jones model (1995)	No significant relationship between changes in managers' bonus and earnings management.
Sun & Hovey (2013)	Kasznik (1999)	Endogeneity exists in that fixed compensation and salaries provide disincentives for managers to practice aggressive earnings management whereas at-risk compensation and bonuses induce managers to employ income-increasing discretionary accruals to inflate reported earnings.
Hassen (2014)	Dechow and Dichev (2002)	Negative relationship between executive compensation and earnings management
Karimi et al. (2014)	Kothari model	No significant relationship between board remuneration and earnings management.
Lakhal et al. (2014)	Modified jones model (1995)	Positive and significant relationship between the variable executive compensation and earnings management; the amount of stock-options granted and exercised is positively associated to upward earnings management.
Nurdiniah & Herlina (2015)	Modified jones model (1995)	Motivation bonus (ROA), motivation debt (leverage) and the motivation of the political cost (size of the company) has a positive and significant impact of earnings management.
Njogu (2016)	Financial structure model by Yoon et. al.	Positive and significant relationship between managers' bonus and earnings management
Andersson & Frisk (2016)	Modified jones model (1995)	No significant relationship between executive compensation and earnings management.
Zhou et al. (2016)	Modified jones (1995) plus Kothari model	While accrual-based earnings management does not impact executive compensation, real earnings management leads to high executive
Li (2017)	Kothari model	Positive and significant relationship between CEO equity compensation and accrual-based and real earnings management

2.4 Models of measuring earnings management

Based on the available literature, various models have been devised to measure accrual-based earnings management. Each of these methods have their strengths and weaknesses. Subsequently, there are advantages and disadvantages of using each of these models. The models discussed in the subsequent paragraphs are the Healy model, the DeAngelo model,

the Jones model, the modified Jones model, the industry model, the DD model, McNichols model, performance matched discretionary model and the augmented Jones model.

2.4.1 The Healy model

Healy (1985) was the first to attempt to measure earnings using discretionary accruals. He starts with total working capital accruals which are calculated using the balance sheet approach. He makes an assumption that earnings management is practised routinely every accounting period i.e. it is systematic. Thus, he assumes that non-discretionary accruals is measured by the variance in the normal levels of accruals from one year to the next (Van-Praag, 2001). Discretionary accruals are calculated as the difference between total accruals and non-discretionary accruals. This model assumes that accruals are a constant fraction of lagged assets thus, any deviation from the average is inferred to be earnings management. One of the strengths of this model is that if nondiscretionary accruals are constant from one period to the next then the model will estimate nondiscretionary accruals accurately (Dechow et al., 1995). One of the weaknesses of this model is that it makes the assumption that the non-discretionary accruals are at a flat rate and therefore earnings management can be attributed to the total accruals component only (Sun & Rath, 2010). However Kaplan (1985) establishes in his study that non-discretionary accruals do in fact change over time with changes in the economic environment. Sun and Rath (2010) states that the assumption has a low probability of being empirically descriptive.

2.4.2 The DeAngelo Model (1986)

DeAngelo (1986) made an adjustment to Healy (1985) in that she estimated nondiscretionary accruals to be the variance between the total accruals measured in the current year and the total accruals in the prior year. Dechow (1995) observes that the DeAngelo model can qualify as an extraordinary version of the Healy model whereby the period of estimation for nondiscretionary accruals is confined to the observation of the prior year.

The weakness of the DeAngelo model is similar to that of the Healy model (1985). In addition Sun and Rath (2010) state that even though the Healy model (1985) and DeAngelo model (1986) predicted the techniques that managers may use to either decrease or increase earnings, they ignored the changes in non-discretionary accruals and assumed all accruals to be discretionary accruals. However, this would be a weak assumption to make due to the nature of the accrual based system of accounting that is always changing with regards to

economic conditions. Thus these methods tend to measure earnings management with mistakes.

2.4.3 The Industry Model (1991)

Dechow et al. (1995) state that there are variations between different industries that are inherent to those industries. These variations in industries tend to affect working capital items. In order to make adjustments Dechow et al. (1995) use industry median values. The Industry-model's ability to reduce the error in measurement of discretionary accruals is dependent upon two factors: The Industry-model only removes variation in nondiscretionary accruals that is prevalent across firms in the same industry. However, when changes in nondiscretionary accruals largely reflect responses to changes in firm-specific circumstances, then the Industry Model will not identify all nondiscretionary accruals from the discretionary accrual proxy. Secondly, the Industry-model removes variation in discretionary accruals that is correlated across firms in the same industry. The severity of this problem depends on the extent to which the earnings management stimulus is correlated across firms in the same industry (Dechow et al., 1995).

2.4.4 The Jones Model (1991)

In this model Jones (1991) assumes that nondiscretionary accruals do not remain constant but do change over time. The Jones model tries to incorporate the effect of changes in the economic environment on non-discretionary accruals. Additionally, according to Jones (1991) all accruals can be used in earnings management therefore she recommends that all accruals except those relating to taxes be investigated. A weakness of this model is that it makes the assumption that revenues are part of non-discretionary accruals (Dechow et al., 1995). The author however notes that it is possible that earnings management will be practised using discretionary revenues. If this is the case, then the model will not include the portion of the managed earnings in the discretionary accruals hence leading to error in measuring earnings management. This limitation is recognized by Jones (1991) and empirical evidence by Ronen and Yari (2008) precisely demonstrates this.

2.4.5 The Modified Jones Model (1995)

Whereas the Jones model assumes that revenues form part of non-discretionary accruals, the Modified Jones model incorporates the use of discretionary revenues to measure earnings management.

According to Dechow et al. (1995), the Modified Jones model estimates nondiscretionary accruals during the event period, consequently in periods in which earnings management has hypothesized. The Modified Jones model and the standard Jones model differ from each other in the aspect that changes in revenues are adjusted for the change in receivables in the event period. The Modified Jones model assumes that all changes in credit sales result from the use of earnings management.

However, some studies conducted in the international context using the modified Jones model has been deemed unsuitable in some contexts. In Korea, research done by Yoon and Miller (2002) indicates that the model may be unfit to be used within the Korean context. Additionally, in Bangladesh, Islam, Ali and Ahmed (2011) suggests that the model may be unfit for their circumstances. Alareeni and Aljuaidi (2014) compare the modified Jones model against the Yoon's model and find that even though both models are empirically weak, the Yoon model is better at detecting earnings management than the Jones model.

2.4.6 DD model: Cash flows and working capital accruals

Dechow and Dichev (2002) develop a working capital accrual and cash flows model. The approach was based on the indication that even when a business has competent managers with good intentions, abnormal accruals may still be present due to other factors related to the nature of business such as the highs and lows of business activities. As a result this model uses working capital accruals and cash flows to measure accruals quality. They therefore propose including past, present and future cash flows as additional relevant variables in explaining nondiscretionary accruals.

A weakness of this model is that independent variables have a measurement error hence making the coefficients to be biased downwards (Dechow & Dichev, 2002). The model also makes the assumption that accruals and alterations to earnings are reflected in the periods before and after the current period hence limiting the applicability of the model to only firms that have a relatively short operating cycle (McNichols, 2002). Additionally, this model fails to capture how discretionary accruals may affect total accruals and this puts a limit to the generalizability of the model. Finally, the presence of mergers, acquisitions and divestures could bring in further errors since there would be a mismatch in the accruals of one period to the next (McNichols, 2002).

2.4.7 McNichols model: Towards an integrated approach

McNichols (2002) gives a recommendation that researchers combine the determinants from both the Jones and the DD models. The reason is that the Jones model makes a separation between discretionary accruals and non-discretionary accruals but the DD model fails to make this distinction and examines total accruals. Hence combining both models could combine their strengths, specifically by reducing the omitted variable problem in the Jones model, and functioning as a check for the measurement errors in the DD model.

2.4.8 Performance Matched Discretionary Accruals

This model attempts to improve the modified Jones including the relationship between performance and accruals in the estimation of discretionary accruals. The major contribution of this model is the incorporation of firm performance into the estimation of discretionary accruals. Kothari et al. (2005) observe that the original Jones and modified Jones models are misspecified especially when firms that have extreme performance are included and that's why they recommend that the firm performance should be captured in the model. The Kothari model however has a few limitations. The inclusion of firm performance does not entirely eliminate model misspecification (Dechow et al., 2012). It has been observed that in some cases such as extreme earnings to price and book market ratios, model specification is reduced but in some cases such as extreme performance in terms of size and operating cash flows model misspecification is increased (Dechow et al., 2012).

2.4.9 The Augmented Jones Model (2011)

This model proposed by Pae (2011) seeks to make an improvement to the DD model that has "peek ahead" bias. The augmented Jones model does not use future operating cash flow information to estimate discretionary accruals, however it incorporates the accruals of the preceding year in order to improve the explanatory power of the model. Pae (2011) believes that uncertainty in accruals is best captured by the measure of accruals quality developed by Dechow and Dichev (2002) referred to as the DD model. In the DD model, accruals quality is measured by the extent to which working capital accruals map into operating cash flow realizations. This model is predicated on the idea that, regardless of management intent, accruals quality is affected by the measurement error in accruals. Intentional estimation error arises from incentives to manage earnings, and unintentional error arises from management lapses and environmental uncertainty; however, the source of the error is irrelevant in this approach. DD's approach regresses working capital accruals on cash from

operations in the current period, prior period and future period. The unexplained portion of the variation in working capital accruals is an inverse measure of accruals quality (a greater unexplained portion implies poorer quality).

As a practical matter, the DD approach is limited to current accruals. While applying the DD model to total accruals would, in principle, produce an accruals quality metric that comprehensively measures accruals uncertainty, the long lags between non-current accruals and cash flow realizations effectively preclude this extension. To address this limitation, Pae (2011) also considers proxies for accruals quality that are based on the absolute value of abnormal accruals, where abnormal accruals are estimated using the Jones (1991) model, as modified by Dechow et al. (1995). McNichols (2002) proposes this combined model, arguing that the change in sales revenue and PPE are important in forming expectations about current accruals, over and above the effects of operating cash flows. She shows that adding these variables to the cross-sectional DD regression significantly increases its explanatory power, thus reducing measurement error. Pae (2011) proposes an alternative model that does not take into account information about cash flows in the future.

2.4.10 Summary of the models

Roodposhti, Banimahd, Rezaei, and Salehi (2012) examined the explanatory power of the Jones model (1991), Dechow model (1995), Kasznik model (1999) and Kothari-Jones model (2005) on a sample of 73 companies from Tehran, Iran. According to these authors, Kothari-Jones model or Performance Matched Model (2005) had the highest explanatory power. The explanatory power of the model Jones was 11.5%; Dechow model had 4.4%; Kasznik model had 4.2%; Kothari-Jones model had 30.1% and modified Kothari-Jones model had 29.1%. Md. Borhan, Jamal and Murray (2013) examined the explanatory power of the Jones model (1991), Dechow model (1995), Kothari-Jones model (2005) on a sample of 70 companies from New Zealand. Jones model (1991) has 20.4% explanatory power; Dechow model (1995) has 20.1% explanatory power; The Kothari-Jones model (2005) has 31.6% explanatory power. Kashmiri (2014) compares the explanatory power of McNichols (2002) model with a newer model, Dunmore (2013) in China, Japan and the United Kingdom. Therefore in both studies the Kothari model (2005) has greater explanatory power compared to other models. The study finds that both the McNichols (2002) and the Dunmore (2013) models are well specified and the test power is improved by the incorporation of

reversals. However, the study also finds that the McNichols (2002) model outperforms the Dunmore (2013) model.

The modified Jones model has been the most widely used model to detect earnings management. Chen (2010) examined the use of other models simultaneously in order to compare results as results derived from only one specific model are not conclusive. This study sought to use multiple models available in literature in order to make a comparison of the results. The models used included: the original Jones 1991; the modified Jones 1995; Kasznik 1999, DD 2002, McNichols, 2002, Kothari 2005, Yoon 2006; the augmented Jones with reversals 2011.

2.5 Research gap

Previous studies show many similarities, however they also present many inconsistencies that differentiate them. The inconsistencies may be explained by differences in theories used, variables used, context of the study and methodology. In terms of theories used, there seems to be a consensus as different researchers have used similar theories including positive accounting theory and the agency theory. In terms of the contexts of the studies, different researchers have carried out their researches in different economic contexts such as France, China, Iran, Kenya, Indonesia etc. In terms of variables used and how they are measured, different researchers have used different measures for executive compensation. Additionally, different researchers have used different models in measuring earnings management. This study makes use of multiple-models in estimating accrual-based earnings management in order to make comparisons in research findings. Additionally, previous research has focused on accrual-based earnings management. Consequently, this study incorporates real earnings management, an additional strategy of earnings management, as most recent research has shown that managers do make use of both strategies in managing earnings.

2.6 Conceptual framework

Based on the literature on earnings management, executive compensation and other firm characteristics, a conceptual framework is developed. Executive compensation is the independent variable while earnings management is the dependent variable. Control variables include size and leverage.

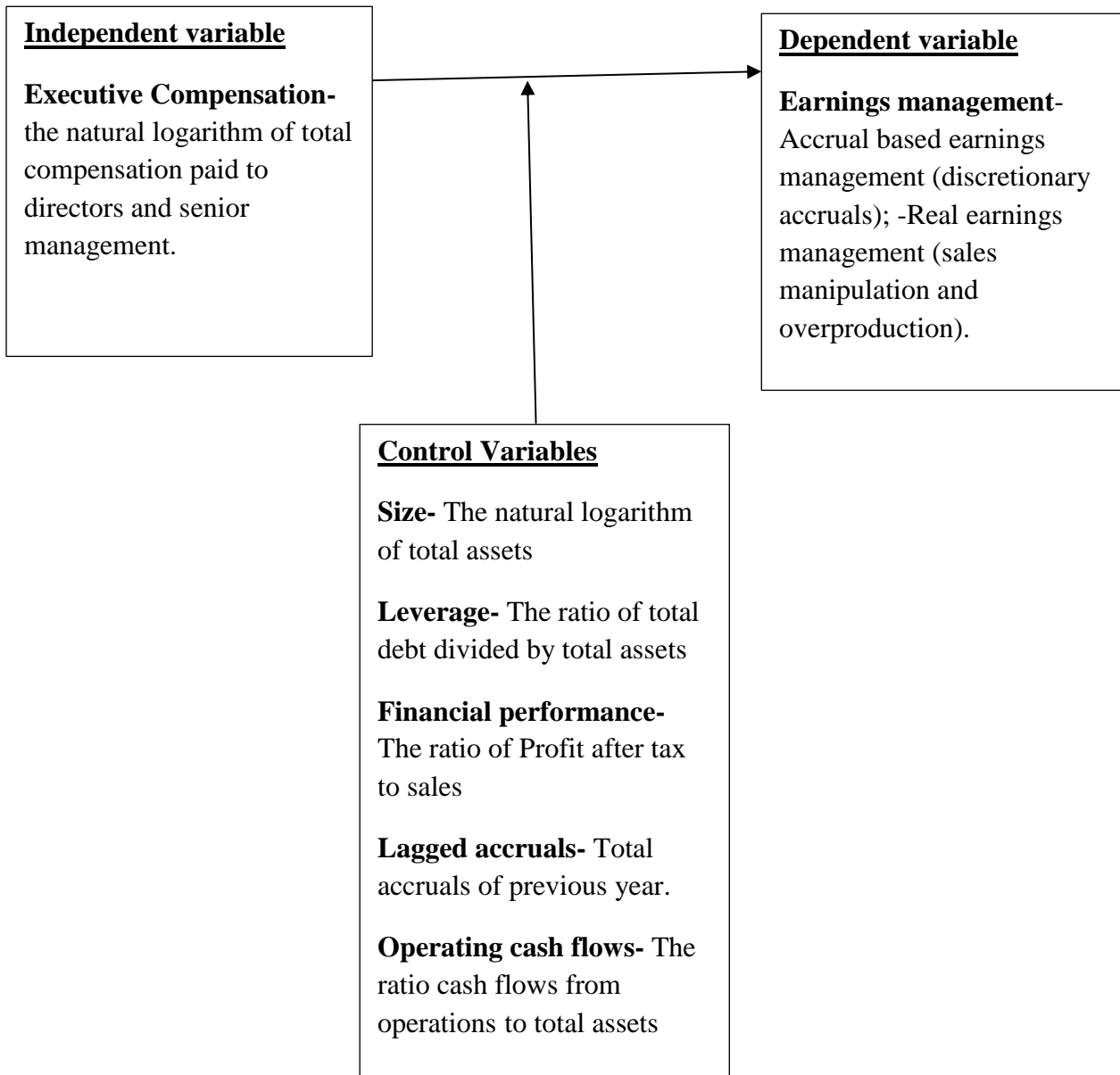


Figure 2.1: Conceptual Framework

2.6.1 Earnings management

Accrual-based earnings management was measured as the portion of discretionary accruals. This is consistent as in prior studies (Shuto, 2007; Kam, 2010; Hassen, 2014; Zhou et al., 2016; Li, 2017). Real earnings management was measured based on abnormal operating cash flows and abnormal production (Zhou et al., 2016; Swai & Mbogela, 2016; Li, 2017).

2.6.2 Executive compensation

Executive compensation included the sum of the amount paid to the directors and senior management as shown by the companies' annual reports. This was the same case in Shuto (2007) and Karimi (2014)

2.6.3 Size

The size of the firm was added to the regression and was measured as the total assets of the company in that year in consistent with previous research (Lakhal et al., 2014; Andersson & Frisk, 2016; Li, 2017). The bigger the size of a firm, the higher the probability that the particular firm will use those accounting methods and practices that will result in decreased reported earnings, all other factors held constant. Size of the firm was used as a proxy variable for political attention.

2.6.4 Leverage

Leverage was included in the regression formula as a control variable in consistent with previous research (Lakhal et al., 2014; Andersson & Frisk, 2016; Li, 2017). It was measured as total debt divided by total assets at year-end. If a firm's leverage is high, there is also a high probability that the firm is using those accounting methods and practices that will result in higher reported earnings. Thus, all other factors held constant, the higher the leverage the higher the probability that the firm is using those accounting methods and practices that will lead to higher reported earnings.

2.6.5 Financial performance

Firm financial performance was included in the study as a control variable and it was measured as profit after tax divided by sales revenue in consistent with previous research (Njogu, 2016). It is expected that the higher the firm performance, the higher the likelihood that earnings management is high and vice-versa.

2.6.6 Lagged accruals

Lagged accruals were included in the regression model as a control variable in consistent with previous research (Sun & Hovey, 2013). Total accruals was measured as net income less operating cash flows. Therefore lagged accruals was measured as the total accruals of the previous years.

2.6.7 Operating cash flows

Operating cash flows were used in the study as a control variable in consistent with previous research (Li, 2017). They were measured as cash flows from operations divided by total assets.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methods that were used in the study to answer the research questions and objectives. It also provides a description of the research design, population and sampling, data collection methods and data analysis.

3.2 Philosophical assumptions

Researchers have developed four main research philosophical assumptions including: ontology, epistemology, axiology and methodology. These philosophical assumptions are deeply rooted within various interpretive frameworks that researchers use when they conduct a study, including: positivism; post-positivism; interpretivism; constructivism; transformative; and post-modernism among others (Creswell, 2014).

This research used an ontological research philosophical assumption whereby multiple realities were recognized and therefore effort was made to experience these realities through different perspectives of different individuals and through different experiences (Creswell, 2014). In this study, secondary data was obtained through information given in the annual financial reports while primary data was obtained through the use of questionnaires given to respondents. This study made use of post-positivism interpretation. Post-positivism refers to the research philosophy that believes that research should take a series of logical steps and it should incorporate “multiple perspectives” rather than just focusing on a single reality. Additionally, post-positivists believe that researchers should be rigorous in data collection and analysis, use the aid of computer programs for data analysis, and use validity approaches.

3.3 Research Design

This study adopted an explanatory research design. This research design is used to identify the extent and nature of causal relationships (Kothari, 2004). Therefore, this study sought to provide an understanding on the extent of earnings management and its relationship to executive compensation among non-financial companies listed on the securities exchange markets in East Africa.

3.4 Population and Sampling

The population of the study consisted of all non-financial companies listed on the securities exchange markets in East Africa for the period 2002-2016. Financial companies were excluded due to the nature of their financial statements and due to the regulatory requirements of the industry. This is consistent with prior studies (Shuto, 2007; Kam, 2010; Lakhali et al., 2014; Li, 2017). A total of 109 companies were actively listed on the securities exchange in East Africa for the period 2002-2016. The period was chosen because the Code on Corporate Governance was introduced in the region in 2002. Out of the 109 companies, 37 were financial, 3 were newly listed companies, 2 were delisted, 9 were suspended, 12 were cross-listed and 5 had insufficient data as shown in table 3.1. From the 41 companies, 7 were listed on the Dar es Salaam Stock Exchange (DSE) 2 companies listed on the Ugandan Stock Exchange (USE). Kenyan companies alone made up 78% of the study population. The study excluded all companies listed in Rwanda as they were all financial firms and newly-listed companies. Burundi on the other hand is still in the process of forming its stock exchange.

Table 3. 1: Companies included in the sample

Company category	Kenya	Tanzania	Uganda	Total
Total no. of companies listed as at 2016	66	27	16	109
Less: Number of financial companies	(17)	(12)	(8)	(37)
Number of newly listed companies	(1)	(2)	-	(3)
Number of delisted companies	(2)	-	-	(2)
Number of suspended companies	(9)	-	-	(9)
Number of cross-listed companies	(1)	(6)	(5)	(12)
Number of companies with insufficient data	(4)	-	(1)	(5)
Companies included in the sample	32	7	2	41

3.5 Data Collection Methods

In order to determine executive compensation and the extent of earnings management, the study mainly used secondary sources of data. These included annual financial reports of the various companies. Kumar (2008) give various disadvantages of using secondary data. For instance, there is difficulty in determining the accuracy of the data especially with regards to collection. Also, the unit of measurement may not be the same as the unit of measurement used in the present research. Another major limitation is that secondary data may be outdated and rendered irrelevant over time. However, Kitchin and Tate (2013) explain that there are three main justifications for using secondary sources of data. First, the data may not be available in any other form. Secondly, there is an economic justification based on

time and cost. Thirdly, it allows for replication of studies by other researchers so as to ascertain the validity of results. In this study, the use of secondary data was justified on the grounds that it is the most dependable means of obtaining the required information. Most of the financial statements were available online on the CMA and DSE websites.

Primary sources of data were also used in order to determine the extent of earnings management and its relation to earnings management. Questionnaires were used to obtain this information. The use of primary data was justified on the basis that it gives fundamental and original evidence (Sapsford & Jupp, 2006). Questionnaires were targeted at the accountants, finance managers; internal and external auditors of the various companies. The questionnaires were self-administered, sent via email and distributed online. Dunne et al. (2005) justify the use of questionnaires on the grounds that first, they are cost and time effective and they provide the inclusion of many more respondents compared to interviews. Kothari (2004) states that questionnaires have an advantage of being low cost where the population is large and geographically widespread. Also the author explains that questionnaires can be applied conveniently where the respondents are not easily reachable. In this study, it was difficult to reach the respondents for interviews hence questionnaires were more applicable. A major disadvantage associated with questionnaires is that the respondents may be slow or forget to respond. This was mitigated by constantly reminding and prompting the respondents through telephone and e-mail.

3.6 Data analysis

In this study, earnings management was the dependent variable. The study estimated both accrual-based and real earnings management. Multiple models were used to estimate discretionary accruals (accrual-based earnings management) in order to make a comparison of the results. The models used in this study were: the original Jones 1991; the modified Jones 1995; Kasznik 1999, DD 2002, McNichols, 2002, Kothari 2005, Yoon 2006; the augmented Jones 2011.

First, total accruals were calculated as follows:

$TAt = \text{Net income} - \text{operating cash flows}$

Thereafter, non-discretionary accruals were determined using the different models as follows:

3.6.1 The original Jones model (1991)

$$NDA_t = \alpha_1 (1/A_{t-1}) + \alpha_2 (\Delta REV_t) + \alpha_3 (PPE_t) + e_{i,t} \dots \dots \dots \text{equation 1}$$

Where:

ΔREV_t = revenues in year τ less revenues in year $\tau-1$ scaled by total assets at $\tau-1$

PPE_t = gross property plant and equipment in year τ scaled by total assets at $\tau-1$

A_{t-1} = total assets at $\tau-1$

$\alpha_1, \alpha_2, \alpha_3$ = firm specific parameters

3.6.2 The modified Jones model (1995)

$$NDA_t = \alpha_1 (1/A_{t-1}) + \alpha_2 (\Delta REV_t - \Delta REC_t) + \alpha_3 (PPE_t) + e_{i,t} \dots \dots \dots \text{equation 2}$$

Where:

ΔREC_t = net receivables in year x less receivables in year $x-1$ scaled by total assets at year $x-1$.

ΔREV_t = revenues in year x less revenues in year $x-1$ scaled by total assets at $x-1$

PPE_t = gross property plant and equipment in year scaled by total assets at $x-1$;

A_{t-1} = total assets at $x-1$

$\alpha_1, \alpha_2, \alpha_3$ = firm-specific parameters.

3.6.3 Kasznik model

$$NDA_t = \alpha_1 (1/A_{t+1}) + \alpha_2 (\Delta REV_t - \Delta REC_t) + \alpha_3 (PPE_t) + \alpha_4 \Delta CFO + e_{i,t} \dots \dots \dots \text{equation 3}$$

Where:

ΔREC_t = net receivables in year x less receivables in year $x-1$ scaled by total assets at year $x-1$.

ΔREV_t = revenues in year x less revenues in year $x-1$ scaled by total assets at $x-1$

PPE_t = gross property plant and equipment in year scaled by total assets at $x-1$;

A_{t-1} = total assets at $x-1$

ΔCFO = operating cash flow in year x less operating cash flow in year $x-1$ scaled by total assets at $x-1$.

$\alpha_1, \alpha_2, \alpha_3, \alpha_4$ = firm-specific parameters

3.6.4 DD Model

$$\Delta WC_{i,t} = \alpha_1 CFO_{i,t-1} + \alpha_2 CFO_{i,t} + \alpha_3 CFO_{i,t+1} + e_{i,t} \dots \dots \dots \text{equation 4}$$

Where:

$\Delta WC_{i,t}$ = change in working capital in the year t for firm i . Calculated as $[(\Delta \text{Accounts Receivable}_t + \Delta \text{Inventory}_t - \Delta \text{Accounts Payable}_t - \Delta \text{Tax Payable}_t + \Delta \text{Other Assets}_t (\text{Net})) / A_{i,t-1}]$

$CFO_{i,t-1}$ = cash flow from operation for the year $t-1$ for firm i scaled by $A_{i,t-1}$

$CFO_{i,t}$ = cash flow from operation for the year t for firm i scaled by $A_{i,t-1}$

$CFO_{i,t+1}$ = cash flow from operation for the year $t+1$ for firm i scaled by $A_{i,t-1}$

$A_{i,t-1}$ = total assets in year $t-1$ for the firm i

$e_{i,t}$ = error term in the year t for firm i

3.6.5 McNichols Model

$$\Delta WC_{i,t} = \alpha_1 \Delta REV_{i,t} + \alpha_2 PPE_{i,t} + \alpha_3 CFO_{i,t-1} + \alpha_4 CFO_{i,t} + \alpha_5 CFO_{i,t+1} + e_{i,t} \dots \dots \dots \text{equation 5}$$

Where:

$\Delta WC_{i,t}$ = change in working capital in the year t for firm i . Calculated as $[(\Delta \text{Accounts Receivable}_t + \Delta \text{Inventory}_t - \Delta \text{Accounts Payable}_t - \Delta \text{Tax Payable}_t + \Delta \text{Other Assets}_t (\text{Net})) / A_{i,t-1}]$

$\Delta REV_{i,t}$ = revenues in the year t less revenue in year $t-1$ for firm i scaled by $A_{i,t-1}$

$PPE_{i,t}$ = gross property, plant and equipment in the year t for the firm i scaled by $A_{i,t-1}$

$CFO_{i,t-1}$ = cash flow from operation for the year $t-1$ for firm i scaled by $A_{i,t-1}$

$CFO_{i,t}$ = cash flow from operation for the year t for firm i scaled by $A_{i,t-1}$

$CFO_{i,t+1}$ = cash flow from operation for the year $t+1$ for firm i scaled by $A_{i,t-1}$

$A_{i,t-1}$ = total assets in year $t-1$ for the firm i

$e_{i,t}$ = error term in the year t for firm i

3.6.6 Kothari Model

$$NDA_{i,t} = \alpha_1 (1/A_{i,t-1}) + \alpha_2 \Delta REV_{i,t} + \alpha_3 PPE_{i,t} + \alpha_4 ROA_{i,t} + e_{i,t} \dots \dots \dots \text{equation 6}$$

Where:

$\Delta REV_{i,t}$ = revenues in the year t less revenue in year $t-1$ for firm i scaled by $A_{i,t-1}$

$PPE_{i,t}$ = gross property, plant and equipment in the year t for the firm i scaled by $A_{i,t-1}$

$ROA_{i,t}$ = return on assets in the year t for firm i scaled by $A_{i,t-1}$

$A_{i,t-1}$ = total assets in year $t-1$ for the firm i

$e_{i,t}$ = error term in the year t for firm i

3.6.7 Yoon Model

$$NDA_t = \alpha_1 (\Delta REV_t - \Delta REC_t) + \alpha_2 (\Delta EXP_t - \Delta PAY_t) + \alpha_3 (\Delta DEP_t - \Delta RET_t) + \epsilon_{i,t} \dots \dots \dots \text{equation 7}$$

Where:

REC_t = net receivables scaled by revenue at year x.

REV_t = revenues scaled by revenue at year x

EXP_t = sum of cost of goods sold and selling and general administrative costs excluding non-cash expenses scaled by revenue at year x

PAY_t = payables scaled by revenue at year x.

DEP_t = depreciation expenses scaled by revenue at year x.

RET_t = retirement benefits expenses scaled by revenue at year x.

3.6.8 The augmented Jones model

$$NDA_t = \beta_0 + \beta_1 \Delta Sales_t + \beta_2 PPE_t + \beta_3 CF_{t-2} + \beta_4 CF_{t-1} + \beta_5 CF_t + \beta_6 TA_{t-1} + \epsilon_t \dots \dots \text{equation 8}$$

where:

TA_t = Total accruals during period t

$\Delta Sales_t$ = change in sales during period t

PPE_t = the level of gross property, plant, and equipment

CF_t = operating cash flows in year t

CF_{t-1} = operating cash flows in year t-1

CF_{t-2} = operating cash flows in year t-2

TA_{t-1} = lagged total accruals

$\epsilon_t - \epsilon_{t-1}$ = difference in error term during period t and period t-1

$\beta_1 > 0$, $\beta_2 < 0$, $\beta_3 > 0$, $\beta_4 > 0$, and $\beta_5 < 0$

3.6.9 Real earnings management

Following prior studies (Chan et al. 2014; Swai & Mbogela, 2016; Zhou et al. 2016; Li, 2017) we considered three real activities manipulations for real earnings management to be measured as follows using the model by Roychowdhury, 2006.

The extent of real earnings management based on abnormal operating cash flows (R_OCF), abnormal discretionary expenses (R_DISEXP), and abnormal production costs (R_PROD). To estimate the normal levels of operating cash flows (OCF) and production costs (PROD), the following regressions for each company and year were run:

$$OCF_{i,t} / A_{i,t-1} = \beta_0 + \beta_1 / A_{i,t-1} + \beta_2 S_t / A_{i,t-1} + \beta_3 \Delta S_t / A_{i,t-1} + S_{i,t} + \epsilon_{i,t} \dots \dots \dots \text{equation 9}$$

$$\text{PROD}_{i,t}/A_{i,t-1} = \beta_0 + \beta_1/A_{i,t-1} + \beta_2 S_t/A_{i,t-1} + \beta_3 \Delta S_t/A_{i,t-1} + \beta_4 \Delta S_{t-1}/A_{i,t-1} + S_{i,t} + e_{i,t} \dots \dots \dots \text{equation 10}$$

Where:

$A_{i,t-1}$ is total assets at t-1.

$S_{i,t}$, is the sales at t, and

ΔS_{t-1} is the sales in year t less sales in year t-1.

$\text{PROD}_{i,t}$ is defined as the sum of cost of goods sold and change in inventory during year t.

R_OCF is calculated as the difference between the actual value of OCF and the normal level predicted from the equation. R_PROD is calculated in a similar way.

Specifically, this research considered an overall measure of real earnings management as follows:

$$\text{REM} = R_PROD + R_OCF$$

3.6.10 Independent variable

Executive compensation was the independent variable in this study. Executive compensation was measured as the total compensation paid to executive directors as was the case in Shuto, 2007; Hassen, 2014; Karimi et al. (2014).

3.6.11 The relationship between the dependent and independent variable

To determine the relationship between earnings management and executive compensation, multiple linear regression was used. The regression model was used because it is appropriate for determining the analytical relationship between variables (Kothari, 2004). The author also explains that regression analysis does not only explain the cause and effect of the variables but also to what degree and to which direction.

In this study there are more than two variables, earnings management (dependent variable); executive compensation (independent variable); leverage, firm size, operating cash flows, firm performance (control variables).

The linear regression model was as follows:

$$\text{AEM}_{i,t} \text{ (or } \text{REM}_{i,t}) = \alpha_i + \beta_1 \text{EXECOMP}_{i,t} + \beta_2 \text{LEVERAGE}_{i,t} + \beta_3 \text{SIZE}_{i,t} + \beta_4 \text{PERFORMANCE} + \beta_5 \text{CASHFLOWS} + \text{ACCRUALS} + \mu_{i,t} \dots \dots \dots \text{equation 11}$$

Where: AEM stands for accrual-based earnings management, REM represents real earnings management, and COMPENSATION is the total compensation paid to senior management and board of directors. The control variables include leverage (LEVERAGE), firm size

(SIZE), operating cash flows (CASHFLOWS) and financial performance (PERFORMANCE). Prior studies have found associations between these control variables and earnings management (for example, Myers et al. 2003; Cheng and Warfield 2005, Bergstresser and Philippon 2006 and Larcker et al. 2007).

3.7 Pilot study

The questionnaire was analyzed for internal consistency using the Cronbach’s alpha analysis. Pilot testing was done in the research study in order to refine questions presented in the questionnaire (Creswell, 2014). It is recommended that the researcher does a pilot test in order to refine the research instruments; frame the questions appropriately; obtain relevant background information; ascertain the degree of observer bias and develop research procedures. In this study, the questionnaires were be issued to twenty-five accountants that are well versed in the area of earnings management. A reliability coefficient of .70 or higher is considered “acceptable” in most researches (UCLA, 2017). The results show a level of 72.7% internal consistency for 25 items. It was concluded that this was satisfactory.

Table 3.2: Cronbach’s Alpha Statistics

Cronbach's Alpha	N of Items
.727	25

3.8 Operationalization of variables

This section describes the measurement for the dependent variable, independent variable and control variables. The dependent variable in the study was earnings management while the independent variable was executive compensation. The control variables used were size, leverage, financial performance, lagged accruals and operating cash flows.

Table 3. 2: Operationalization of variables

Variables	Variable definition	Measure of variables
Dependent variable		
AEM	Accrual-based earnings management	Discretionary accruals measured by Jones 1991; Jones 1995; Kasznik; DD; McNichols; Kothari; Yoon; Augmented Jones models
REM	Real earnings management	Abnormal operating cash flows and abnormal production
Independent variable		
EXECOMP	Executive compensation	The natural logarithm of compensation paid to senior management and directors
Control variables		
SIZE	Size	The natural logarithm of total assets
LEVERAGE	Leverage	Total debt divided by total assets
PERFORMANCE	Performance	Profit after tax divided by sales revenue
ACCRUALS	Lagged accruals	Net income less operating cash flows of previous year
CASHFLOWS	Cash flows	cash flows from operations divided by total assets

3.9 Reliability and validity of the model

In order to improve validity of the model, tests for multi-collinearity, normality, heteroscedasticity and serial correlation were conducted (Brooks, 2014). The normality test shows whether the error term is normally distributed within the population. Normally distributed error term has constant mean and variance (Gujarati, 2012; Fields, 2001). To test for normality, Beta-Jarque test was used. The normal distribution of data is assumed where the test statistic is not significant. Additionally, histograms and normality probability plots were used to test normality. If you mentally superimpose the bell-shaped normal distribution curve on the histogram, you will get some idea as to whether normality assumption may be appropriate (Gujarati, 2012).

Multi-collinearity is said to exist when two independent variables show perfect correlation. This can be shown by the variable inflation factor (VIF). If it is more than 10, multi-collinearity is said to exist (Gujarati & Porter, 1999). This problem can be countered by dropping one of the collinear variables, transforming the highly correlated variable into a ratio and including the ratio instead of the individual variable (Brooks, 2014).

Serial autocorrelation refers to a situation where the error terms are correlated with one another (Brooks, 2014). To test for autocorrelation, the Durbin Watson test is used. A statistic of between 1.5 and 2.5 shows that there is no autocorrelation while a statistic of less than 1.5 or more than 2.5 shows that there is a problem of autocorrelation. This could result in estimation of inaccurate coefficients to be used in the model. Therefore, transformation

of variables using logs could be used in order to solve the problem, or Generalized Least Square (Brooks, 2014).

Heteroscedasticity refers to when the error terms do not have constant variance and this may cause high standard errors. To test for heteroscedasticity, the White test was used. The null hypothesis of homoscedasticity is rejected if the probability of the test statistics is significant, i.e. if the p-value is less than 0.05. This problem may be fixed by transformation of data using logs (Brooks, 2014).

3.10 Ethical considerations

In research ethics are important for two important reasons (Resnik, 2015). First, ethics in research is important to enhance the aims of the research such as knowledge, truth and avoidance of error. Second, since research often involves a great deal of cooperation and coordination among many different people in different disciplines and institutions, ethical standards promote the values that are essential to collaborative work, such as trust, accountability, mutual respect, and fairness. In this study, ethical considerations were considered through obtaining permission from Strathmore University to carry out the research study. Participation by respondents was on a voluntary basis and they were assured of their privacy whereby their identities were kept confidential.

CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

This chapter includes the analysis of data and the study results according to the objectives of the study. There are seven sections, including: sample representation, diagnostic tests, descriptive statistics, correlation analysis, goodness of fit tests, regression analysis and results from the questionnaire. Thereafter, a comparison is made between findings from secondary data and primary data sources.

4.2 Sample representation

A total of 41 companies were included in the final sample. As shown table 4.1, 15% of the companies in the population are from the agriculture sector, 7% from automobiles, 15% from commercial services, 12% from construction and allied, 10% from energy and petroleum sector, 17% from manufacturing and allied sector, 2% from the telecommunication and technology sector, 7% from industrials, 2% from basic materials, 7% from consumer goods, 2% from industrials and 2% from consumer services.

Table 4. 1: Population and Sample representation

Sectors	Country	No of companies	Proportion (%)
Agriculture	Kenya	6	15%
Automobiles	Kenya	3	7%
Commercial services	Kenya	6	15%
Construction and allied	Kenya	5	12%
Energy and petroleum	Kenya	4	10%
Manufacturing and allied	Kenya	7	17%
Telecommunication and technology	Kenya	1	2%
Industrials	Tanzania	3	7%
Basic materials	Tanzania	1	2%
Consumer goods	Tanzania	3	7%
Industrials	Uganda	1	2%
Consumer services	Uganda	1	2%
Total		41	100

4.3 Diagnostic tests

This section consists of the diagnostic tests that were done before the regression analysis could be done. The tests conducted included multi-collinearity tests, Heteroscedasticity tests, autocorrelation test and normality tests.

4.3.1 Multi-collinearity

Tests for multi-collinearity were carried out before any regression model was run i.e. regression model to determine the dependent variable discretionary accruals and the regression model to determine the relationship between executive compensation and earnings management. This was done separately for all the regression models that were used. Multi-collinearity refers to when the explanatory variables are very highly correlated with each other (Brooks, 2014). Practically, the degree of correlation between explanatory variables will be non-zero and a small degree of correlation is acceptable. To test for multi-collinearity, the correlation matrix and the Variance Inflation Factor (VIF) were used.

The correlation coefficients suggested that no significant multi-collinearity problem existed as the coefficients were less than 0.8. The highest coefficient observed was 0.776. While checking for multi-collinearity using VIF and tolerance, there is high degree of multi-collinearity if VIF exceeds 10 and tolerance is less than 0.1. According to appendix XV, the highest VIF is 2.924 while the lowest tolerance is 0.342. This was acceptable that no significant multi-collinearity problem existed between the explanatory variables (Gujarati & Porter, 1999).

4.3.2 Heteroscedasticity test

To test for heteroscedasticity, white test is conducted. The null hypothesis of homoscedasticity is rejected if the probability of the test statistics is significant, i.e. if the p-value is less than 0.05. After removing some variables in the models Jones 1991; Jones 1995; Kaznik; Kothari and Yoon there was no heteroscedasticity. Additionally, the dependent variables in the DD and McNichols models were transformed to adjust for heteroscedasticity. As seen in appendix XIV, the p-values of F and Chi-square of the various regression models are less than 0.05 therefore the researcher failed to accept the null hypothesis (Brooks, 2014). It was concluded that there was heteroscedasticity. This problem could have been solved using Generalized Least Square method. However, since the cause of heteroscedasticity was not known, GLS could not be used. Another way of dealing with

heteroscedasticity would be converting the variables into logs (Gujarati, 2012; Brooks, 2014). Hence, executive compensation and size were converted to logs.

4.3.3 Autocorrelation test

To test for serial autocorrelation the Durbin-Watson statistic was used. The data is considered to be free of a serious problem if the statistic is within the range of 1.5 and 2.5 (Gujarati, 2012). As seen in appendix XVI the statistics were within the range of 1.5 to 2.5 with the lowest statistic being 1.524 for the Yoon model and the highest statistic being 1.999 for the McNichols model.

4.3.4 Normality test

The Beta-Jarque test showed that the data was not normal as shown in appendix XIII by the statistics that suggested the data was not normal. The findings are consistent with previous research where the data was not normally distributed (Swai & Mbogela, 2016). Brooks (2014) states that it is not obvious what should be done where evidence of non-normality is found. He explains that it is better to stick with OLS which is well researched as opposed to using other methods since this would be difficult to implement. Furthermore, for data that is large enough, the assumption of normality is of little consequence (Brooks, 2012; Ghasemi & Zahediasl, 2012). Large may refer to where n is greater than 30 or 40 (Ghasemi & Zahediasl, 2012). In this study, the observations were larger than 30 where each regression model had more than 500 observations. Further normality tests were however conducted using Q-Q plots and histograms that were of a bell-shape suggesting that the data was close to normal. The Q-Q plots and histograms are shown in appendices IX-XII.

4.4 Descriptive results on the extent of earnings management in East Africa

Accrual-based earnings management was measured by estimating the level of discretionary accruals which is used as a proxy measure. Eight different models identified in literature were used to estimate the discretionary accruals. Where there is no earnings management, the discretionary accruals should be equal to zero. However, the results showed the presence of both income-increasing and income-decreasing discretionary accruals. Appendices IV-VII highlight the descriptive statistics of the discretionary accruals obtained from the various models for the periods 2002-2016.

The discretionary accruals for Kenya, Tanzania and Uganda estimated using the Jones 1991 model show minimum values of between -0.130 in 2006 and -0.340 in 2011 while the

maximum values were between 0.070 in 2003 and 0.740 in 2004. The mean of the discretionary accruals show both income increasing and income decreasing values with values of between -0.034 in 2003 and 0.048 in 2004. The greatest mean change was seen between 2004 and 2005, showing a change of -0.056. In Kenya, the mean of the discretionary accruals show income increasing and income decreasing accruals of between -0.040 in 2002 and 0.032 in 2004, with the greatest mean change being 0.061 between 2003 and 2004. In Tanzania, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.070 in 2003 and 0.162 in 2004 with the greatest mean change being 0.232 between 2003 and 2004. In Uganda, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.055 in 2009 and 0.074 in 2016 with the greatest mean change being -0.068 between 2012 and 2013.

Using the Jones 1995 model discretionary accruals for Kenya, Tanzania and Uganda show minimum values of between -0.142 in 2004 and 0.368 in 2010 while the maximum values were between 0.071 in 2003 and 0.699 in 2010. The mean of the discretionary accruals show both income increasing and income decreasing values with values of between -0.035 in 2003 and 0.050 in 2004 with the greatest change being 0.085 between 2003 and 2004. In Kenya, the mean of the discretionary accruals show income increasing and income decreasing accruals of between -0.041 in 2002 and 0.034 in 2004 with the greatest mean change being 0.064 between 2003 and 2004. In Tanzania, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.070 in 2003 and 0.162 in 2004 with the greatest mean change being 0.232 between 2003 and 2004. In Uganda, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.194 in 2010 and 0.189 in 2009 with the greatest mean change being -0.383 between 2009 and 2010.

The discretionary accruals for Kenya, Tanzania and Uganda estimated using the Kasznik model show minimum values of between -0.133 in 2014 and -0.282 in 2010 while the maximum values were between 0.088 in 2003 and 0.777 in 2009. The mean of the discretionary accruals show income increasing and income decreasing accruals of between -0.034 in 2003 and 0.042 in 2004 with the greatest mean change being -0.076 between 2003 and 2004. In Kenya, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.034 in 2003 and 0.023 in 2004 with the greatest mean change being 0.056 between 2003 and 2004. In Tanzania, the mean of discretionary accruals

show income increasing and income decreasing accruals of between -0.037 in 2003 and 0.176 in 2004 with the greatest mean change being 0.213 between 2003 and 2004. In Uganda, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.176 in 2010 and 0.107 in 2009 with the greatest mean change being -0.283 between 2009 and 2010.

Using the DD model discretionary accruals for Kenya, Tanzania and Uganda show minimum values of between -0.133 in 2008 and -0.363 in 2008 while maximum values were between 0.063 in 2015 and 0.756 in 2008. The mean of the discretionary accruals show income increasing and income decreasing accruals of between -0.044 in 2015 and 0.020 in 2005 with the greatest mean change being -0.035 between 2002 and 2003. In Kenya, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.050 in 2015 and 0.034 in 2005 with the greatest mean change being -0.048 between 2013 and 2014. In Tanzania, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.117 in 2008 and 0.141 in 2004 with the greatest mean change being -0.219 between 2004 and 2005. In Uganda, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.151 in 2010 and 0.356 in 2008 with the greatest mean change being -0.299 between 2009 and 2010.

The discretionary accruals for Kenya, Tanzania and Uganda estimated using the McNichols model show minimum values of between -0.124 in 2007 and -0.337 in 2008 while the maximum values were between 0.083 in 2015 and 0.731 in 2008. The mean of the discretionary accruals show income increasing and income decreasing accruals of between -0.041 in 2015 and 0.022 in 2002 with the greatest mean change being -0.037 between 2002 and 2003. In Kenya, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.011 in 2003 and 0.034 in 2005 with the greatest mean change being 0.042 between 2004 and 2005. In Tanzania, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.111 in 2008 and 0.134 in 2004 with the greatest mean change being -0.216 between 2004 and 2005. In Uganda, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.151 in 2010 and 0.386 in 2008 with the greatest mean change being -0.366 between 2009 and 2010.

Using the Kothari model discretionary accruals for Kenya, Tanzania and Uganda show minimum values of between -0.114 in 2006 and -0.364 in 2010 while the maximum values were between 0.340 in 2010 and 0.722 in 2004. The mean of the discretionary accruals show income increasing and income decreasing accruals of between -0.030 in 2003 and 0.053 in 2004 with the greatest mean change being 0.083 between 2003 and 2004. In Kenya, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.025 in 2002 and 0.038 in 2004 with the greatest mean change being 0.062 between 2003 and 2004. In Tanzania, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.072 in 2003 0.157 in 2004 with the greatest mean change being 0.229 between 2003 and 2004. In Uganda, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.193 in 2010 and -170 in 2009 with the greatest mean change being -0.364 between 2009 and 2010.

The discretionary accruals for Kenya, Tanzania and Uganda estimated using the Yoon model show minimum values of between -0.280 in 2002 and -1.443 in 2011 while the maximum values were between 0.132 in 2003 and 1.185 in 2004. The mean of the discretionary accruals show income increasing and income decreasing accruals of between -0.007 in 2002 and 0.066 in 2004 with the greatest mean change being 0.129 between 2003 and 2004. In Kenya, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.055 in 2003 and 0.036 in 2004 with the greatest mean change being 0.091 between 2003 and 2004. In Tanzania, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.108 in 2003 and 0.231 in 2004 with the greatest mean change being 0.340 between 2003 and 2004. In Uganda, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.336 in 2007 and 0.077 in 2008 with the greatest mean change being 0.412 between 2007 and 2008.

Using the Augmented Jones model discretionary accruals for Kenya, Tanzania and Uganda show minimum values of between -0.065 in 2006 and -0.261 in 2012 while the maximum values were between 0.104 in 2016 and 0.681 in 2010. The mean of the discretionary accruals show income increasing and income decreasing accruals of between -0.025 in 2003 and 0.045 in 2004 with the greatest change being 0.070 between 2003 and 2004. In Kenya, the mean of discretionary accruals show income increasing and income decreasing accruals

of between -0.028 in 2002 and 0.028 in 2004 with the greatest mean change being 0.047 between 2003 and 2004. In Tanzania, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.100 in 2005 and 0.165 in 2004 with the greatest change being -0.265 between 2004 and 2005. In Uganda, the mean of discretionary accruals show income increasing and income decreasing accruals of between -0.106 in 2009 and 0.034 in 2007 with the greatest mean change being 0.124 between 2009 and 2010.

Real earnings management for Kenya, Tanzania and Uganda estimated show minimum values of between -0.441 in 2016 and -1.157 in 2006 while the maximum values were between 0.279 in 2002 and 2.121 in 2008. The mean shows income increasing and income decreasing values of between -0.050 in 2004 and 0.054 in 2010 with the greatest mean change being 0.078 between 2004 and 2005. In Kenya, the mean of real earnings management shows income increasing and income decreasing values of between -0.050 in 2004 and 0.054 in 2010 with the greatest change being 0.078 between 2004 and 2005. In Tanzania, the mean of real earnings management shows income increasing and income decreasing values of between -0.026 in 2005 and 0.058 in 2010 with the greatest change being 0.065 between 2006 and 2007. In Uganda, the mean of real earnings management shows income increasing and income decreasing values of between -0.173 in 2009 and 0.238 in 2010 with the greatest change being 0.412 between 2009 and 2010.

4.5 Goodness of fit of the models

Goodness of fit of the model refers to how well the model explains the variations in the dependent variable (Gujarati, 2012). It evaluates whether the model is good, reliable and valid to be used for prediction. In this study, the R squared, Standard error of estimate (S.E.) and the F-test statistic were used respectively to evaluate the goodness, reliability and validity of the various models.

The R squared measures how much of the variation in the dependent variable is explained by the independent variables (Gujarati, 2012). The coefficient usually lies between 0 and 1 whereby 0 indicates a complete lack of fit while 1 indicates a perfect fit. Therefore the closer it is to 1 the better the fit. The adjusted R squared is a better measure in this case because it is used to make comparison between two or more regression models that have the same dependent variable but different number of independent variables. The standard error of estimate is the standard estimate of the deviation of the dependent variable about the

regression line (Gujarati, 2012; Brooks, 2014). The smaller the estimate the better the fit to the actual data. The F-test statistic measures the overall significance of the regression model (Gujarati, 2012, Brooks, 2014). For the model to be significant, the p-value of the f-statistic should be less than the level of significance, in this case 0.05.

The results of the goodness of fit measures show that the augmented Jones model (2011) has the highest explanatory power with R-squared of 44.96% while the Yoon model (2006) has the lowest R-squared of 2.7%. Additionally the augmented Jones model (2011) has the smallest standard error of estimate (S.E.), a figure of 0.088 while the Yoon model (2006) has the highest standard of error, a figure of 0.186. However, all the models are concluded to be statistically significant as the F-statistics have a p-value of less than 0.05. Table 4.5 gives a summary of the results.

Table 4.2: Goodness of fit

Model	R-squared	Adjusted R-squared	S.E.	F-statistic	Prob(F-statistic)
Jones 1991	15%	15%	0.108	34.319	0.000
Jones 1995	14%	14%	0.109	30.967	0.000
Kaznik	32%	32%	0.097	88.19	0.000
DD	6%	5%	0.117	8.395	0.000
McNichols	7%	6%	0.117	7.951	0.000
Kothari	24%	23%	0.103	43.929	0.000
Yoon	3%	2%	0.186	5.219	0.001
Augmented Jones	45%	44%	0.088	74.339	0.000

4.6 Correlation analysis

The Pearson's correlation matrix, a parametric test, was used to examine the correlation of the coefficients. The results of the correlation indicate that there is a positive correlation between executive compensation and both accrual-based and real earnings management, showing that managers are likely to engage in earnings management to increase their compensation. Leverage is positively related with both accrual based and real earnings management as would be expected, showing that highly leveraged firms are more likely to engage in accrual-based earnings management. However the association is not significant. Size is negatively and significantly related with accrual based earnings management, showing that small firms are likely not to engage in accrual-based earnings management, however big firms are likely to engage in earnings management. However size is positively

and significantly related with real earnings management, showing that big firms are likely to engage real earnings management, however small firms are likely not to engage in real earnings management. Firm performance is positively and significantly related with both accrual-based and real earnings management, indicating that highly performing firms are likely to engage in the practice as opposed to poorly performing firms. The correlation matrix is attached as appendix VIII.

4.7 The relationship between executive compensation and earnings management

4.7.1 Executive compensation and accrual-based earnings management

Table 4.6 shows the results of the various regression models. The results show a positive and significant relationship between executive compensation and accrual-based earnings management by the models Jones 1991, Jones 1995, Kasznik, Kothari, Yoon and Augmented Jones. However no significant relationship is arrived at by the models DD and McNichols. This is based on the p-value of the coefficients that is less than 0.05 where there is a significant relationship while the sign of the coefficient tells us whether there is a positive or negative relationship. The F-statistic of all the regression models are significant as they are less than 0.05 meaning that the regression models are statistically significant. The highest R-squared is 37.58% by the Augmented Jones Model while the lowest R-squared is 7% by the McNichols Model. However, the change in R-squared is smallest for the Yoon model (0.47%) and largest for the McNichols model (0.69%).

The regressions using the Jones 1991; Jones 1995; Kasznik; DD; McNichols; Kothari; Yoon and Augmented Jones models show a positive relationship between executive compensation and earnings management, shown by the positive coefficient of the variable executive compensation which is 0.008; 0.008; 0.006; 0.007; 0.004; 0.008; 0.011 and 0.004 respectively. The relationship is however only significant by the models Jones 1991; Jones 1995; Kasznik; Kothari; Yoon and the Augmented Jones as is shown by the p-values of the coefficients (0.008; 0.002; 0.018; 0.002; 0.009; 0.035) which are less than the level of significance 0.05. The relationship is insignificant for the models DD and McNichols as is shown by the p-values of the coefficients (0.100; 0.298) which are more than the level of significance 0.05. The overall models are all statistically significant which is shown by the p-value of the f-statistic which is zero (less than the level of significance 0.05) for all the models.

Table 4.3: Regression results for accrual-based earnings management

Model	R Square	Adjusted R Square	R Square Change	F-statistic	P-Value	Variables	Coefficient	Standard error of estimate	t- statistic	P-value
Jones 1991	16%	16%	1%	27.277	0.000	Executive compens	0.008	0.003	2.678	0.008
						Size	-0.016	0.004	-4.328	0.000
						Leverage	0.024	0.016	1.498	0.135
						Performance	0.225	0.023	9.731	0.000
						C	0.133	0.038	3.538	0.000
Jones 1995	16%	16%	1%	27.237	0.000	Executive compens	0.008	0.003	2.688	0.002
						Size	-0.016	0.004	-4.323	0.000
						Leverage	0.023	0.016	1.421	0.114
						Performance	0.226	0.023	9.709	0.000
						C	0.134	0.038	3.529	0.001
Kasznik	29%	29%	1%	57.561	0.000	Executive compens	0.006	0.002	2.375	0.018
						Size	-0.018	0.003	-5.981	0.000
						Leverage	0.022	0.013	1.670	0.095
						Performance	0.265	0.019	13.933	0.000
						C	0.188	0.031	6.092	0.000
DD	8%	7%	1%	10.603	0.000	Executive compens	0.006	0.003	1.648	0.100
						Size	-0.011	0.004	-2.606	0.009
						Leverage	-0.020	0.018	-1.074	0.283
						Performance	0.159	0.030	5.360	0.000
						C	0.097	0.044	2.184	0.029
McNichols	7%	6%	1%	9.712	0.000	Executive compens	0.004	0.003	1.043	0.298
						Size	-0.010	0.004	-2.430	0.015
						Leverage	-0.016	0.018	-0.874	0.382
						Performance	0.153	0.030	5.152	0.000
						C	0.108	0.044	2.455	0.014
Kothari	12%	12%	1%	19.438	0.000	Executive compens	0.008	0.003	3.107	0.002
						Size	-0.017	0.004	-4.904	0.000
						Leverage	0.004	0.015	1.129	0.259
						Performance	0.181	0.022	7.601	0.000
						C	0.153	0.037	4.176	0.000
Yoon	35%	34%	0%	73.773	0.000	Executive compens	0.011	0.004	2.627	0.009
						Size	-0.034	0.005	-6.516	0.000
						Leverage	0.039	0.023	1.702	0.089
						Performance	0.529	0.033	15.882	0.000
						C	0.356	0.054	6.535	0.000
Augmented Jones	38%	37%	1%	65.281	0.000	Executive compens	0.004	0.002	2.119	0.035
						Size	-0.014	0.003	-5.405	0.000
						Leverage	0.014	0.011	1.255	0.210
						Performance	0.280	0.016	17.120	0.000
						Lagged Accruals	-0.090	0.030	-3.000	0.003
						C	0.137	0.027	5.081	0.000

4.7.2 Executive compensation and real earnings management

The table below shows the results of the regression model. The results show a negative and significant relationship between R executive compensation and real earnings management. This is based on the p-value of the coefficient (0.000) that is less than 0.05 where there is a significant relationship while the sign of the coefficient (-0.275) shows there is a negative relationship. The F-statistic is less than the significance level 0.05 meaning that the regression model is statistically significant. The R-squared is 37.42%.

Table 4.4: Regression results for real earnings management

Model	R Square	Adjusted	F-statistic	P-Value	Variables	Coefficient	Standard error of estimate	t- statistic	P-value
Real Earnings Management	37.42%	36.84%	64.116	0.000	Executive	-0.275	0.069	-3.971	0.0001
					Size	0.327	0.083	3.926	0.0001
					Leverage	0.596	0.339	1.756	0.0796
					Performance	-0.795	0.514	-1.545	0.123
					Cash flow	-12.731	0.937	-13.594	0
					Constant	-0.657	0.852	-0.771	0.441

4.8 Perception of industry players on the extent of earnings management and its relationship to executive compensation

4.8.1 Response rate

A total of 210 questionnaires were emailed to respondents; two questionnaires to each of the 41 companies were issued, one to the finance manager, one to the accountants and one to the internal audit department; 41 to investment analysts and 41 to external auditors. Out of the 205 questionnaires issued, 105 responded giving a response rate of 51.2%.

4.8.2 Demographic characteristics

Most of the respondents were female (53%) as compared to the male (47%). The results also show that majority of the respondents were accountants at 53%, finance managers represented 18% followed by internal auditors at 14%, then investment analysts at 10% and lastly external auditors at 4%. Additionally, majority of the respondents had work experience of between 5 to 10 years (44%), followed very closely with those between 1 to 4 years (43%) work experience, then those with between 11 and 15 years work experience (13%). The results also show that majority of the respondents had the knowledge to answer the questions. This is shown by the professional certification whereby majority of the respondents had CPA (96%). Additionally, 13% had ACCA and 14% had CISA certification. Finally, 64% of the companies in question had operations in one country in East Africa, 10% in two countries, 15% in four countries and 10% in five countries.

4.8.3 Extent of earnings management

The extent of earnings management was assessed by inquiring from the respondents about techniques used in earnings management practice. The questions used a Likert scale where 1 represented very low likelihood of the technique being used while 5 represented very high likelihood of the technique in question being used. The weighted average mean was used to

show where majority of the responses did lie. The techniques with high likelihood of being used for earnings management included increase of account receivable (55%); decrease of accounts receivable through the provision of bad debts (50%); decrease of depreciation amount through changing the depreciation method when necessary (51%); increase of revenue amount by overstating it (61%); overproduction to report lower costs of goods sold (54%).

Table 4. 5: Techniques used in Earnings Management

Statement	1	2	3	4	5	Weighted Average Mean
	Very Low	Low	Not used	High	Very High	
Increase of accounts receivable (Debtors) through the provision for bad debts or bad debt expense.	10%	14%	20%	55%	0%	3.200
Decrease of accounts receivable (Debtors) through the provision for bad debts or bad debt expense.	9%	21%	20%	50%	0%	3.124
Increase of depreciation amount through changing the depreciation method used when necessary.	20%	10%	20%	30%	19%	3.181
Decrease of depreciation amount through changing the depreciation method used when necessary.	9%	11%	18%	51%	10%	3.438
Increase of Various Expenses (Research and Development cost, maintenance expense)	10%	22%	9%	42%	18%	3.371
Decrease of Various Expenses (Research and Development cost, maintenance expense)	30%	19%	7%	24%	20%	2.838
Increase of revenue amount by overstating it.	14%	6%	9%	61%	10%	3.476
Decrease of revenue amount by understating it.	42%	40%	10%	5%	3%	1.867
Increase of cash flow amount to avoid situation of deficit.	8%	13%	20%	49%	10%	3.410
Capitalization rather than expensing expenditure even in situations where expensing is the correct treatment.	0%	11%	74%	14%	0%	3.029
Controlling the outcome of inventory valuation by alternating accounting methods.	7%	24%	18%	20%	31%	3.457
Use of price discounts to temporarily increase sales	10%	17%	33%	40%	0%	3.038
Overproduction to report lower cost of goods sold	5%	16%	14%	54%	10%	3.495

The respondents were also asked whether they were of the opinion that the listed companies recognize revenue in the period not related to it. Majority of the respondent had a “yes” opinion, representing 58% while those of the “no” opinion represented 42%.

4.8.4 Relationship between executive compensation and earnings management

The results showed that the most common form of remuneration for directors and senior executives was salary, representing 90%. This was followed by bonus representing 71%, long-term incentives represented 12% and lastly stock options was represented by 9%. The respondents were inquired about their opinion on the relationship between executive compensation and earnings management. 31% of the respondents strongly agreed that executive compensation and earnings management are related, the higher the management pay based on company performance the higher the chances of the practice. 39% of the respondents agreed with the statement, 11% disagreed, 8% strongly disagreed while 10% were not sure. The chart below shows the visual representation of the results.

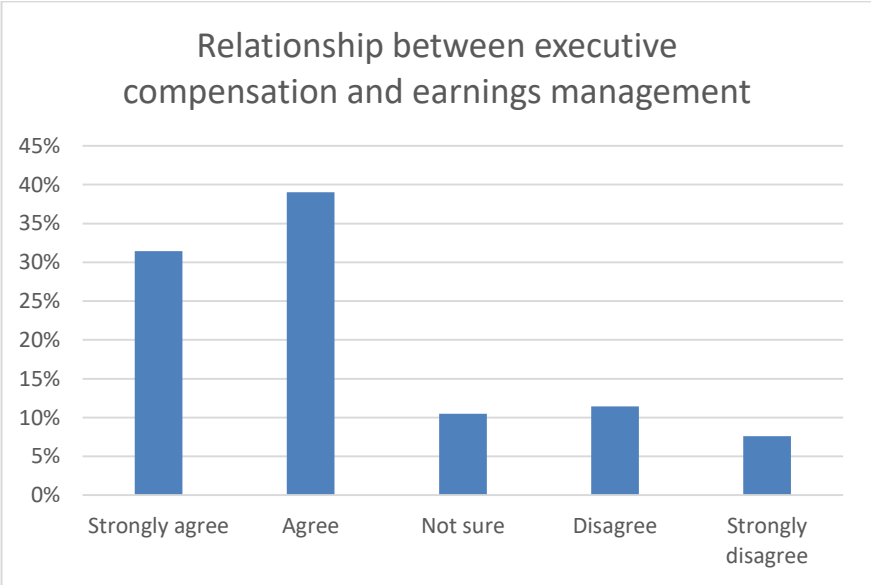


Figure 4. 1: Relationship between executive compensation and earnings management

4.8.5 Factors that influence earnings management

The respondents were inquired about their opinion on the factors that influence earnings management. The table below shows the results.

Table 4.6: Factors influencing earnings management

Factors	1	2	3	4	5	Weighted Average Mean	Rank
	Strongly disagree	Disagree	No opinion	Agree	Strongly agree		
Amount of debt held by the company	0%	19%	30%	40%	10%	3.419	5
Size of the company	0%	0%	21%	21%	58%	4.371	1
Audit quality	0%	12%	10%	44%	33%	3.981	2
Compensation paid to management	0%	20%	10%	42%	29%	3.790	4
Industry sector	0%	30%	20%	50%	0%	3.210	6
Auditor independence	0%	12%	12%	50%	25%	3.876	3
Firm age	0%	22%	51%	18%	9%	3.133	7

The various factors were ranked in order of the weighted average mean. The results show that the factors rank in the following order: size of the company, audit quality, auditor independence, compensation paid to management, debt, industry sector and firm age. The graph below shows a visual representation of the factors influencing earnings management.

4.9 Comparison of findings from secondary data and primary data

The findings from both secondary and primary sources seem to be complementary. Majority of the respondents were of the opinion that the listed companies recognize revenue in the period not related to it (58% of the respondents). The results from the secondary data showed that the listed companies do engage in both income increasing and income decreasing earnings management. Similarly, majority of the respondents agreed that executive compensation and earnings management are related, the higher the management pay based on company performance the higher the chances of the practice. (31% for strongly agreed and 39% for agreed). This is supported by the findings from the secondary data analysis that showed a positive and significant relationship between executive compensation and accrual based earnings management. However, the relationship was negative but also significant between executive compensation and accrual based earnings management.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter includes discussion of the findings in relation to the objectives of the study. It also includes the conclusions of the study. Thereafter, the contribution to knowledge is highlighted, limitations of the research are noted down and finally recommendations for further research are given.

5.2 Discussion of findings

This study aimed at determining the relationship between executive compensation and earnings management. The objectives of this study therefore were to determine the extent of earnings management; to determine the relationship between executive compensation and earnings management and to obtain perspectives of industry players on the extent of earnings management and its relationship to executive compensation among non-financial firms listed on the securities exchange in East Africa. The relationship was analyzed using pooled OLS regression analysis. Questionnaires distributed to industry players were used to obtain perspectives of industry players. The findings are discussed according to the objectives of the study.

5.2.1 Determining the extent of earnings management among non-financial companies listed on the securities exchange in East Africa

This study sought to measure earnings management using two strategies, accrual-based and real earnings management. Discretionary accruals were used as a proxy to measure accrual-based earnings management, in consistent with prior studies on earnings management. Different models obtained from literature were used to estimate the discretionary accruals: Jones 1991, Jones 1995, Kasznik, Dechow and Dichev, McNichols, Kothari, Yoon and Augmented Jones Model with reversals. Real earnings management was estimated as a measure of abnormal accruals from sales manipulation and overproduction.

Earnings management among the companies were observed to consist of both income increasing and income decreasing accruals, but none were equal to zero. In a situation where earnings management is absent, the values should be equal to zero (Salah, 2011). Negative values are income decreasing whereas positive values are income increasing. This finding is consistent with other studies in East Africa (Njogu, 2016, Swai & Mbogela, 2016). The

mean of the discretionary accruals showed greatest change between 2002 and 2005 for the Jones 1991 model (-0.056); Jones 1995 model (0.085); Kasznik model (-0.076); DD model (-0.035); McNichols model (-0.037); Kothari model (0.083); Yoon model (0.129) and Augmented Jones (0.070). For real earnings management, the mean showed greatest change between 2004 and 2005 (0.078). In Kenya, the greatest change in the mean of discretionary accruals was observed in the years 2003-2005 for the Jones 1991 model (0.061); Jones 1995 model (0.056); Kasznik model (-0.048); DD model (-0.042); McNichols model (0.042); Kothari model (0.062); Yoon model (0.091) and Augmented Jones (0.047). For real earnings management, the mean showed greatest change between 2004 and 2005 (0.078). In Tanzania, the greatest change in the mean of discretionary accruals was observed in the years 2003-2005 for the Jones 1991 model (0.232); Jones 1995 model (0.232); Kasznik model (0.213); DD model (-0.219); McNichols model (-0.216); Kothari model (0.229); Yoon model (0.340) and Augmented Jones (-0.265). For real earnings management, the mean showed greatest change between 2006 and 2007 (0.065). In Uganda, the greatest change in the mean of discretionary accruals was observed in the years 2007-2010 for the Jones 1995 model (-0.383); Kasznik model (-0.283); DD model (-0.299); McNichols model (-0.366); Kothari model (0.364); Yoon model (0.412) and Augmented Jones (0.124). For real earnings management, the mean showed greatest change between 2009 and 2010 (0.412). The great changes for Kenya and Tanzania are observed in the prior years of 2003-2005 which could be due to the effects of the Code of corporate governance which was introduced in the region in 2002.

5.2.2 The relationship between executive compensation and earnings management

Pearson's correlation was used to give an indication of the strength and direction of the relationship between the variables used in the model and in the study. Appendix VIII shows the correlation coefficients between the variables used in the study. The coefficient of correlation between discretionary accruals from the various models and executive compensation was found to be positive, meaning that as discretionary accruals increased, executive compensation also increased and vice-versa. The relationship was also statistically significant at the 5% level of significance. This finding was consistent with Lakhal (2014); Li (2017); Njogu (2016); Nurdiniah & Herlina (2015). This finding was however inconsistent with Hassen (2014) that found the relationship to be negative and also inconsistent with Karimi et al (2014); Zhou et al. (2016) who found no significant relationship. The coefficient of correlation between real earnings management and

executive compensation was however found to be negative, meaning that as real earnings management increased, executive compensation decreased and vice-versa. The relationship was also statistically significant at the 1% level of significance. This finding was inconsistent with Li (2017) and Zhou et al. (2016) who both found a negative relationship.

The F-statistics and their significance (P-value) was less than 0.05, therefore the regression model was accepted. The value of the coefficient of determination (r^2) was 16.35% for Jones 1991 model; 16.38% for Jones 1995 model; 29.24% for Kasznik model; 7.63% for DD model; 7% for McNichols model; 12.23% for Kothari model; 34.67% for Yoon Model; and 37.58% for augmented Jones model which are not significant.

There was a positive relationship between executive compensation (EXECOMP) and discretionary accruals (accrual-based earnings management) shown by the positive coefficient. The relationship was also significant, as shown by the significance value of the coefficient which was smaller than 0.05. Therefore the researcher failed to reject the null hypothesis. This finding was consistent with Lakhali (2014); Li (2017); Njogu (2016); Nurdiniah & Herlina (2015). This finding was however inconsistent with Hassen (2014) that found the relationship to be negative and also inconsistent with Karimi et al. (2014); Zhou et al. (2016) who found no significant relationship. However, there was a negative relationship between executive compensation and real earnings management shown by the negative coefficient. The relationship was also significant, as shown by the significance value of the coefficient which was smaller than 0.05. This finding was inconsistent with Li (2017) and Zhou et al. (2016) who both found a negative relationship.

5.2.3 Perception of industry players on the extent of earnings management and its relationship to executive compensation

Results from the questionnaire show that most respondents were of the opinion that listed companies do recognize revenue in the period not related to it. This finding was consistent with Waiguru (2013). The respondents were also of the opinion that the techniques that had high likelihood of being used for earnings management included increase or decrease of accounts receivable; increase or decrease of depreciation amount; increase or revenue amount by overstating it. The findings were consistent with Waiguru (2013). 31% of the respondents strongly agree that executive compensation and earnings management are related, the higher the management pay based on company performance the higher the chances of the practice.

5.3 Conclusion

This study aimed at estimating the extent of earnings management using both accrual-based and real earnings management strategies. There was no observable trend of both accrual-based and real earnings management from 2002 to 2016. The results showed the use of both income increasing and income decreasing earnings management.

The study also aimed at determining the relationship between executive compensation and earnings management. The findings showed that there was a significant positive relationship between executive compensation and accrual-based earnings management. The findings were consistent with the positive accounting theory that hypothesize that the more the pay is based on performance, the higher the likelihood of earnings management. However, there was a significant negative relationship between executive compensation and real earnings management. This finding was consistent with the agency theory that hypothesizes alignment of executives' interests with those of the shareholders. In fact, and according to the agency theory, shareholders are implementing optimal contracts with executives whose remuneration of these in order to ensure the convergence of interests and reduce agency problems. Thus, with a higher pay, the leader would be less opportunistic, reducing its propensity to manage the company's results and to alter the contract that binds with shareholders. This behavior may be motivated by the desire to retain its leadership work and thereby avoid the risk of replacement.

The study also aimed at obtaining the perspectives of industry players on the extent of earnings management and its relationship to executive compensation among non-financial firms listed on the securities exchange in East Africa. 58% of the respondents were of the opinion that listed companies recognize revenue in the period not related to it. Additionally, the respondents were of the opinion that there are other factors that influence earnings management including: size of the company, audit quality, auditor independence, compensation paid to management, debt, industry sector and firm age.

5.4 Research implications and recommendations

Based on the analysis of data and research findings, there are a number of recommendations that are applicable to remuneration committees, management of companies, investors and regulators.

5.4.1 Investors

Given the significant relationship between executive compensation and accrual-based earnings management, investors who are should exercise caution in determining the amount paid to directors and senior management of companies as there may be tendency to engage in earnings management in an attempt to increase their remuneration. This is important so as to align the interests of executives with those of shareholders. The findings also revealed that listed companies do engage in both income decreasing and income increasing accruals, hence prospective investors should also exercise caution when relying on financial statements to make investment decisions.

5.4.2 Researchers and Scholars

The findings showed that the different models used to estimate accrual-based earnings management have different explanatory powers that influenced the results of the study. The current models also do have low explanatory power hence research should be done to find better models to estimate earnings management. Additionally, the findings showed that companies do engage in real earnings management, hence researchers should incorporate real earnings management strategies in addition to accrual-based strategies when studying earnings management.

5.4.3 Policy makers and regulators

Given that listed companies do engage in earnings management practices to either increase or decrease reported income, policy makers and industry regulators should monitor trends and patterns of the practice in order to give regulations and guidelines.

5.5 Contribution to knowledge

This study sought to build on to the positive accounting theory- bonus plan hypothesis and agency theory by determining the relationship between executive compensation and earnings management. The study used multiple models in the examination of earnings management in an attempt to bridge the inconsistencies in research. Additionally, the study sought to add to the existing body of knowledge by incorporating real earnings management where scanty research has been done in relation to executive compensation. Further, the study sought the views of industry players in an attempt to better understand the extent of earnings management.

5.6 Limitations of the research

One of the limitations of this research was that it only focused on non-financial companies listed on the securities exchange. The study excluded financial companies and also companies which are not listed on the securities exchange. Another limitation was in the tool of analysis used i.e. regression. The regression analysis tools has various assumptions such as linearity which assumes that the relationship between the dependent and independent variable is linear. However regression was the best tool for analysis in this study. This research also faced limitation in the availability of the annual reports of some companies listed on the securities exchange. Even though companies listed on the NSE are required to publish their financial statements with the NSE and CMA some companies fail to do so. There was also a limitation in obtaining data related to discretionary expenses required to estimate real earnings management. Companies in East Africa provide information on research and development cost separately from selling, general and administrative costs. Therefore this study relied on only two measures of real earnings management: sales manipulation and overproduction.

5.7 Areas for further research

It is recommended that studies are conducted among companies that are in the financial sector and also companies which are not listed on the securities exchange. It is further recommended that other tools of analysis are used that are more applicable in order to have more accurate findings.

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APPENDICES

APPENDIX I: RESEARCH PERMIT LETTER



12th March 2018

TO WHOM IT MAY CONCERN

Academic Reference for Ger, Carol Owenga Student No. 66451

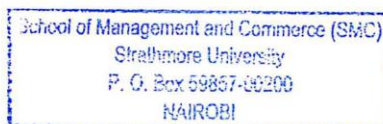
Ms Ger, Carol Owenga is a postgraduate student in our Master of Commerce (MCom) programme. In partial fulfilment of the MCom degree, students are required to carry out a research project and write a thesis on a contemporary subject within their field of specialisation. Among other activities, the project involves data collection and analysis.

Carol is requesting to gather information to be used in her research. The information she will obtain from your organization will be used for this academic purpose only and will be kept confidential. The results of the survey will be in summary form and will not disclose any individual, company name or company information in any way.

The research study is entitled “**The Relationship between Executive Compensation and Earnings Management among Non-Financial Firms Listed on the Securities Exchange in East Africa.**”

We hope that your organization can assist by providing information to the above named student.

Yours faithfully,



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School of Management and Commerce
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APPENDIX II: QUESTIONNAIRE

The purpose of this questionnaire is to collect data on earnings management. All information given in this questionnaire will be treated with the deserving confidentiality and will be used purely for academic purposes.

Part one: General information

1. Gender. Male [] Female []
2. Occupation. Finance manager [] Accountant [] Internal auditor [] External auditor [] Investment Analyst [] Other.....
3. Length of experience in this position. Less than 1 year [] between 1 to 4 years [] between 5 to 10 years [] between 11 to 15 years [] Over 15 years []
4. In how many countries within East Africa is your company listed?
5. Which professional certification do you hold? (CPA, ACCA, CFA, CFE, CISA etc.)
.....

Part two: Determining the techniques used in earnings management

Earnings management is the use of management discretion to elect certain accounting practices in order to increase or decrease reported earnings.

Executive compensation is the remuneration paid to directors and senior management.

1.) Indicate through ticking, to what extent the following major financial reporting alterations are used to increase or decrease reported earnings

Statement	1 Very Low	2 Low	3 Not used	4 High	5 Very High
Increase of accounts receivable (Debtors) through the provision for bad debts or bad debt expense.					
Decrease of accounts receivable (Debtors) through the provision for bad debts or bad debt expense.					
Increase of depreciation amount through changing the depreciation method used when necessary.					

Decrease of depreciation amount through changing the depreciation method used when necessary.					
Increase of Various Expenses (Research and Development cost, maintenance expense)					
Decrease of Various Expenses (Research and Development cost, maintenance expense)					
Increase of revenue amount by overstating it.					
Decrease of revenue amount by understating it.					
Increase of cash flow amount to avoid situation of deficit.					
Capitalization rather than expensing expenditure even in situations where expensing is the correct treatment.					
Controlling the outcome of inventory valuation by alternating accounting methods.					
Use of price discounts to temporarily increase sales					
Overproduction to report lower cost of goods sold					
Any other comment					

2.) In your opinion, does you think that companies recognize revenue in the period not related to it? If yes, what makes you think so?

Part three: Determining the relationship between executive compensation and earnings management

1.) What are the forms of remuneration for directors and senior executives in your company? Indicate the most appropriate answer by ticking.

- Salary
- Bonus
- Stock options

Long-term incentive plans

Other, please specify _____

2.) On a scale of 1 -5, rate the following statements.

Statements	(1) Strongly agree	(2) Agree	(3) Not sure	(4) Disagree	(5) Strongly Disagree
Executive compensation and earnings management are related, the higher the management pay based on company performance the higher the chances of the practice.					
Executive compensation and earnings management are related, the higher the management pay based on company performance the lower the chances of the practice.					
Executive compensation and earnings management are not related, the management pay based on company performance does not influence the chances of the practice.					

3.) Indicate through ticking, to what extent the following factors influence earnings management practice.

Factors	(1) Strongly agree	(2) Agree	(3) No opinion	(4) Disagree	(5) Strongly Disagree
Amount of debt held by the company					
Size of the company					
Audit quality					
Compensation paid to management					
Industry sector					
Auditor independence					
Firm age					
Any other factors					

Thank you for your assistance.

APPENDIX III: List of companies included in the final sample

Kenya	Tanzania	Uganda
Kakuzi Limited	Swissport Tanzania Ltd.	New Vision Printing and Publishing
Rea Vipingo Ltd.	Tanga Cement Ltd.	Uganda Clays Ltd.
Kapchorua Tea Limited	Tanzania Breweries Ltd.	
Limuru Tea Limited Company	Tanzania Cigarette Company Ltd.	
Sasini Limited	Tanzania Portland Cement Ltd.	
Williamson Tea Kenya	Tanzania Tea Packers	
Car & General Kenya Limited	TOL Gases	
Marshalls E.A Limited		
Sameer Africa Limited		
Express Limited		
Kenya Airways Limited		
Nation Media Group Limited		
Scangroup Limited		
Standard Group Limited		
TPS EA (Serena) Limited		
Athi River Mining Limited		
Bamburi Cement Limited		
Crown Paints Kenya Limited		
East Africa Cables Limited		
East Africa Portland cement		
KenGen Limited		
KenolKobil Limited		
Kenya Power & Lightning Company		
Total Kenya Limited		
B.O.C Kenya		
BAT Kenya Limited		
Carbacid Investments Limited		
East African Breweries Limited		
Eveready East Africa Limited		
Mumias Sugar Company		
Unga Group Limited		
Safaricom Limited		

Source: Nairobi Securities Exchange (2018); Dar es Salaam Stock Exchange (2018) and Uganda Securities Exchange (2018)

APPENDIX IV: Descriptive statistics on earnings management for Kenya, Tanzania and Uganda

Year	Jones 1991						Jones 1995						Kasznik						DD						McNichols					
	N	Min	Max	Mean	Change	Standard Deviation	N	Min	Max	Mean	Change	Standard Deviation	N	Min	Max	Mean	Change	Standard Deviation	N	Min	Max	Mean	Change	Standard Deviation	N	Min	Max	Mean	Change	Standard Deviation
2002	32	-0.210	0.230	-0.028	-0.006	0.081	32	-0.211	0.232	-0.029	-0.006	0.081	32	-0.159	0.180	-0.029	-0.005	0.068	31	-0.137	0.285	0.018	-0.035	0.092	31	-0.142	0.284	0.022	-0.037	0.091
2003	32	-0.170	0.070	-0.034	0.082	0.059	32	-0.171	0.071	-0.035	0.085	0.059	32	-0.142	0.088	-0.034	0.076	0.061	32	-0.277	0.155	-0.017	0.030	0.083	32	-0.276	0.132	-0.015	0.024	0.083
2004	32	-0.140	0.740	0.048	-0.056	0.151	32	-0.142	0.739	0.050	-0.060	0.153	32	-0.139	0.684	0.042	-0.047	0.138	32	-0.147	0.683	0.014	0.007	0.139	32	-0.147	0.701	0.010	0.011	0.141
2005	33	-0.190	0.260	-0.008	0.021	0.094	33	-0.196	0.262	-0.010	0.023	0.094	33	-0.140	0.228	-0.005	0.026	0.088	33	-0.203	0.258	0.020	-0.014	0.102	33	-0.201	0.255	0.020	-0.014	0.104
2006	37	-0.130	0.480	0.012	-0.003	0.107	37	-0.130	0.492	0.013	-0.002	0.108	37	-0.087	0.384	0.021	-0.004	0.086	37	-0.220	0.210	0.006	-0.008	0.100	37	-0.216	0.187	0.007	-0.010	0.095
2007	38	-0.270	0.310	0.010	0.000	0.118	38	-0.266	0.326	0.011	0.001	0.119	38	-0.139	0.254	0.017	0.003	0.087	38	-0.133	0.124	-0.002	0.001	0.061	38	-0.124	0.112	-0.004	0.001	0.055
2008	40	-0.290	0.450	0.009	-0.013	0.123	40	-0.298	0.443	0.012	-0.006	0.121	40	-0.227	0.404	0.020	-0.009	0.105	40	-0.363	0.756	-0.001	0.021	0.181	40	-0.337	0.731	-0.002	0.024	0.180
2009	41	-0.170	0.350	-0.004	0.002	0.103	41	-0.175	0.513	0.007	-0.015	0.131	41	-0.150	0.342	0.011	-0.011	0.111	41	-0.266	0.595	0.019	-0.022	0.161	41	-0.191	0.599	0.022	-0.028	0.159
2010	41	-0.190	0.690	-0.002	0.003	0.145	41	-0.368	0.699	-0.009	0.011	0.156	41	-0.282	0.777	0.000	0.006	0.161	41	-0.285	0.326	-0.003	0.017	0.126	41	-0.305	0.297	-0.006	0.016	0.127
2011	41	-0.340	0.220	0.001	0.007	0.097	41	-0.345	0.229	0.002	0.006	0.098	41	-0.210	0.345	0.006	0.003	0.088	41	-0.194	0.496	0.014	-0.001	0.115	41	-0.185	0.484	0.010	0.002	0.115
2012	40	-0.210	0.410	0.008	-0.011	0.107	40	-0.210	0.414	0.007	-0.012	0.107	40	-0.220	0.440	0.009	-0.017	0.104	39	-0.313	0.462	0.013	-0.025	0.125	39	-0.324	0.453	0.012	-0.023	0.127
2013	39	-0.230	0.150	-0.003	0.008	0.087	39	-0.228	0.150	-0.004	0.007	0.088	39	-0.215	0.092	-0.009	-0.001	0.070	39	-0.285	0.221	-0.012	-0.032	0.093	39	-0.261	0.198	-0.011	-0.030	0.090
2014	39	-0.150	0.200	0.005	-0.015	0.070	39	-0.156	0.206	0.003	-0.017	0.071	39	-0.133	0.190	-0.010	-0.010	0.068	39	-0.311	0.063	-0.044	0.024	0.067	39	-0.301	0.083	-0.041	0.023	0.068
2015	41	-0.210	0.470	-0.009	0.000	0.106	41	-0.213	0.470	-0.013	0.005	0.106	41	-0.263	0.423	-0.020	0.001	0.107	39	-0.338	0.304	-0.020		0.110	39	-0.319	0.286	-0.018		0.107
2016	41	-0.250	0.220	-0.010		0.080	41	-0.256	0.220	-0.009		0.081	41	-0.178	0.206	-0.020		0.076												
Year	Kothari						Yoon						Augmented Jones						Real EM											
	N	Min	Max	Mean	Change	Standard Deviation	N	Min	Max	Mean	Change	Standard Deviation	N	Min	Max	Mean	Change	Standard Deviation	N	Min	Max	Mean	Change	Standard Deviation	N	Min	Max	Mean	Change	Standard Deviation
2002	33	-0.215	0.228	-0.015	-0.015	0.087	33	-0.280	0.574	-0.007	-0.057	0.144	31	-0.085	0.280	-0.013	-0.012	0.066	26	-0.988	0.279	-0.011	-0.001	0.237						
2003	32	-0.173	0.082	-0.030	0.083	0.062	33	-1.265	0.132	-0.063	0.129	0.238	31	-0.186	0.144	-0.025	0.070	0.060	26	-0.892	0.312	-0.012	-0.038	0.232						
2004	32	-0.141	0.722	0.053	-0.060	0.153	33	-0.305	1.185	0.066	-0.062	0.250	32	-0.102	0.741	0.045	-0.055	0.146	26	-0.956	0.600	-0.050	0.078	0.305						
2005	33	-0.158	0.152	-0.007	0.026	0.076	34	-0.348	0.207	0.003	0.020	0.096	32	-0.223	0.223	-0.010	0.027	0.093	28	-0.641	0.635	0.028	-0.062	0.250						
2006	37	-0.114	0.481	0.019	-0.009	0.110	37	-0.125	0.269	0.023	-0.012	0.072	34	-0.065	0.239	0.017	-0.008	0.055	30	-1.157	0.642	-0.034	0.024	0.288						
2007	38	-0.271	0.314	0.010	-0.001	0.106	38	-0.336	0.214	0.011	0.040	0.098	37	-0.127	0.184	0.009	0.000	0.056	30	-0.755	0.479	-0.009	0.057	0.238						
2008	40	-0.287	0.445	0.009	-0.014	0.122	40	-0.195	0.656	0.051	-0.046	0.163	38	-0.157	0.414	0.009	-0.005	0.097	30	-0.675	2.121	0.048	-0.047	0.399						
2009	41	-0.243	0.496	-0.005	-0.016	0.132	41	-0.334	0.334	0.005	-0.020	0.133	40	-0.253	0.294	0.004	-0.001	0.086	31	-0.445	0.278	0.001	0.053	0.199						
2010	41	-0.364	0.340	-0.021	0.019	0.112	41	-0.464	0.587	-0.015	-0.001	0.168	41	-0.195	0.681	0.004	0.004	0.135	31	-0.459	0.571	0.054	-0.009	0.184						
2011	41	-0.349	0.218	-0.002	0.007	0.094	41	-1.443	0.359	-0.016	0.041	0.248	41	-0.154	0.191	0.007	-0.003	0.066	30	-0.521	0.549	0.045	-0.002	0.185						
2012	40	-0.207	0.291	0.005	-0.007	0.096	40	-0.297	0.841	0.025	-0.053	0.165	40	-0.261	0.391	0.004	-0.019	0.099	30	-0.432	0.573	0.043	-0.044	0.182						
2013	39	-0.232	0.142	-0.002	0.006	0.085	38	-1.027	0.212	-0.028	0.021	0.208	39	-0.173	0.124	-0.015	0.000	0.061	29	-0.518	0.854	-0.001	-0.014	0.234						
2014	39	-0.151	0.204	0.004	-0.012	0.073	38	-0.497	0.192	-0.007	-0.005	0.123	39	-0.17	0.157	-0.015	0.008	0.058	29	-0.498	0.267	-0.015	0.023	0.190						
2015	41	-0.212	0.468	-0.009	0.005	0.107	40	-0.950	0.946	-0.012	-0.023	0.254	39	-0.211	0.439	-0.007	-0.009	0.102	31	-0.561	0.380	0.007	0.001	0.185						
2016	40	-0.257	0.212	-0.004		0.077	40	-1.257	0.468	-0.035		0.255	39	-0.145	0.104	-0.016		0.053	31	-0.441	0.656	0.009		0.193						

APPENDIX V: Descriptive statistics on earnings management for Kenya

Year	Jones 1991						Jones 1995						Kasznik						DD						McNichols					
	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation
2002	28	-0.212	0.102	-0.040	0.011	0.066	28	-0.211	0.103	-0.041	0.012	0.066	28	-0.159	0.058	-0.044	0.011	0.050	27	-0.137	0.285	0.020	-0.033	0.097	27	-0.142	0.284	0.024	-0.035	0.095
2003	28	-0.169	0.069	-0.029	0.061	0.061	28	-0.171	0.071	-0.030	0.064	0.061	28	-0.142	0.088	-0.034	0.056	0.059	28	-0.277	0.155	-0.013	0.009	0.083	28	-0.276	0.132	-0.011	0.003	0.084
2004	28	-0.140	0.210	0.032	-0.040	0.086	28	-0.142	0.209	0.034	-0.045	0.090	28	-0.139	0.202	0.023	-0.028	0.076	28	-0.147	0.109	-0.005	0.038	0.069	28	-0.147	0.098	-0.008	0.042	0.065
2005	29	-0.188	0.258	-0.009	0.018	0.091	29	-0.196	0.262	-0.010	0.020	0.090	29	-0.131	0.228	-0.005	0.016	0.087	29	-0.203	0.258	0.034	-0.020	0.099	29	-0.143	0.255	0.034	-0.019	0.099
2006	31	-0.129	0.483	0.009	0.010	0.104	31	-0.130	0.492	0.010	0.011	0.105	31	-0.087	0.384	0.011	0.005	0.078	31	-0.22	0.210	0.014	-0.020	0.089	31	-0.205	0.187	0.015	-0.022	0.083
2007	31	-0.259	0.314	0.020	-0.017	0.114	31	-0.265	0.326	0.021	-0.016	0.116	31	-0.139	0.254	0.016	-0.014	0.086	31	-0.133	0.088	-0.006	0.007	0.052	31	-0.104	0.100	-0.007	0.004	0.044
2008	31	-0.295	0.228	0.003	-0.001	0.112	31	-0.298	0.231	0.005	-0.005	0.111	31	-0.227	0.194	0.001	0.000	0.091	31	-0.363	0.756	0.002	0.012	0.165	31	-0.337	0.731	-0.003	0.016	0.159
2009	32	-0.175	0.347	0.002	-0.001	0.105	32	-0.175	0.346	0.001	0.001	0.106	32	-0.139	0.310	0.001	0.001	0.094	32	-0.197	0.595	0.014	-0.015	0.134	32	-0.191	0.599	0.012	-0.017	0.137
2010	32	-0.189	0.691	0.001	-0.003	0.159	32	-0.192	0.699	0.002	-0.003	0.159	32	-0.241	0.777	0.002	-0.005	0.161	32	-0.278	0.326	-0.001	0.005	0.128	32	-0.305	0.297	-0.005	0.004	0.129
2011	32	-0.340	0.130	-0.002	0.010	0.085	32	-0.345	0.129	-0.001	0.009	0.086	32	-0.210	0.163	-0.003	0.004	0.076	32	-0.194	0.496	0.004	0.005	0.123	32	-0.185	0.484	-0.001	0.008	0.122
2012	31	-0.207	0.412	0.008	-0.005	0.116	31	-0.210	0.414	0.008	-0.005	0.117	31	-0.220	0.440	0.001	-0.010	0.112	30	-0.313	0.462	0.009	-0.011	0.134	30	-0.324	0.453	0.008	-0.009	0.138
2013	30	-0.224	0.135	0.004	0.000	0.084	30	-0.218	0.139	0.003	0.000	0.084	30	-0.215	0.090	-0.009	-0.009	0.075	30	-0.285	0.221	-0.002	-0.048	0.094	30	-0.261	0.198	-0.002	-0.046	0.090
2014	30	-0.149	0.205	0.004	-0.014	0.077	30	-0.156	0.206	0.003	-0.015	0.077	30	-0.133	0.112	-0.018	-0.008	0.059	30	-0.311	0.028	-0.050	0.038	0.069	30	-0.301	0.026	-0.048	0.038	0.068
2015	32	-0.209	0.471	-0.010	-0.001	0.115	32	-0.213	0.470	-0.012	-0.001	0.116	32	-0.263	0.423	-0.026	-0.004	0.114	30	-0.338	0.304	-0.012		0.109	30	-0.319	0.286	-0.010		0.105
2016	32	-0.142	0.218	-0.011	0.011	0.074	32	-0.143	0.220	-0.012		0.075	32	-0.178	0.206	-0.029		0.080												
Year	Kothari						Yoon						Augmented Jones						Real EM											
	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation
2002	29	-0.215	0.160	-0.025	0.001	0.078	28	-0.280	0.143	-0.036	-0.019	0.096	27	-0.085	0.048	-0.028	0.009	0.035	26	-0.988	0.279	-0.011	-0.001	0.254						
2003	28	-0.173	0.082	-0.024	0.062	0.064	28	-1.265	0.132	-0.055	0.091	0.256	27	-0.120	0.144	-0.019	0.047	0.055	26	-0.892	0.312	-0.012	-0.038	0.248						
2004	28	-0.141	0.251	0.038	-0.045	0.097	28	-0.305	0.632	0.036	-0.034	0.161	28	-0.102	0.261	0.028	-0.025	0.075	26	-0.956	0.600	-0.050	0.078	0.326						
2005	29	-0.158	0.152	-0.007	0.025	0.069	29	-0.348	0.207	0.002	0.023	0.100	28	-0.187	0.223	0.003	0.011	0.085	28	-0.641	0.635	0.028	-0.062	0.260						
2006	31	-0.114	0.481	0.018	0.003	0.108	31	-0.125	0.269	0.025	0.003	0.076	29	-0.065	0.239	0.014	-0.003	0.055	30	-1.157	0.642	-0.034	0.024	0.308						
2007	31	-0.165	0.314	0.021	-0.018	0.099	31	-0.142	0.214	0.028	0.013	0.082	31	-0.095	0.184	0.011	-0.014	0.055	30	-0.755	0.479	-0.009	0.057	0.253						
2008	31	-0.287	0.225	0.003	-0.016	0.111	31	-0.137	0.599	0.042	-0.027	0.126	31	-0.157	0.224	-0.003	0.013	0.076	30	-0.675	2.121	0.048	-0.047	0.444						
2009	32	-0.243	0.344	-0.013	-0.001	0.108	32	-0.174	0.329	0.015	-0.007	0.111	31	-0.103	0.294	0.010	-0.004	0.070	31	-0.445	0.278	0.001	0.053	0.176						
2010	32	-0.187	0.340	-0.014	0.008	0.102	32	-0.464	0.587	0.008	-0.036	0.164	32	-0.195	0.681	0.006	-0.004	0.139	31	-0.459	0.571	0.054	-0.009	0.181						
2011	32	-0.349	0.119	-0.005	0.011	0.081	32	-1.443	0.359	-0.028	0.057	0.277	32	-0.154	0.176	0.002	-0.002	0.058	30	-0.521	0.549	0.045	-0.002	0.200						
2012	31	-0.207	0.291	0.006	0.001	0.103	31	-0.297	0.841	0.029	-0.054	0.182	31	-0.261	0.391	0.000	-0.008	0.110	30	-0.432	0.573	0.043	-0.044	0.196						
2013	30	-0.223	0.136	0.006	-0.002	0.080	30	-1.027	0.212	-0.026	0.022	0.228	30	-0.173	0.124	-0.009	-0.011	0.065	29	-0.518	0.854	-0.001	-0.014	0.252						
2014	30	-0.151	0.204	0.005	-0.009	0.081	30	-0.497	0.192	-0.004	-0.004	0.133	30	-0.17	0.107	-0.020	0.013	0.051	29	-0.498	0.267	-0.015	0.023	0.210						
2015	32	-0.212	0.468	-0.005	-0.001	0.117	32	-0.950	0.946	-0.008	-0.040	0.283	30	-0.211	0.439	-0.007	-0.015	0.114	31	-0.561	0.380	0.007	0.001	0.195						
2016	31	-0.145	0.212	-0.006		0.070	32	-1.257	0.468	-0.048		0.282	30	-0.145	0.104	-0.022		0.049	31	-0.441	0.656	0.009		0.202						

APPENDIX VI: Descriptive statistics on earnings management for Tanzania

Year	Jones 1991					Jones 1995					Kasznik					DD					McNichols									
	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation
2002	4	-0.074	0.233	0.058	-0.129	0.130	4	-0.074	0.232	0.061	-0.131	0.128	4	0.004	0.180	0.080	-0.118	0.081	4	-0.053	0.054	0.007	-0.047	0.056	4	-0.046	0.069	0.010	-0.052	0.062
2003	4	-0.101	-0.052	-0.070	0.232	0.023	4	-0.102	-0.052	-0.070	0.232	0.023	4	-0.142	0.055	-0.037	0.213	0.086	4	-0.137	0.069	-0.040	0.181	0.089	4	-0.122	0.063	-0.042	0.176	0.080
2004	4	-0.048	0.739	0.162	-0.167	0.385	4	-0.049	0.739	0.162	-0.167	0.385	4	-0.053	0.684	0.176	-0.177	0.342	4	-0.075	0.683	0.141	-0.219	0.363	4	-0.085	0.701	0.134	-0.216	0.379
2005	4	-0.134	0.115	-0.005	0.033	0.131	4	-0.135	0.115	-0.006	0.035	0.132	4	-0.140	0.127	-0.001	0.075	0.113	4	-0.178	-0.003	-0.078	0.043	0.075	4	-0.201	0.019	-0.082	0.044	0.091
2006	6	-0.097	0.280	0.028	-0.073	0.134	6	-0.094	0.281	0.029	-0.072	0.133	6	-0.018	0.275	0.074	-0.057	0.109	6	-0.218	0.174	-0.035	0.033	0.146	6	-0.216	0.161	-0.038	0.033	0.145
2007	6	-0.268	0.136	-0.045	0.086	0.142	6	-0.266	0.139	-0.043	0.084	0.142	6	-0.107	0.187	0.017	0.080	0.104	6	-0.115	0.124	-0.003	-0.114	0.092	6	-0.124	0.088	-0.005	-0.106	0.089
2008	7	-0.111	0.453	0.041	-0.058	0.186	7	-0.110	0.443	0.041	-0.060	0.182	7	-0.054	0.404	0.097	-0.067	0.147	7	-0.332	0.058	-0.117	0.125	0.123	7	-0.319	0.051	-0.111	0.120	0.120
2009	7	-0.130	0.114	-0.017	0.012	0.097	7	-0.133	0.116	-0.018	0.014	0.099	7	-0.150	0.183	0.030	0.010	0.119	7	-0.152	0.166	0.008	0.022	0.131	7	-0.134	0.167	0.010	0.022	0.126
2010	7	-0.190	0.107	-0.005	0.011	0.097	7	-0.191	0.106	-0.004	0.012	0.098	7	-0.238	0.275	0.040	0.008	0.155	7	-0.135	0.121	0.030	0.025	0.087	7	-0.109	0.122	0.031	0.022	0.079
2011	7	-0.212	0.224	0.006	-0.016	0.152	7	-0.212	0.229	0.007	-0.017	0.155	7	-0.050	0.345	0.048	-0.009	0.140	7	-0.003	0.243	0.055	-0.027	0.089	7	-0.028	0.243	0.053	-0.026	0.093
2012	7	-0.093	0.095	-0.010	-0.019	0.066	7	-0.095	0.098	-0.010	-0.019	0.067	7	-0.060	0.133	0.039	-0.035	0.071	7	-0.132	0.160	0.028	-0.083	0.105	7	-0.093	0.157	0.027	-0.080	0.099
2013	7	-0.228	0.148	-0.029	0.036	0.114	7	-0.228	0.150	-0.029	0.037	0.115	7	-0.071	0.092	0.004	0.029	0.056	7	-0.229	0.060	-0.055	0.023	0.092	7	-0.229	0.087	-0.053	0.026	0.097
2014	7	-0.074	0.083	0.008	-0.033	0.051	7	-0.076	0.086	0.008	-0.033	0.053	7	-0.128	0.190	0.033	-0.028	0.095	7	-0.117	0.063	-0.032	-0.048	0.070	7	-0.106	0.083	-0.027	-0.051	0.070
2015	7	-0.103	0.046	-0.025	0.011	0.060	7	-0.100	0.043	-0.025	0.010	0.059	7	-0.158	0.106	0.005	0.004	0.090	7	-0.230	0.027	-0.080		0.106	7	-0.228	0.029	-0.078		0.109
2016	7	-0.254	0.064	-0.015		0.108	7	-0.256	0.064	-0.015		0.109	7	-0.078	0.105	0.009		0.058												

Year	Kothari					Yoon					Augmented Jones					Real EM								
	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation
2002	4	-0.076	0.228	0.055	-0.127	0.128	5	-0.057	0.574	0.156	-0.264	0.255	4	-0.031	0.280	0.088	-0.152	0.134	4	-0.060	0.085	0.023	0.025	0.064
2003	4	-0.100	-0.054	-0.072	0.229	0.022	5	-0.274	-0.022	-0.108	0.340	0.105	4	-0.186	-0.005	-0.064	0.229	0.082	4	0.007	0.102	0.048	-0.037	0.043
2004	4	-0.047	0.722	0.157	-0.163	0.377	5	-0.036	1.185	0.231	-0.221	0.533	4	-0.077	0.741	0.165	-0.265	0.385	4	-0.127	0.150	0.011	-0.037	0.117
2005	4	-0.137	0.113	-0.007	0.032	0.130	5	-0.066	0.095	0.010	0.001	0.079	4	-0.223	0.011	-0.100	0.135	0.108	4	-0.303	0.080	-0.026	-0.045	0.185
2006	6	-0.101	0.277	0.025	-0.073	0.134	6	-0.049	0.073	0.012	-0.029	0.052	5	-0.036	0.120	0.034	-0.033	0.060	6	-0.340	0.104	-0.071	0.065	0.170
2007	6	-0.271	0.130	-0.047	0.084	0.140	6	-0.074	0.090	-0.018	0.104	0.060	6	-0.127	0.063	0.001	0.069	0.066	6	-0.196	0.320	-0.007	0.020	0.178
2008	7	-0.116	0.445	0.037	-0.057	0.185	7	-0.128	0.656	0.086	-0.124	0.258	6	-0.051	0.414	0.070	-0.086	0.173	7	-0.305	0.346	0.014	-0.010	0.226
2009	7	-0.131	0.108	-0.020	0.012	0.096	7	-0.289	0.087	-0.038	0.002	0.120	7	-0.253	0.134	-0.016	0.042	0.125	7	-0.385	0.274	0.004	0.053	0.216
2010	7	-0.190	0.099	-0.008	0.011	0.095	7	-0.318	0.072	-0.036	0.061	0.128	7	-0.193	0.257	0.026	0.003	0.132	7	-0.135	0.433	0.058	-0.025	0.196
2011	7	-0.215	0.218	0.003	-0.016	0.152	7	-0.123	0.123	0.025	-0.033	0.092	7	-0.060	0.191	0.029	-0.007	0.105	7	-0.211	0.209	0.032	0.004	0.148
2012	7	-0.101	0.092	-0.013	-0.019	0.066	7	-0.178	0.073	-0.008	0.003	0.083	7	-0.063	0.082	0.021	-0.054	0.044	7	-0.133	0.222	0.036	0.004	0.147
2013	7	-0.232	0.142	-0.032	0.036	0.114	6	-0.097	0.114	-0.004	0.010	0.071	7	-0.086	0.059	-0.032	0.044	0.051	7	-0.097	0.442	0.040	-0.041	0.191
2014	7	-0.077	0.078	0.004	-0.033	0.050	6	-0.044	0.040	0.006	-0.045	0.033	7	-0.105	0.157	0.012	-0.021	0.087	7	-0.149	0.165	-0.001	0.042	0.117
2015	7	-0.106	0.040	-0.029	0.011	0.060	6	-0.203	0.036	-0.039	0.042	0.084	7	-0.090	0.085	-0.009	0.004	0.052	7	-0.198	0.296	0.041	-0.018	0.174
2016	7	-0.257	0.061	-0.018		0.108	6	-0.128	0.072	0.002		0.081	7	-0.131	0.097	-0.005		0.069	7	-0.222	0.388	0.023		0.191

APPENDIX VII: Descriptive statistics on earnings management for Uganda

Year	Jones 1991					Jones 1995					Kasznik					DD					McNichols									
	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation
2007	1	0.020	0.020	0.020	-0.027		1	0.027	0.027	0.027	-0.010		1	0.049	0.049	0.049	-0.014		1	0.118	0.118	0.118	0.238		1	0.112	0.112	0.112	0.274	
2008	2	-0.037	0.024	-0.006	-0.049	0.043	2	0.007	0.027	0.017	0.172	0.014	2	0.032	0.039	0.036	0.071	0.005	2	0.272	0.441	0.356	-0.208	0.119	2	0.260	0.513	0.386	-0.171	0.178
2009	2	-0.138	0.027	-0.055	0.026	0.117	2	-0.135	0.513	0.189	-0.383	0.458	2	-0.128	0.342	0.107	-0.283	0.332	2	-0.266	0.561	0.148	-0.299	0.585	2	-0.144	0.574	0.215	-0.366	0.507
2010	2	-0.039	-0.019	-0.029	0.059	0.014	2	-0.368	-0.020	-0.194	0.222	0.246	2	-0.282	-0.070	-0.176	0.170	0.150	2	-0.285	-0.017	-0.151	0.183	0.190	2	-0.295	-0.007	-0.151	0.189	0.204
2011	2	-0.033	0.091	0.029	0.026	0.088	2	-0.035	0.092	0.028	0.031	0.090	2	-0.044	0.031	-0.006	0.031	0.053	2	0.022	0.043	0.032	-0.009	0.015	2	0.021	0.055	0.038	-0.005	0.025
2012	2	-0.007	0.118	0.055	-0.068	0.088	2	0.002	0.117	0.059	-0.087	0.082	2	-0.015	0.063	0.024	-0.076	0.055	2	0.016	0.031	0.024	-0.030	0.011	2	0.011	0.055	0.033	-0.035	0.031
2013	2	-0.036	0.010	-0.013	0.029	0.033	2	-0.038	-0.017	-0.027	0.018	0.014	2	-0.073	-0.030	-0.051	0.007	0.030	2	-0.042	0.030	-0.006	0.012	0.051	2	-0.032	0.028	-0.002	0.015	0.042
2014	2	-0.013	0.046	0.016	0.043	0.041	2	-0.014	-0.005	-0.009	0.009	0.006	2	-0.066	-0.024	-0.045	0.020	0.030	2	0.001	0.012	0.006	0.053	0.007	2	0.001	0.025	0.013	0.053	0.017
2015	2	0.049	0.070	0.059	0.015	0.014	2	-0.069	0.069	0.000	0.075	0.098	2	-0.057	0.008	-0.025	0.058	0.046	2	0.023	0.097	0.060		0.052	2	0.041	0.092	0.066		0.036
2016	2	0.064	0.084	0.074		0.014	2	0.063	0.086	0.075		0.016	2	0.023	0.045	0.034		0.016												

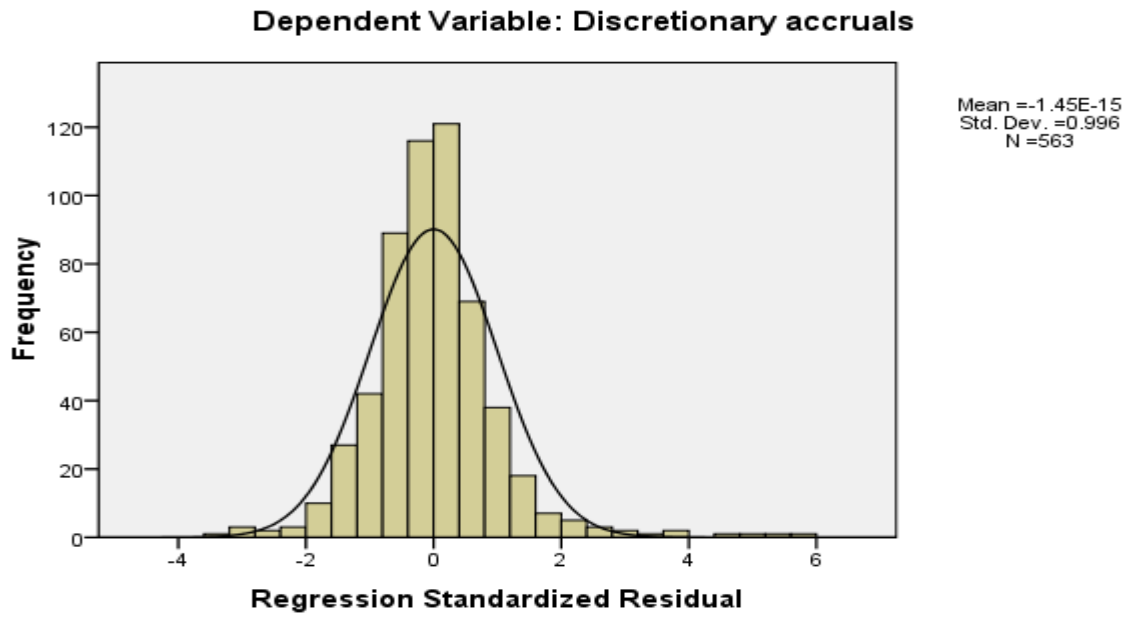
Year	Kothari					Yoon					Augmented Jones					Real EM								
	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation	N	Min	Max	Mean	Mean Change	Standard Deviation
2007	1	0.023	0.023	0.023	-0.016		1	-0.336	-0.336	-0.336	0.412		1	0.034	0.034	0.034	-0.046		1	0.149	0.149	0.149	-0.118	
2008	2	0.002	0.012	0.007	0.163	0.006	2	-0.195	0.348	0.077	-0.077	0.384	2	-0.158	0.134	-0.012	-0.094	0.206	2	-0.086	0.148	0.031	-0.204	0.165
2009	2	-0.156	0.496	0.170	-0.364	0.461	2	-0.334	0.334	0.000	-0.295	0.472	2	-0.145	-0.068	-0.106	0.124	0.054	2	-0.553	0.207	-0.173	0.412	0.538
2010	2	-0.364	-0.02	-0.193	0.218	0.241	2	-0.403	-0.187	-0.295	0.328	0.152	2	-0.017	0.054	0.018	0.001	0.050	2	0.093	0.384	0.238	-0.206	0.206
2011	2	-0.038	0.088	0.025	0.030	0.089	2	-0.029	0.095	0.033	0.043	0.088	2	-0.037	0.075	0.019	-0.060	0.079	2	-0.017	0.082	0.033	-0.035	0.070
2012	2	-0.002	0.112	0.055	-0.085	0.081	2	0.019	0.134	0.076	-0.212	0.082	2	-0.058	-0.023	-0.041	0.010	0.025	2	-0.027	0.023	-0.002	0.076	0.035
2013	2	-0.04	-0.02	-0.030	0.017	0.015	2	-0.275	0.004	-0.136	0.044	0.197	2	-0.042	-0.02	-0.031	0.039	0.016	2	0.036	0.111	0.074	-0.020	0.052
2014	2	-0.017	-0.01	-0.012	0.009	0.006	2	-0.197	0.014	-0.092	0.100	0.149	2	-0.023	0.039	0.008	0.025	0.043	2	0.014	0.093	0.054	0.002	0.056
2015	2	-0.072	0.065	-0.003	0.074	0.097	2	-0.032	0.048	0.008	0.051	0.056	2	0.009	0.057	0.033		0.034	2	0.026	0.085	0.055	-0.071	0.042
2016	2	0.059	0.083	0.071		0.017	2	0.018	0.1	0.059		0.057							2	-0.081	0.05	-0.016	0.016	0.093

APPENDIX VIII: Correlation table

		Jones 1991	Jones 1995	Kaszniak	DD	McNichols	Kothari	Yoon	Augmented Jones	Real EM	EXECOMP	LEVERAGE	PERFOR MANCE	SIZE	CFS
Jones 1991	Pearson Correlation	1													
	Sig. (2-tailed)														
	N	567													
Jones 1995	Pearson Correlation	.999**	1												
	Sig. (2-tailed)	.000													
	N	567	567												
Kaszniak	Pearson Correlation	.891**	.893**	1											
	Sig. (2-tailed)	.000	.000												
	N	567	567	567											
DD	Pearson Correlation	.358**	.364**	.398**	1										
	Sig. (2-tailed)	.000	.000	.000											
	N	522	522	522	522										
McNichols	Pearson Correlation	.295**	.297**	.340**	.964**	1									
	Sig. (2-tailed)	.000	.000	.000	.000										
	N	522	522	522	522	522									
Kothari	Pearson Correlation	.949**	.947**	.804**	.322**	.252**	1								
	Sig. (2-tailed)	.000	.000	.000	.000	.000									
	N	567	567	567	522	522	567								
Yoon	Pearson Correlation	.682**	.684**	.682**	.306**	.230**	.651**	1							
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000								
	N	567	567	567	522	522	567	567							
Augmented Jones	Pearson Correlation	.747**	.746**	.867**	.353**	.322**	.632**	.538**	1						
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000							
	N	551	551	551	511	511	551	551	551						
Real EM	Pearson Correlation	-.004	.012	.011	.057	.016	.001	.013	-.005	1					
	Sig. (2-tailed)	.917	.784	.804	.203	.720	.985	.761	.903						
	N	552	552	552	508	508	552	552	536	552					
EXECOMP	Pearson Correlation	.160**	.160**	.208**	.118**	.111*	.168**	.206**	.144**	-.186**	1				
	Sig. (2-tailed)	.000	.000	.000	.007	.011	.000	.000	.001	.000					
	N	563	563	563	518	518	563	563	547	548	563				
LEVERAGE	Pearson Correlation	.074	.076	.211	-.131	-.122	.071	.143	.150	.003	.081	1			
	Sig. (2-tailed)	.080	.072	.000	.003	.005	.091	.001	.000	.945	.054				
	N	567	567	567	522	522	567	567	551	552	563	567			
PERFORMANCE	Pearson Correlation	.348**	.348**	.602**	.203**	.195**	.265**	.561**	.540**	.018	.085*	-.264**	1		
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.673	.047	.000			
	N	546	546	546	503	503	546	546	530	546	542	546	546		
SIZE	Pearson Correlation	-.091*	-.090*	-.041	-.120**	-.097*	-.121**	-.174**	-.127**	.001	.776**	.140**	.079	1	
	Sig. (2-tailed)	.030	.033	.327	.006	.028	.004	.000	.003	.980	.000	.001	.067		
	N	563	563	563	518	518	563	563	547	548	563	563	542	563	
CFS	Pearson Correlation	-.298**	-.298**	.055	-.011	.009	-.332**	-.153**	.001	-.015	.405**	-.177**	.333**	.343**	1
	Sig. (2-tailed)	.000	.000	.192	.809	.846	.000	.000	.986	.731	.000	.000	.000	.000	
	N	563	563	563	518	518	563	563	547	548	563	563	542	563	563

APPENDIX IX: Histogram for dependent variable AEM

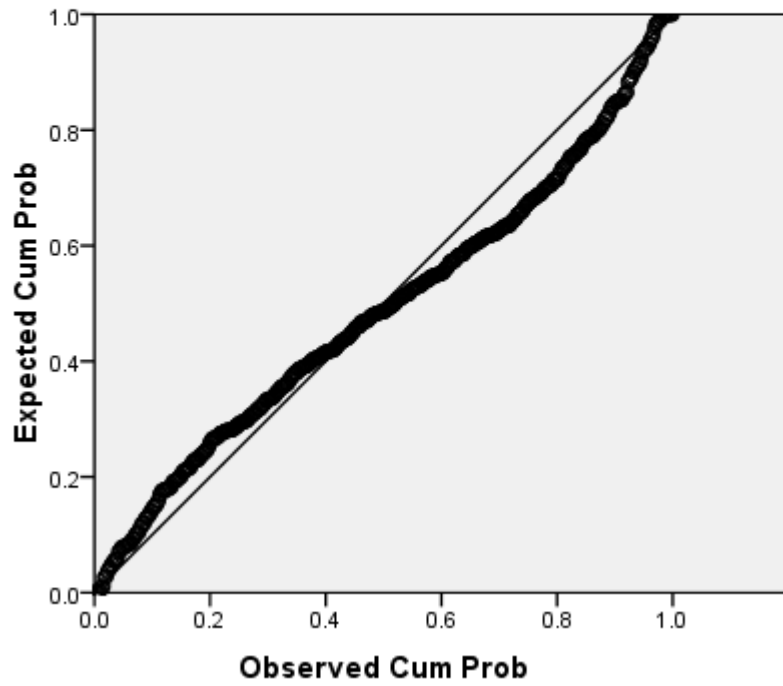
Histogram



APPENDIX X: Normal quantile-quantile plot for dependent variable AEM

Normal P-P Plot of Regression Standardized Residual

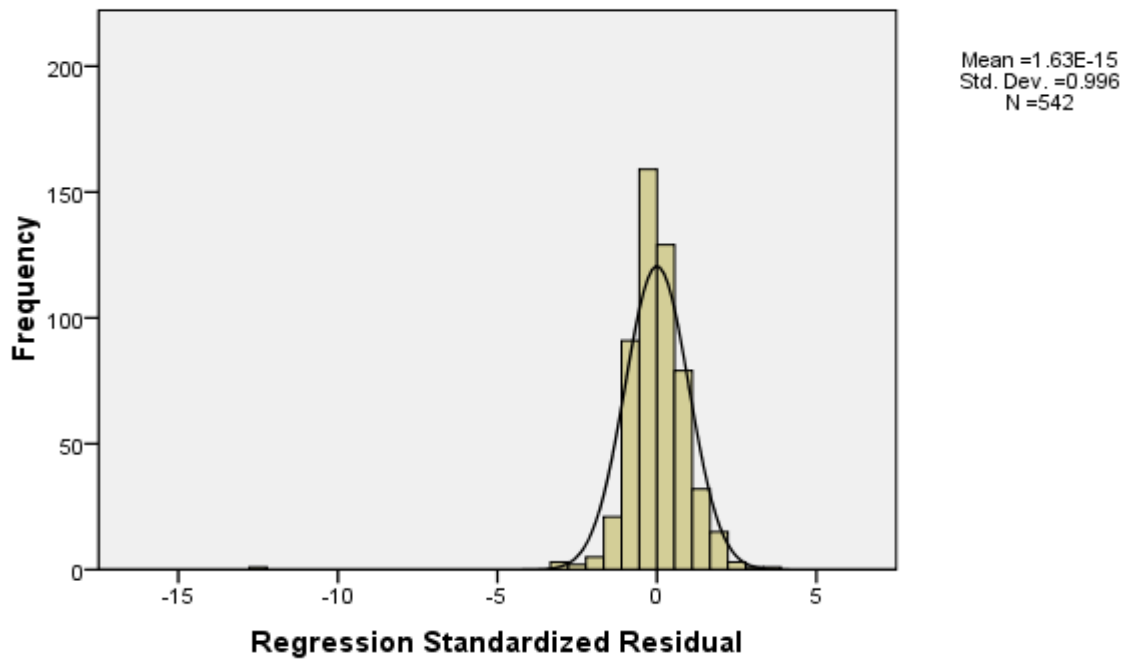
Dependent Variable: Discretionary accruals



APPENDIX XI: Histogram for dependent variable REM

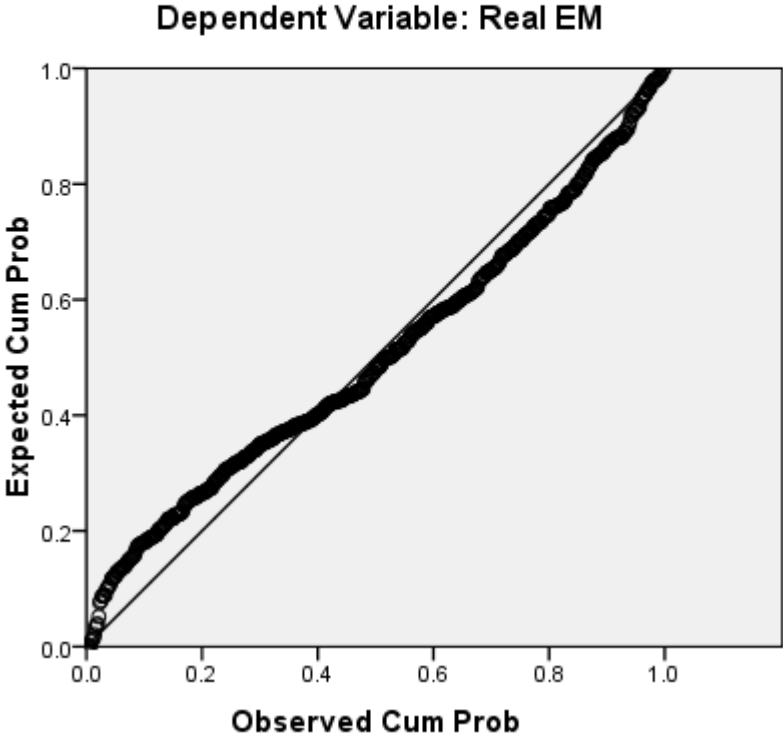
Histogram

Dependent Variable: Real EM



APPENDIX XII: Normal quantile-quantile plot for dependent variable REM

Normal P-P Plot of Regression Standardized Residual



APPENDIX XIII: Jacque-Bera Normality test

Model	Jacque-Bera statistic	Probability
Jones 1991	805.828	0.000
Jones 1995	817.023	0.000
Kasznik	1225.754	0.000
DD	1799.154	0.000
McNichols	1946.83	0.000
Kothari	667.542	0.000
Yoon	8200.951	0.000
Augmented Jones	2935.261	0.000
Real EM	4428.16	0.000

APPENDIX XIV: Heteroscedasticity test-White test

Model	Heteroskedasticity Test: White		
	Prob. F	Prob. Chi-Square (Obs*R-squared)	Prob. Chi-Square (Scaled explained SS)
Jones 1991	0.166	0.167	0.000
Jones 1995	0.160	0.161	0.000
Kaznik	0.483	0.479	0.000
DD	0.854	0.849	0.479
McNichols	0.993	0.992	0.562
Kothari	0.332	0.330	0.000
Yoon	0.900	0.898	0.000
Augmented	0.368	0.365	0.000
Real EM	0.977	0.974	0.040

APPENDIX XV: Collinearity statistics

Model	Variables	Collinearity Statistics	
		Tolerance	VIF
Jones 1991 Model	EXECOMP	0.398	2.514
	SIZE	0.388	2.578
	LEVERAGE	0.894	1.118
	PERFORMANCE	0.905	1.105
Jones 1995 Model	EXECOMP	0.408	2.453
	SIZE	0.398	2.515
	LEVERAGE	0.894	1.118
	PERFORMANCE	0.894	1.105
Kasznik Model	EXECOMP	0.397	2.518
	SIZE	0.387	2.585
	LEVERAGE	0.890	1.123
	PERFORMANCE	0.901	1.110
DD Model	EXECOMP	0.407	2.458
	SIZE	0.399	2.506
	LEVERAGE	0.903	1.107
	PERFORMANCE	0.916	1.092
McNichols Model	EXECOMP	0.407	2.458
	SIZE	0.399	2.506
	LEVERAGE	0.903	1.107
	PERFORMANCE	0.916	1.092
Kothari Model	EXECOMP	0.924	2.514
	SIZE	0.970	2.578
	LEVERAGE	0.552	1.118
	PERFORMANCE	0.550	1.105
Yoon Model	EXECOMP	0.408	2.453
	SIZE	0.398	2.515
	LEVERAGE	0.894	1.118
	PERFORMANCE	0.905	1.105
Augmented Jones	EXECOMP	0.427	2.344
	SIZE	0.404	2.472
	LEVERAGE	0.889	1.125
	PERFORMANCE	0.891	1.122
	ACCRUALS	0.951	1.051
Real EM	EXECOMP	0.342	2.924
	SIZE	0.348	2.877
	LEVERAGE	0.878	1.139
	PERFORMANCE	0.834	1.199
	CASHFLOWS	0.718	1.393

APPENDIX XVI: Autocorrelation test

Model	Durbin-Watson statistic
Jones 1991	1.862
Jones 1995	1.862
Kaszniak	1.811
DD	1.998
McNichols	1.999
Kothari	1.962
Yoon	1.524
Augmented	1.675
Real EM	1.733