INTERNAL AUDIT, INSTITUTIONAL CHARACTERISTICS, INTERNAL CONTROLS AND PERFORMANCE OF WATER SERVICE PROVIDERS IN KENYA

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DECLARATION

This thesis is my original work and has not been submitted for any academic or other award to any other college, institution or university other than University of Nairobi.

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DEDICATION

This doctoral thesis is dedicated to my wife Catherine Karimi and my mum the late Judith Mvuko Gerald for giving the foundation and motivation to seek greater heights in academic excellence.

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ABBREVIATIONS AND ACRONYMS

BOD	Board of Directors
CA	Certified Accountant
CAE	Chief Audit Executive
CEO	Chief Executive Officer
CG	Corporate Governance
COSO	Community of Sponsored Organizations
DMU	Data Monitoring Unit
ERM	Enterprise Risk Management
GDP	Gross Domestic Product
IAF	Internal Audit Function
IAS	International Accounting Standards
IFRS	International Financial Reporting Standards
IIA	Institute of Internal Auditors
IIASB	International Internal Audit Board
ISPP	International Standards for Professional Practice
IT	Information Technology
KENAO	Kenya National Audit Office
NRW	Non Revenue Water
NSE	Nairobi Securities Exchange
O&M	Operations and Maintenance
R B T	Resource Based Theory
WASPA	Water Services Providers Association
WASREB	Water Service Regulatory Board
WSB	Water Service Board
WSPs	Water Service Providers
WSTF	Water Services Trust fund

ABSTRACT

The study was to establish the association among internal audit, institutional characteristics, internal controls and organisational performance of Kenyan WSPs. The gist of the study was to determine the influence of institutional characteristics and internal controls on the association between internal audit and organisational performance. To address the study gaps, four hypotheses were derived and tested on a population of 87 Water service providers. This cross sectional descriptive study that attained a response rate of 84% of the targeted 87 water service provider units was guided by a positivist study paradigm. Key statistical tests done including Cronbach alpha; descriptive statistics, the mean and standard deviation were done. Data Envelopment Analysis approach, correlation analysis, multiple and stepwise regression analysis was then used to test the hypotheses. Correlation analysis found a statistically significant positive relationship between internal audit and internal controls, statistically significant positive relationship between internal audit practices and firm performance, statistically insignificant positive association between Location of water providers and firm performance, statistically insignificant negative associations between internal Controls and firm performance as well as between size of WSPs and firm performance. Null hypothesis one was rejected as the regression analysis found that the p-value was less than .05. The adjusted R squared was .10.1 meaning that 10.1% of variations in firm performance are explained by variation in internal audit. This infers that internal audit influence performance of Water service providers in Kenya. Null hypothesis two was tested. The test failed to reject the null hypothesis an indication that firm characteristics: Size and location of water service providers do not moderate the relationship between internal audit and organisational efficiency of Water service providers in Kenya. The third null hypothesis test was done. The test failed to reject the hypothesis indicating that Internal controls do not mediate the relationship between internal audit and performance of Water service providers in Kenya. The fourth hypothesis was tested and the result showed that it failed to reject the null hypothesis; an indication that the joint relationship of internal audit, size and location of WSPs on internal controls does not influence performance of WSPs in Kenya. This study has provided an empirical foundation for investigating the impact of institutional characteristics and internal controls on organizational performance. The study has also contributed greatly to the academic literature by integrating Agency theory, Monitoring theory; Resource based theory, Policeman theory and Contingency theory. Further, the study made a unique contribution to policy formulation and development to benefit the understanding on how internal audit in the Kenyan context influence organizational performance resulting to formulation of reforms in various public institutions to strengthen internal audit. One of the bottlenecks of this study was that the primary data on internal audit and internal control were collected cross sectionally using a Likert scale. There is a chance that some of the respondents may have either over/under rated their scoring on some of the questions leading to subjective results. The reliance on primary data has the potential associated with sources of systematic measurement error. Future studies may focus on using secondary data to measure, for example, organizational non-financial performance. Secondly, the study employed a cross sectional approach whereas a longitudinal approach would provide for a longer time of study to observe relationships among study's variables.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The relationship between internal audit and firm performance has gradually created interest in Water service provider management study (Al Matari, Swidi & Fadzil, 2014). Internal audit is an essential part of management and a tool for enhancing performance of organisations. Complex organisational structures demand competent and professional internal auditors to ensure that scarce resources are utilized efficiently and effectively to enhance organisational performance (Chan, 2004). From the literature reviewed, there is sufficient empirical and theoretical evidence that internal audit influences organisational performance (Cohen & Sayag, 2010; Eko & Hariyanto, 2011; Theofaris et al., 2011). However, internal audit alone may not adequately explain variation in performance of companies. This shows that some other elements mediate to catalyse, decelerate or moderate the relationship between internal audit and firm performance. Such variables could be institutional characteristics such as size and location and internal controls.

The institutional characteristics are likely to influence performance of companies because they have direct correlation to commercial viability, financial sustainability and financial capacity (WASREB, 2014). This indicates that they possibly determine the resources and audit environment; while internal controls guarantee firm policies and procedures which guide the organisations achieve and maintain their goals. (COSO, 1992; Penrose, 1959). Internal audit that is supported by firm characteristics oversees internal controls, detects flaws in managements' procedures; and gives a basis for correcting insufficiencies before they compromise achievement of organisational goals (Belay, 2007; Penrose, 1959).

Studies on the influence of the institutional characteristics and internal controls on the relationship between internal audit and performance of firms are limited.

The conceptualization in this study was underpinned by the agency theory (Adams, 1974; Jensen & Mecline, 1976), monitoring theory (Wallace, 1980), policeman theory (Adams, 1974), resource based theory (Chandler, 1962 & Penrose, 1959) and contingency theory (Galbraith, 1973; Lawrence & Lorsch, 1967; Woodward, 1958). Agency theory espouses to explain the association between the agents (organisational management) and the principal (shareholders). Similarly, policeman theory (Adams, 1974) as well as monitoring theory (Wallace, 1980) could best be used to explain the monitoring role of internal audit in enforcing internal controls which done for the benefit of the shareholders (Morgan, 1979). Resource based theory explains how the availability and efficient utilization of resources can improve firm performance. The contingency theory argues that effective management depends on the prevailing environmental circumstances to which a company operates in (Fiedler, 1964; Galbraith, 1973; Lawrence & Lorsch, 1967). This shows that an organisation's success is a function of its ability to fit its internal structures and procedures to its environmental contingencies. Unless internal controls are closely monitored by internal audit there is likelihood of compromising organisational performance.

Water service providers (WSPs) are legal public bodies licenced by Water Regulatory Boards (WRB) to offer water and sanitation services within their mandated areas. This is provided for in section 46 of Water Act of 2002 of the laws of Kenya. Water service providers therefore are vehicles useful to the government in order to achieve its goals to provide piped water to every home by the year 2030. Despite the massive scale of government investment in WSPS as well as ambitious water supply development

programme, in some instances it has not been marched by commensurate performance. The proportion of the rural population in Kenya that access piped water is just about 50% raising doubt on efficiency of WSPs (WASREB, 2015). Additionally only 66% of urban residents have access to piped and dependable water supplies (Mumma, 2005). This dismal performance of WSPs is attributed to endemic corruption, poor financial management and weak internal controls (Ongeti, 2014). Concerns over poor performance of WSP have been growing over time because of the position they hold in the country's social - economic development transformation as envisioned in vision 2030 (Kobia & Mohamed, 2006) which envisages every home in Kenya to have clean domestic water by then.

1.1.1 Internal Audit

Internal audit is an independent and objective appraisal, assurance and consulting function intended to improve and develop an organisations performance (IIA, 1999; Reid & Ashelby, 2002). It assists an organisation accomplish its goals by introducing an orderly, efficient method to assess and enhance the efficacy of risk assessment and control process. Internal audit practice is an independent and objective appraisal activity established within an entity to examine and evaluate its operations as a service to the organization (Johl, Johl, Subramaniam & Cooper, 2013). Its aim is to assure management that the internal controls are adequate and operating satisfactorily (Reid & Ashelby, 2002).

Internal audit is a constituent of the wider internal control of the organization set up by the management and charged with the responsibility of ensuring that all the other elements of control system are reviewed and that the firm operates efficiently and

effectively. The efficacy of internal audit relies on its independence, resources provided by management and the oversight role of board audit committee.

The internal audit is a part of management team and offers consulting service to the management (McCall, 2002). The strategic goals of internal audit are dependent on the strategic objectives of the firm and therefore internal audit in water service providers must match the strategic plan of the organisation (Cohen & Sayag, 2010; Mihret & Yismaw, 2007; Mihret et al., 2010; Theofanis et al., 2011; Unegbu & Koda, 2011).

Internal audit is conducted in diverse organizational environment that a firm faces such as: legal, culture, the size of a firm, technological development, location, complexity of the firm and its structure. The approach of auditing may vary according to the environment and exposure to organization's information in order to be able to consult and guide the management in the areas of risk assessment (Gunther & Moore, 2002). Internal audit can make greater contributions towards enhancement of firm performance by providing the management, the board and other stake holders with assurance services, consulting services, compliance control services, and ensuring independence and objectivity in reporting (Unegbu & Koda, 2011). The relationship between internal audit and firm efficiency emanates from the value added to the organisation by the internal audit. Internal audit deals with issues that are fundamental to the survival and prosperity of firms and looks beyond financial risks as well as financial statements to consider such issues as organisational reputation, growth, firms' impact on the environment and the way it treats its employees.

The assurance services of internal audit involve delivering assurance on compliance with regulation and stakeholders demands. This enables the management lead with confidence, navigate risks and opportunities.To enhance effectiveness and efficiency in management of organization, the internal audit provides assurance on performance of control systems, procedures and assess whether public resources are managed in accordance with the law (such as: procurement Act 2015 & Finance Act, 2012) systems and principles and practices of financial control. The internal audit reviews budget and budgetary controls, strategic plans to be able to assure the BOD that all regulations are complied with. The internal audit is also responsible for assuring that the organization has good risk management policy. Internal audit contributes to the organisations because they deal with fundamental control matters necessary for firm's survival and prosperity. Internal audit goes beyond external audit role of financial risks and statements to consider organisational reputation, culture, development and firm corporate social responsibility and assure the managers and the board on how well the systems and processes designed to achieve firm objectives are working (Finance Act, 2012; Reid & Ashelby, 2002).

Internal audit must assess whether public resources are managed in conformity with the laid down systems, procedures and practices of financial controls making sure that companies achieve their mission. Effective management of public sector organization establish internal controls to enable them deal with changes in environment, promote efficiency, reduce risks and ensure reliability of financial statements and compliance with laws and regulations (COSO, 2013; Reid & Ashelby, 2002). Internal controls are operated by management of an organization to mitigate risks (WASREB, 2014).

The area of internal audit in an organisation is wide and may include: efficiency of operations, the effectiveness of financial reports, exposure and investigation of fraud,

protection of assets and making sure that organisations comply with laws and regulations. Internal auditing is a facilitator for improving efficiency and effectiveness in a firm through assessment of the business operations (Gunther & Moore, 2002). Internal Audit offer management added benefit of consultancy services out of its good understanding of the strategic risk universe, control and governance concerns and priorities of the organisation. Economic changes, ever increasing dependence on technology, regulations and organisational change treads contribute to increased risks that threaten business performance. The internal auditing function is exposed to all entity information and is provided with an enabling audit environment and resources so as to maximize their performance in the consulting role (Albrecht et al., 1988). The internal auditor, who has full knowledge of the company operations, acts as consultant whenever there is need.

With commitment to honesty and accountability, internal audit acts as an objective source of independent advice and therefore must have ethical, competent staffs who work according to the international standards of internal audit. Internal audit today should be more included with the top management as consultants and as independent assessors which are often at the expense of their assurance role as the double roles often conflict (Gunther & Moore, 2002). The internal audit may not be objective when reviewing activities they participated in their implementation. The consulting role of internal audit may include: Provision of advice, facilitating workshops, availing management tools and techniques to analyse risks and controls, introduction of Enterprise Resource Management system into the organisation, couching the organisation on risk and control and co-ordinating, monitoring, reporting on risks and supporting managers identify and mitigate risks. Internal audit identify the possible risks which may compromise achievement of the set goals and then make recommendations to the management to

improve on operational efficiency and aligning internal controls to the internal process of the company (IIA, 1999).

Internal audit alone may not influence firm performance and may require moderation and intervention of firm characteristic as well as internal controls (Pfeffer & Salancik, 1978). Internal audit gauges and contributes to the evaluation and assessment of controls using orderly and guided methods. Internal audit provides means for improving firm performance through risk management and assessment of internal controls (Reid &Ashelby, 2002; Unegbu, & Koda, 2011). Internal audit assesses adherence to the existing internal controls identifies areas of weaknesses and then makes recommendations to the management for improving corporate governance (Vanasco, 1996).

Internal audit reports to the audit committee functionaly and organizationally to the C.E.O. so as to establish its independence from the management as well ensuring objectivity in reporting (McCall, 2002; Vanasco, 1996).The audit committee ensures that the management implement an effective process to identify, monitor, and manage potential risks that relate to financial reporting, internal control, regulatory compliance, conflict of interest and investigations (Goodwin, 2003).Internal audit must be free to determine its scope of audit, be reasonably independent of management and yet be able to work with that management by exercising due care, honesty and integrity to safeguard the much needed independence and objectivity. Without physical and mind-set independence, the internal audit will lose its objectivity and then have biased judgement as they perform the duo-role of consulting and assurance provision to the management.

The internal audit must maintain good working relationship with managers in the organisation he/she works for in order to improve organisational performance.

Objectivity of internal audit emanates from the impartiality that enables execution of its duties honestly and without significant compromises on audit matters to those of other people. The internal audit should not allow their judgements to be compromised on audit matters to those of other people. A divergence of interest may create indecency that undermines the assurance of the internal audit and the profession of internal audit. Internal audit is an asset in financial management and a tool for improving the efficiency of public entities and it is on this basis that it is viewed by many stakeholders, as a major support of corporate governance (Diamond, 2007).

1.1.2 Institutional Characteristics

Institutional characteristics include an institution's operational characteristics that provide the background in which it operates and the framework for understanding and interpreting reports (Chandler, 1962 & Penrose, 1959). Operating characteristics of firms refers to aspects that provide information about the context in which the institution operates such as its environmental characteristics that influence performance levels of companies. Majumdar (1997) evaluated the impact of firm age and size on firm level performance. The findings were that Indian older firms are fruitful and less cost-effective. Large firms in manufacturing settings and in major towns were found to be more profitable and less productive due to industrial restrictions. Loderer, Neusserand Waelchli (2009) studied the effects of firm age on performance in India. The results were that firm's age and slowly lose their ability to compete. The firms' age affect performance negatively.

The institutional characteristics for water service providers include; size, and location which affect performance of WSPs differently (Kemp, Cook, Allen, Vosti, Lemoalle, Giordano, Ward, & Kaczan, 2011). Water provision firms have different ability to generate revenues that enable them to properly reward managers and internal audit staff, increase incentives provided to the employees and increase their ability to provide adequate resources to implement internal controls (WASREB, 2014). The variation in firm performance may be caused by firm characteristics which include its operational specific characteristics that provide the background in which it operates and the framework for understanding and interpreting reports. Operating characteristics of firms refer to variables that provide information about the context in which the institution operates such as its environmental characteristics that influence performance levels of companies such as firm: size and location.

Water service boards (WSBs) are a creation of Water Act 2002 and as the regulators of WSPs, they appoint Water service providers as agents to supply water services on their behalf. WSBs are expected to develop infrastructure in water companies such as water distribution networks, water treatment works and any other infrastructure needed to facilitate the delivery of water service and generate revenues for the realisation of rights to water enshrined in the constitution of Kenya 2010 by all the people. As regulators, WSBs promote effectiveness in the management of water services; ensure that water service provision is sustainable by monitoring WSPs and making sure good corporate management structures which also include efficient and effective internal audit and board audit committees. The instructional characteristics such as size and location are used by the WSBs and Water Service Regulatory Board (WASREB) to measure the performance

of the WSPs which is used as a criteria for ranking the WSPS in Kenya. Size and location of WSPs are seen as the main contributors to firm financial sustainability and consequently as the determinants of adequate resources, adherence to internal controls and internal audit environment. Internal audit should have adequate funds commensurate with the size of tasks and training needs assigned to it. The internal auditor must be knowledgeable of applicable internal audit standards, effective and be able to oversee and manage an audit Activity. Internal audit staff must have professional credentials and competencies to perform full range of audits stipulated in the internal audit charter. For firm characteristics to positively affect firm performance, they must attain operational performance which maximizes the effectiveness of internal audit and minimize redundancy and waste while utilizing the best of its work force (Albrecht, Howe, Schueler & Stocks, 1988). Different scholars have considered different criteria to determine the size of the firm. Majumdar (1997) determined the size of firm by the number of employees in the firm.

Size of WSPs refers to the number of connections in Water Service Providers (WSPs). The larger the number of water connection the more the water consumption and the higher the revenue generation for the firm. WSPs have diverse capabilities and the population served as compared to the total population in the given area of jurisdiction, potential to utilize economies of scale and the formalisation of procedure. Larger organisations with more water connections enjoy economies of scale to produce greater performance compared to small firms (Penrose, 1959). Nevertheless, other points of view propose that size is related to x-inefficiencies leading to relatively lesser performance (Leibenstein, 1976). The size of a WSP is important to its viability resulting from

increased revenues and profitability. Accordingly large organisations are therefore able to catch the attention of and retain suitable staff including internal auditors who then become useful in performance goals (WASREB, 2015). However, large organisations are expected to suffer from dis-economies of scale. Resource based theory upon which the relationship is founded therefore, is not clear on the exact association between internal audit and performance of firm moderated by its size. Similarly, a company's' size which is correlated to financial sustainability (Kihumba, 2014) refers to the number of connections of WSPs to households. Large companies attract competent audit staff; have strong audit boards, and other resources to build an effective internal audit that improve performance.

Location of the WSPs refers to the geographic spread of the WSPs in different areas which influence their incomes. The operating environment of a firm and that of internal audit have a big effect on its performance. Urban water provider companies generate more revenue than the rural companies due to differing rate of water consumption and the fact that some rural consumers could also be using raw water meant for irrigation for household needs and therefore reducing per capita water consumption of quality water. Moreover, the water consumers in rural settings are wide spread making the service provision costly, unaffordable and in most cases resulting to financial instability for most rural WSPs.

1.1.3 Internal Controls

Internal control systems are procedures and policies implemented by the Board of directors, top management and other employees, intended to offer realistic assurance of the achievement of goals in: effectiveness and efficiency of operations, efficiency of

financial reporting, compliance with pertinent laws and regulations (COSO, 1992). Controls are therefore essential elements of corporate governance structures for risk management that ensure operational efficacy and efficiency (COSO, 1992).

Internal controls can be classified into financial controls and administrative internal control (David, 2009). Financial control refers to financial management systems that endeavour to adopt sound financial management best practices. These include operating procedures followed such as checking that the company's payments are for legitimate services rendered which helps in prevention and detection of fraud. The non-financial control activities include separation of duties to ensure checks and balances.

Approval of transactions is by authorised officers and their levels are clearly stated and observed, there are physical safeguard of asset which include use of CCTV cameras, locks, wall and buildings to safeguard property (Morgan, 1979& COSO, 2013). To deter loss by theft; there are information technology controls; human resource controls and operational controls. Installing and adhering to proper internal controls which best suit the company’s situation is an expensive and complex venture. Operating manuals, policies, rules and regulations are meant to safeguard assets form losses through accidents or fraud. Internal controls help firms to prevent or reduce fraud and theft by including control activities such as bank reconciliation, internal audit reviews which may uncover cash misappropriations by staff (Alkins 2011; Nilniyom & Chanthinok, 2011).

Glance (2006) posited that control system encompasses policies, procedures and processes established by local governing council to ensure that its objectives are met. Baltaci and Yilmaz (2006) posited that when internal controls and internal audit practices

do not receive the needed attention, detection and control of fraud are hindered. Without adequate controls, detection and control of bad behaviour in the water service providers would not be possible. Therefore, it is necessary for WSPs to institute effective and efficient systems in order to improve the effectiveness of internal audit. Fond and You (2010) and Jokipii (2010) expounded on the importance of internal controls and advised that more studies be done in the area of internal control system and its relationship with internal audit for improved firm performance needs to be done.

Segregation of duties is a major internal control as it ensures that the work of an individual is counterchecked by another person in the system. The process of separation of duties identifies levels of reporting and authorization; institutes information technology controls such as: Access to systems and data, segregates IT roles, reviews of access logs, audit trail and control of human resource matters about remuneration. The separation of duties may be difficult to achieve for small firms which do not have adequate resources but it is necessary to engage people from other departments or externally to take up the required functions. Segregation of duties improves accuracy and quality of accounting reports and the credibility of those reports to the ultimate users for decision making as well as for detection of errors and frauds (COSO, 2013 & Alkins, 2011).

The IT controls include controls to: accessing programs, development and program changes. Information technology application controls are designed to ensure that complete and accurate processing of raw data is done to give the expected output. Complete checks for valid data inputs; identification of users to ensure uniquely and

irrefutably identified users by application of passwords; authorisation of access controls that provide authentication mechanism to deter or eliminate cyber-crimes, enhance controls for safety, control access to systems and data is limited to authorized personnel. Reassessment of access logs .and safeguards that ensure staff work efficiently by use of electronic cloaking in and out and job analysis models; and analysis of operating procedures for risk controls (COSO, 2013).

Human resource controls relate to process documentation, recordkeeping and security; payroll and recruitment of employees. The human resource controls include compliance function directed to ensure adherence to state employment and labour laws and regulations. Effective human resource control system provide accountability, effective and efficient compliance environment that has procedures capable of identifying control points where errors or irregularities may occur and then mitigate the risks to allow managers to focus on strategic goals. Electronic cloaking time cards detect fraud, the creation of fake employees and identify theft which can cripple firm financially and erode trust. Additionally, human resource procedures that do not control risks often reduce effectiveness and efficiency of firm performance. Control of employee's attendance to duty and working hours may be controlled using electronic timecards authorised by human resource manager before payment. Segregation of duties in payroll procedures should also be observed (COSO, 2013 & Kinyua, 2015).

Operational controls are those controls used over execution of normal business process. Operational controls involve: Organising, assignment of tusks, designing objectives of the firm and giving authoritative direction required to achieve the mission. Operational

controls are usually given in the working and procedural manuals, company and internal audit charters (COSO, 2013).

1.1.4 Organisational Performance

Duffy, Fitzsimmons and Jain (2006) define organisational performance as the organisations capability to achieve its goals by means of resources effectively and efficiently. Performance of organizations is measured by outcomes achieved and determinants of that performance by assessing the efficiency with which that performance is achieved (Bethan et al, 2004). It is the extent to which a company achieves a set of pre- determined targets that are unique to its mission. Explaining and often predicting firm performance is a primary study objective of most management study. Organizational efficiency is a recurrent theme in most branches of management (Venkatraman and Ramanujam, 1981). Explaining and often predicting organizational performance is a primary research objective of most management research (March and Sutton, 1997). It has however become a contentious subject among organizational researchers (Barney, 1997) and continues to attract considerable contest in terms of measurement and definition (Keats & Hitt, 1988). The problems of measurement of performance arise from its multifaceted and multidimensional nature (Ongeti, 2014).

Firms measure their performance in terms of revenues, profits and market share (Alkins, 2011; Harris & Mongiello, 2001) which require considering operational performance. Reid and Ashelby (2002) argue that performance is usually measured by subjective or objective criteria. Proponents of subjective measures refer to difficulties encountered when collecting qualitative performance data from small firms and reliability problem of such data arising from differences in accounting methods used by firms. Performance

measurement provides the basis for assessing the efficiency with which that performance is accomplished (Mugambi & K'Obonyo, 2012) and includes efficiency and quality of the contribution to the firm and the level of accountability in terms of results achieved. Performance covers concept of economy which shows the extent to which the cost of input is minimized; efficiency indicating how well resources are being used to produce goods and services; and effectiveness. Measurement of performance in public service provides information on execution policy and indicates to the management the point of efficiency of the business. It is used to prioritize resources between competing needs and indicate where output improvements are necessary (Cai et al., 2011).

Public sector organizations are intended to be for providing service to public at large scale so as to solve market failure problems. An example of this is where WSPs are required to provide water services in a sparsely populated area regardless of financial sustainability just because water is a social right according to the constitution of Kenya 2010. Moreover, bureaucracy in public sector does not allocate resources to their optimum level, unless those resources improve their own career and as Somanathan, Hanson, Dorabawila and Perera, (2000) states, the cost minimization to improve efficiency (output: input) is not always relevant in delivering public resources because of social efficiency.

Several methods may be used in the measurement of performance of water service providers. The measurement methods consider cost of operations and the benefits arising therefrom. The methods include cost effective analysis, cost benefit analysis and the data envelop analysis. DEA methodology is more robust than the other methods, and can be used to measures performance taking into consideration several inputs and output

variables (Murithi, Choi & Desai, 1997) as successfully applied to measure efficiency of socially responsible mutual funds (Mwangi, 2014).

DEA model computes a ratio for total weighted output to total weighted inputs for each firm. The calculated best DMUs are assumed to be the frontier and the level of ineffectiveness of the other DMUs is compared to the efficient frontier and then acknowledged. There is no procedure or rules to set what should be the input and what should be termed the output. Nevertheless the use of DEA requires classification of inputs and output that is meaningful within the structure of the DMUs that are compared. DEA also requires that the DMUs being analysed should significantly be more than the number of inputs and outputs (Berger & Humphrey, 1997). The DEA model should include all the elements considered; weights of all inputs as well as outputs should be greater than zero. Data Envelopment Analysis (DEA) model does not apply parameters and is a technique that optimises the weighted output/input ratio of each decision making unit (DMU), subject to the state that this ratio may equal, and not exceed, one of any other data measurement unit in the data set that was used to measure performance of WSPs in Kenya.

Performance of Water service providers in Kenya was measured using DEA model based on certain key performance indicators set by WASREB (2014). These key performance indicators are: water coverage, non- revenue water, water quality, quantity of water supply, ratio of the number of meters out of total water connections, revenue collection efficiency, revenue sales, operation and maintenance cost, staff cost and staff efficiency ratio. Water service regulatory Board aggregates performance in terms of the above measures to assess and benchmark WSPs in Kenya (WASREB, 2014).

Water coverage refers to the population served with drinking water as a percentage of the total population in the area served by the WSPs. It helps in tracking the percentage achievement in providing people with water fulfilling the wish of Kenyan constitution 2010 of the right to water service to all the citizens of WSPs service area and the entire country. Non –revenue water means water lost through inefficient billing and busts out of total water produced or water lost without raising revenue. Water quality is measured by the number of laboratory tests, bacteriological levels in the drinking water and the level of chlorination; and the hours of water supply refers to the time in hours out of twenty-four hour day that water is supplied to households. Metering ratio refers to the percentage of water connections that are metered to reflect revenue recognition efficiency whereas revenue collection efficiency refers to the percentage of water sales converted into cash within the month. Revenue sales refer to the realised water sales and the operation and maintenance cost refers to the total costs of running WSPs other than investment costs. Staff costs refers to remuneration and other costs related to staff costs as the staff efficiency is measured by number of staff per every 1000 water connections . The inputs are staff costs, operations and maintenance costs while the outputs are water coverage, staff efficiency, revenue collection efficiency, water quality, metering ratio, and non-revenue water and revenue sales. Performance of WSPs is computed to reflect efficiency of the firm the output- input ratio (Kemp, 2011 and WASREB, 2013).

1.1.5 Water Service Providers in Kenya

The Kenyan water sector has been plagued by series technical, operational, commercial and financial, human and institutional problems. To address this, the government Kenya through sessional paper No. 8, national water policy of 1999 and water Act 2002

introduced water reforms. The reforms included formation of water service provider companies from the water departments that existed in the local authorities. The water reform expected that water companies would eventually be operating with a profit motive, financial sustainability; accountability and transparency (Mumma, 2005).

Water Service Providers (WSP) operates under two Acts of parliament. The WSPs are registered under companies Act CAP 486 and regulated by WASREB under Water Act 2002 as revised in 2015 of the laws of Kenya. The WSPs are licensed by Water Service Boards (WSBs) to provide water and sanitation services within their areas of mandate both in the urban and or rural areas (Water Act 2002 & Mumma, 2005).

Water reforms emphasized the need for consumer protection, access to efficient, adequate, affordable, and sustainable water service provision making sure financial sustainability of WSPs in Kenya (Mumma, 2005). Water reforms have curbed the deterioration of water infrastructure; devolution of WSPs to the county governments in order to improve efficiency of services; implementation of strong Audit Boards committees, internal audit functions and efficient internal controls (WASREB, 2014). Understandably, WSPs have improved their corporate structures which include professional internal audit and internal control mechanisms.

Most of the WSPs were created out of municipal and urban council water departments and community based water schemes. This means that some WSPs are in rural and others in urban centres. The creation of WSPs is provided for in section 46 of Water Act of 2002 of the laws of Kenya as revised through Water Act of 2015. Section 51 of the water Act 2002, requires Water service boards to appoint agents to perform responsibilities of water

services provision on their behalf and as well act as the vehicles through which the government accelerates provision of water to every house hold by the year 2030. Many performance development programs in water sector have focused only on changing the utility and have neglected the institutional environment that surrounds it (Baltaci & Yilmaz, 2006). Performance enhancement required institutional capacity of water service providers to be appropriately addressed. Institutional capacity has been built by the government on basis of organisational leadership, management and administration, commercial development, consumer orientation, technical capability, developing and maintaining staff, organisational culture and interactions with key external institutions (Baltaci& Yilmaz, 2006).The improvement of institutional capacity is a function of corporate leadership and corporate governance which includes implementation of efficient internal audit,

The Water Act of 2002 introduced comprehensive and in some situations, fundamental changes to the legal framework for the management of the water sector in Kenya. In spite of the huge scale of government expenditure in WSPS as well as determined water supply development programme envisioned in the government Master Plan, in some instances it has not been marched by corresponding performance. These unacceptable performances of WSPs have been attributed to widespread corruption and poor financial management which results from dismal adherence to internal controls and poor corporate leadership practices (Ongeti, 2014; WASREB, 2014). The government of Kenya needs to strengthen internal audit that continually keep evaluating efficacy and efficiency of internal controls and give recommendations thereof in order to enhance water service delivery.

Internal audit was introduced at the WSPs after the water reforms that included Water Act no. 8 of 2002 and the finance Act 2009 in the Laws of Kenya (Mumma, 2005). The existing internal audit is weak with scarce human resource and only manned by one or two staff members in a WSP (WASREB, 2014). Board audit committee has the responsibility of over sighting internal audit and the management, risk management and control, evaluating internal audit including hiring and firing of the chief internal auditors in WSPs. Unfortunately most of WSPs board of directors may not be competent enough and have the prerequisite qualifications to handle the audit committee docket (WASREB, 2014).The internal audit is commonly assessed by the Managing director and the finance committee which weakens corporate governance structures in most WSPs (WASREB, 2014).Nevertheless, corporate governance guidelines issued by (WASREB, 2013) direct all water service provider companies in Kenya to implement effective internal audit departments and audit committee well-resourced and structurally placed in organisation charts to ensure their independence and objectivity. Roles of internal audit committee includes: approval of the internal audit plan, budget; approval of internal audit reports before submission to the Board; making sure independence of internal auditor, training for audit staff, ensuring competency of internal auditor and reviewing internal audit competence; hiring and renewal of contracts for the internal auditor, as well as determining the auditor remuneration (Carcello &Neal, 2002).

The causes of fraud, corruption and other malpractices witnessed in WSPs in Kenya are attributed to inefficient internal audit or lack of it in the WSP companies (Mumma, 2007. This is a major challenge for the failing companies because they are too small and do not have enough resources to finance the establishment of internal audit function. However,

the performance of some WSPs has been rising as a result of effective and efficient internal audit functions that help to reduce corruption, frauds, water wastage to enhance firm performance. WSPs need to improve efficiency of management which in turn strengthens its internal audit and internal controls so as to improve performance of the companies.

Institutional characteristics in WSPs include size of the firm as measured by the number of water connections to households and Location of WSPs which refers to the geographic positioning of the WSPs. WSPs are located either in the rural areas or in Town centres. However, some WSPs area of mandate covers both Town centres as well as rural areas. The effect of firm characteristics is explained .Size of a firm refers to the number of water connections in a WSP which have diverse capabilities and the population served as compared to the entire population in the given area of coverage. The generation of revenues for WSPs is dependent on the number of consumers of billed water services. Large water companies generate more revenue than smaller companies. Large budgets and revenues indicate that a firm has financial capability of hiring and retaining competent staff including internal auditors. The rich companies are also capable of instituting strong internal control mechanisms as well as training the staff. Larger companies enjoy economies of scale to produce superior performance relative to smaller companies (Penrose, 1959).

In Kenya, WSPs that control a budget of over 100 million per year have been able to have efficient internal audit as well as strong internal control system and hence have generally performed well. Alternative points of view suggest that size is correlated with x-inefficiencies developed that lead to relatively inferior performance (Leibenstein, 1976).

This position is viewed in some large and very large companies which seem to suffer from dis-economies of scale. The size of a WSP is important to its viability due to increased revenues and profitability such that large companies may recruit and retain proper personnel including internal auditors (WASREB, 2015).

Location of the firm, whether rural or urban, influences the revenue collection. Urban companies generate more revenue than the rural companies due to differing rate of consumption and the fact that some rural based consumers easily access raw water from rivers and thereby reducing per capita water consumption from WSPs in the rural areas. Water services in Kenya are characterized by isolation particularly in the slums of major towns and in rural areas. The WSP services are of poor quality due to intermittent water supply and inability to pay for the water service. Only 29 out of 93 WSPs in Kenya provide adequate water supply (WASREB, 2013).

It is clear that the potential of WSPs in Kenya to deliver services economically and efficiently lies in increasing the competence of personnel to do so by the WSP companies. Water service provider companies need to reduce: corruption, frauds, water wastage, improve water quality and supply and service financial sustainability (WASREB, 2014). The management of WSPs in Kenya require to embracing the spirit of water reforms which calls for consumer protection, access to efficient, adequate, affordable and sustainable water services (Mumma, 2005). To achieve the above, WSPs should have efficient internal audit, effective audit committee and effective internal controls as directed by WASREB and Finance Act 2012 (WASREB). Corporate governance structures of WSPs in Kenya are very weak and require to be strengthened

such that the relationship among internal audit, Board Audit committee, internal control and company performance can yield good outcomes (WASREB, 2014).

Internal controls at WSPs are the procedures, policies and practices established by the management to improve achievement of goals for those companies. Water services regulatory Board (WASREB), has issued policies, directives and regulations to guide the management of the WSPs in Kenya. WSPs are required to be licensed by the water service boards (WASBs)and supervised by water service regulatory board that regulates the tariffs and ensures good corporate governance structures which include: audit committee, internal audit, management and the External audit. The WSPs in Kenya are also guided by international accounting standards, international financial reporting standards (IFRS) and finance Act 2012 of Kenya and by COSO, 1992 internal controls framework, operating manuals which include: finance manual, internal audit manual, technical services manual, procurement manuals, risk management policy and other operating policies of the board of directors so as to improve firm efficiency.

The operating manuals, policies rules and regulations are meant to safeguard assets from losses through accidents or fraud, to ensure separation of duties, identify levels of reporting and authorization; institute information technology controls such as: Access to systems and data, segregation of IT duties, review of access logs, Audit trail and control of human resource issues of remuneration. Clocking in and out electronically and separation of payroll duties; and to ensure efficiency and truthfulness of financial reporting, accurate, timely and complete information, to ensure compliance with law and regulations; promote efficient and proficient procedures and improve performance of

WSPs that accomplish objectives and goals which ultimately ensures profitability, financial sustainability and improved service delivery (WASREB, 2013)

Water service regulatory Board (WASREB, 2015) has water services performance pegged on certain indicators. The indicators for performance of WSPs in Kenya are: Water service coverage, quality of water, adequacy of water supply, water loss, number of metered connections ratio, staff efficiency per 1000 connections, and operations& maintenance costs cover. Revenue collection efficiency and personnel expenditure out of total operating costs plus maintenance costs. The indicators are explained below.

Water service provision efficiency is measured using the number of water connections to households. This indicates the number of people receiving clean adequate water in the WSPs area of jurisdiction; Water quality is measured by the number of tests conducted on water consumed. This has the effect of ensuring that water is treated and is fit for human consumption to enhance health status of individuals; number of water supply measures the cumulative hours that people are supplied with water in a 24 hour day. It establishes the adequacy of water service by a WSP; Non-revenue water refer to water produced by a WSP which does not translate to a sale. It is the water produced, treated and distributed but through inefficient meter reading and billing or through pipe bursts it is wasted and does not earn revenue; the ratio measures the level of accuracy in billing for water consumed. It indicates the efficiency with which a WSP is able to capture revenue earned from the water supplied; Staff productivity refers to the number of staff employed by Water utility to serve 1000 connections of water**;** The ratio indicates the staff costs for a WSP as a percentage of total operating and maintenance cost; The Metering ratio measures the efficiency with which cash is collected from the debtors for a given period.

Revenue collected from the amounts billed indicates the ability of the management to fund its operations and ensure financial sustainability; the operation and Maintenance Cost coverage refers to the extent that a Utility covers its own operating cost**.** WSPs are anticipated to reach self-financial sustenance when their cost coverage exceeds 150 percent of operating and maintenance cost (WASREB, 2014).

1.2 Research Problem

The financial scandals witnessed internationally including United States of America resulted in investors loosing over 180 billion US dollars. In Kenya, Statistics available for year 2014 from capital market authority show that most quoted companies have continued to register declining financial performance. Kenya Airways reported a loss of ksh.10 billion, Mumias Sugar Company Ksh.3.4 billion loss, Uchumi Super Markets ksh.226 million loss, Eveready East Africa Limited ksh.248million loss, CMC Holding was suspended from NSE. In America, World.com and Enron scandal led to enactment of corporate and auditing, accountability and responsibility Act with the aim of strengthening corporate governance structures that include internal audit and audit committee. The major financial scandals and other inefficiencies have been attributed to weak internal audit, poor internal control systems and weak corporate governance which the Sarbanes Oxley Act of 2002, tried to address. Internal audit is an important part of government financial management and an instrument for improving performance in the public sector management of national economies.

However, internal audit may require other variables to intervene to accelerate, decelerate or moderate the relationship between internal audit and firm performance. Such variables could be WSPs size and location and internal control (AL Matari, Swidi & Fadzil, 2014).

Internal audit departments have the responsibility of providing management with re-assurance that internal control systems are adequate and effective (IIA, 2009). However there is continued poor performance in firms where budgets are not followed, rules and regulations on the use of finances and other non-financial controls such as ICT, human resource controls and operational controls are not adhered to which lead to massive frauds and low efficiencies. This has put companies at risk of financial inadequacy, employee dissatisfaction and poor organizational performance (Mikes & Kaplan, 2014).

The government of Kenya and donor community have invested heavily in the water sector particularly in WSPs to ensure 100% water coverage to fulfill Kenya's vision 2030 and comply with the constitution of Kenya 2010 on provision of water as a human right to all. However, despite the massive scale of government investment in WSPS as well as ambitious water supply development programme, in some instances it has not been marched by commensurate performance. Only about 50% of the rural population in Kenya have access to piped safe water (WASREB, 2015). Additionally only 66% of urban residents have access to piped and dependable water supplies (Mumma, 2005). The poor performance of public WSPs is attributed to immense corruption, fraud and lack of effective internal Audit, poor adherence to internal control and presence of weak corporate governance practices (Mumma, 2005 &Ongeti, 2014). Concerns of performance in WSP in Kenya have been growing over time because of the important position they hold in the country's social - economic development transformation as envisioned in vision 2030 (Kobia & Mohamed, 2006).

Lack of good corporate governance practices resulted to corporate scandals and financial crisis, poor organizational performance. Consequently, corporate regulatory boards

including WASREB have turned their focus on increased requirement for disclosures on corporate issues. This requirement called for increased demand for internal audit services to provide assurance on corporate governance practices and processes that include internal controls and management of risks. Thornton (2004) notes that there has been a major shift in stakeholders' expectations pertaining internal audit functions. There is more focus nowadays on facilitation of the identification, assessment, and control of risks rather than on financial control ad compliance.

Previous studies have focused on the contribution of internal audit on organisational performance (Cohen & Sayag, 2010; Nyakundi, Nyamita & Tinega, 2014; Walsh & Sewar 1990). Other studies have focused on the influence of internal control systems on performance of business enterprises (Nyakundi, Nyamita& Tinega, 2014). Mawanda (2008) research focused on the influence of internal controls on financial performance in an organizations of higher education. Khamis (2013) research was on involvement and benefits of internal controls to the financial performance of financial institution. The research results indicate that internal audit influences firm performance but cannot alone explain the variability in the firm's performance. This means that other variables such as institutional characteristics such as size and location of water service providers and internal controls come in to moderate and mediate the relationship among internal audit and performance of firms because they most likely determine the revenues earned and the resources available to establish internal audit and internal control system which consequently enhance firm performance. Internal controls provide means by which internal audit enhances firm performance through control of waste, deterring frauds and improving firm operational efficiencies. Empirical evidence adduced on the linkages

between internal audit, institutional characteristics, internal controls, and firm performance was, however, not conclusive on the nature and strength of the relationship and/or influence. There is a dearth in the literature on the subject matter of this research and its envisaged relationships. This creates conceptual knowledge gaps that the current study sought to address.

A research by Badara and Saidin (2013) examined the effects of effective internal controls on the internal audit efficacy. The study focus was to establish the influence of internal controls on internal audit in the local authorities of Kano state. The results were that internal controls have a positive influence on internal audit in local authorities of Kano state of Nigeria. The study never focused on the effect of institutional characteristics on the association between internal audit and performance of WSPs in Kenya. Additionally Gamage, Lock and Fernando (2014) investigated the association between the internal controls and financial performance of state corporations in Nigeria. The finding was that efficient controls positively influence firm performance. The study failed to capture the influence of internal audit, mediation role of internal control as well as moderational role of institutional characteristics on the association between internal audit and performance of water service providers in Kenya which is a clear indication of knowledge gap that this study sought to address.

Studies by Majumdar (1997) and Loderer, Neusser and Waelchli (2009) examine the effects of age and size of companies on firm performance in Asian manufacturing companies. The studies found out that age and size of firm have significant influence on performance. Larger firms and older firms positively influenced performance of manufacturing firms in Asian cities. Nevertheless they did not capture the effects of

rural/urban set up and the size of WSPs in Kenya on performance and how they can moderate the relationship between internal audit and efficiency of WSPs in Kenya.

Research gaps on the moderating function of institutional characteristics- Size and Location and mediation role of internal controls in the association between internal audit and performance of WSPs in Kenya exists which was addressed by this study. The study sought to answers the following questions: How is the individual and joint influence of institutional characteristics and internal control on the association between internal audit and performance of WSPs in Kenya?

1.3 Study Objectives

1.3.1 General Objective

The general objective of the research was to examine the relationship among internal audit, institutional characteristics, internal controls and organisational performance of Water Service Providers in Kenya.

1.3.2 Specific objectives

The specific objectives were to:

i. Establish the influence of internal audit on performance of Water Service Providers in Kenya.
ii. Examine the influence of institutional characteristics on the relationship between internal audit and performance of Water Service Providers in Kenya.
iii. Examine the influence of internal controls on the relationship between internal audit and performance of Water Service Providers in Kenya.

iv. Establish the joint influence of internal audit, institutional characteristics and internal controls on performance of Water Service Providers in Kenya.

1.4 Value of the Study

This study enhances building of existing theory by confirming theoretical postulations of agency theory, contingency theory, monitoring theory, policeman theory as well as resource-based theory. The study reaffirmed the explanation of agency theory and monitoring theory that internal audit reviews the operations and adherence to internal controls by the management to ensure accountability and transparency in financial and non-financial reporting. The research also found that internal audit effectiveness in enhancing performance of WSPs in Kenya depends on institutional characteristic-size and Location of WSPs and internal controls. This confirms the prepositions of the Contingency theory which explain that, internal audit effectiveness to enhance firm performance depends on firm institutional characteristics.

The study added to the position explained by policeman theory in that internal audit was found to oversee the internal controls that safeguard the assets of WSPs and also reviewed the financial reports to assure the stakeholders of their accuracy and completeness. The study confirmed that failure to provide adequate resources leads to poor performance in WSPs. This is a confirmation of postulations of resource based theory that different levels of resources and their uniqueness causes variation in firm performance.

The result of the study will inform policy formulation in WSP in Kenya with a view to improving on corporate governance structures by instituting efficient internal audit,

Internal audit should be well resourced to enhance its effectiveness. Policies should be developed that create a good internal audit climate as well as provision of adequate resources to internal audit function. Better policies to address institutional characteristics and adherence to internal controls would spur firm performance. Policy makers therefore benefit in understanding how key corporate governance structures such as monitoring adherence to key internal controls and risk management policy as well as institutional characteristics could compromise efficient delivery of quality water services and as such ensure correct polices are set and implemented by all WSPs irrespective of their sizes and locations.

Managers would benefit from the results of this study on the appropriate enforcement of adherence to internal control and optimal utilization of firm resources for internal controls and internal audit lead to improved performance. The study revealed that internal audit, institutional characteristics and adherence to internal controls positively influence performance of companies. Internal audit positively and significantly improve performance of WSPs in Kenya. Managers of firms with no internal audit function will be encouraged to instate and strengthen effectiveness of internal audit departments. The relationship between internal audit and WSP performances is mediated by internal controls and moderated by firm size and rural /urban positioning. The managers of companies learn that internal audit require to be well resourced and be able to oversee adherence to internal controls and monitoring company operations as it is a core activity of corporate governance that improves performance of WSPs.

1.5 Organization of the Thesis

The first chapter presents the background of the study, introduces the main concepts of the study which include internal audit, institutional characteristics, internal controls, organisational performance, the research problem, the objectives of the study and it also covers the value and the way the study is organised.

Chapter two discusses the theories and empirical studies explaining the association among main research variables. The theories are: contingency theory, resource based theory, monitoring theory, agency theory and policeman theory. A synopsis of empirical studies given include: Internal audit and firm performance; Internal audit, Institutional characteristics and firm performance; internal audit, internal controls and firm performance; internal audit, institutional characteristics, internal controls and firm performance. The conceptual framework and study hypotheses are also discussed.

The third chapter focuses on study methodology and design, the philosophy for the study, study target population, data collection tools, operationalization of variables, reliability and validity tests, normality tests, heteroscedasticity tests and descriptive statistics for analysing data. Chapter four has a descriptive data for all the sub-variables of independent variable; moderating variables; intervening variables and dependent variables which was analysed using the means, standard deviation, frequencies and correlation coefficient. Correlation analysis and the chapter summary are contained here. The pilot testing using Cronbach alpha was also discussed in this chapter. Chapter five focuses on the discussion of findings of hypotheses testing including the association between internal audit and performance, internal audit and performance of WSPs in Kenya. The internal audit and performance of WSPs in Kenya relationship as moderated

by institutional characteristics – size and Location; the mediating effect of internal controls on the relationship between internal audit and performance of WSPs in Kenya and the joint influence of internal audit, institutional characteristic – size and location, internal controls on performance of water service providers in Kenya. The sixth chapter summarises the results of the study, has conclusions, contributions of the study to knowledge, to management and to government policies and practice. The chapter as well gives the limitations of the study and the future direction for more research work.

CHAPTER TWO

LITERATURE PREVIEW

2.1 Introduction

The chapter reviews the literature on the relationship between internal audit, institutional characteristics, internal controls and performance in public sector companies. The theories are discussed in section 2.2 in the context in which they contribute to the study on association between internal audit and firm performance, the moderation by institutional characteristics and intervention by internal controls. Section 2.3 reviews empirical literature, summarizes literature review and knowledge gaps respectively. Section 2.4 outlines the research framework while section 2.5 presents the study hypotheses.

2.2 Theoretical Foundationof the Study

Several theories explain the association between internal audit and efficiency of firm. The theories include agency theory (Adams, 1974), monitoring theory (Wallace, 1980), policeman theory (Adams, 1974), contingency theory (Lawrence& Lorsch, 1967; Woodward, 1958), and resource based theory (Penrose, 1959). These theories are discussed here below.

2.2.1 Agency Theory

Jensen and Meckling (1976) developed the agency theory which relates to independent variable internal audit, explains the relationship between the principal and the agent; where one part (principal) delegate tasks to another (agent). Watts and Zimmerman (1986) posit that the audit serves the interests of both shareholders as well as the

management. While the shareholders own the firm, the management (agent) exercises the control of that firm. If shareholders and management each seek to maximize their utility, the agent may possibly prioritize own interests to the detriment of those of the principal. To limit divergences from own interests, the principal choose to set up incentives for the agent and then create internal audit as a major control component to control or alleviate conflicts of interest. The agent may use information acquired in the course of duty to his/her advantage and therefore there is need for regulation to ensure transparency and accountability on the part of the agent which is achievable by use of internal auditing.

The internal audit function plays the monitoring role to assure the stakeholders that all is well. Because of rational expectations of the stakeholders which include the Board of directors, the agent (management) publishes periodical financial statements. Since the management may falsify the financial reports to hide their misdeeds, internal audit can be an essential factor for monitoring the agency relationship and ensure accountability and transparency on the part of management (Colbert, 2002). The interests of the agents require to be aligned with those of the principals through appropriate monitoring of the behaviour and operations of the management on a day today basis by the internal auditor (Colbert, 2002).

To solve problems of information asymmetry, the best that the principal can do to protect his interest is to institute effective internal audit and internal control system. The internal audit through the audit Boards help to bridge the information gap by producing audited financial statements and other reports assuring the shareholders about the on-going developments. Additionally internal audits monitor the day today activities of the managers and advices the Board of directors who represent the shareholders. Similarly

audit boards enforce internal controls which ensure that executive management does not engage in activities that compromise firm economic wellbeing but improves performance of the company. The principals can also employ an auditor to enforce internal controls on behalf of the principal which would enhance confidence on the stakeholders/shareholders on the operations and status of the firm (Hayes & Davis, 2004). The auditor acts as the intermediary between management and users of the management information on the corporation to ensure there is no information asymmetry (Hayes at al., 1999). Agency theory relates to the independent variable and contributes to this study by suggesting the monitoring role of internal auditor to ensure transparency and accountability on the part of the Agent that influences organisational performance of companies. The agency theory postulates that internal audit enhance transparency and accountability from the agent. However it fails to consider the required resources as well as internal controls necessary to ensure information symmetry and links internal audit and performance

2.2.2 Monitoring Theory

The monitoring theory by Wallace (1987) explains the relationships based upon conventional behavioural premises (Donaldson & Davis, 1991). The theory explains that employees are rational, risk-averse and are selfish actors who are motivated by self-interest (Beaver, 1989).Monitoring theory precludes that when the agent accepts to work on behalf of the principal, the agent is well aware that he will be monitored to ensure optimum efficiency .Wallace and Beaver (1989) explained that the monitoring theory aims to reduce problems of moral hazard and information asymmetry between the principal and the agent. Moral hazard is the problem of the agent possessing superior information and thus being in a position to use it for his own selfish interest at the

expense of the principal (Beaver, 1989). Public disclosures are one way of controlling and restricting the superior information position of management.

The internal audit is hired by the board to examine all the company information, its environment and restrict the superior information position of management in order to solve the problems of asymmetry and moral hazard. Although the monitoring theory stresses the need for internal audit to monitor information and ensure transparency it fails to explain other roles such as consulting and assurance provision to stakeholders. Therefore, internal audit as explained by the theory is one way of controlling the flow of information enhancing transparency and accountability (Beever, 1989; Wallace, 1987).

Internal audit monitors the activities of the management and assures the stakeholders on all operations and reports of the organisation. Monitoring theory is linked to the independent variable studied because the theory advances the function of internal audit in monitoring adherence to internal controls and provision of assurance services to stakeholders to improve performance of organisations (Hays & Davis, 2004).

2.2.3 Policeman Theory

The policeman theory by Adams (1974) asserts that internal auditing is responsible for searching, detecting and preventing fraud. It focuses on a designed internal audit to safeguard the assets of companies and assist in verification of accounting information for decision making purpose (Van Peursen, 2005). However, the policeman theory cannot clarify the change of auditing to confirmation of the true and fair financial statements which is currently the main focus of internal audit as it gives reassurance to management on those statements. Nevertheless, the policeman theory contributes to the study due to its

advocacy of safeguarding the public company's assets and ensuring accountability on the part of managers of public institutions (Morgan, 1979).

From the perspective of the theory, internal audit is responsible for monitoring firm operations to safeguard stakeholder's assets and guaranteeing accountability and transparency (Morgan, 1979). Internal audit also verifies information of firms for decision making by stakeholders (Gaa, 1991). The policeman theory emphasizes the need for accountability and economy as assured by the internal audit (Rulund & Lindblom, 1992). The theory relates to the independent variable and suggests the importance of internal audit on safeguarding assets which improve organisational performance of companies by preventing, deterring and investigating frauds and corruption matters which lowers the cost of doing business and therefore increasing firm efficiency. Policeman theory (Adams, 1974) takes the internal audit to be the deterrent and detector of frauds and a safeguard of the assets of the firm. It explains the linkage between internal audit, internal controls and performance.

2.2.4 Contingency Theory

The contingency theory developed by Woodward (1958) and Lawrence and Lorsch (1967) argue that there is no single best way of management that is most efficient. The best way to manage depends on the prevailing environmental circumstances in which a concern operates (Galbraith, 1973; Fiedler, 1964). This is why contingency theory is often called the 'it all depends theory', because of its prescriptive nature of success of anything depending on prevailing circumstances (Fiedler, 1964). Contingency theory precludes that under different circumstances, different solutions may prove most efficient (Woodward, 1958). This can be considered one of the primary insights of the theory, because instead of

prescribing universally applicable organisational-management practices, the theory asserts that different circumstances require different firm structures and strategies (Bums & Stalker, 1961). Organisations must ensure that strategic objectives including strategic internal audit are achieved.

Contingency theorists assert that organisational success is a function of how well different corporate governance structures complement each other to maximise on firm performance (Donaldson, 1995; Lawrence & Lorsch, 1967). They hold that the most efficient firm structural design is where the structures are well aligned to the prevailing organisational contingencies (Pfeffer, 1982). A firm that aligns its structures to the existing contingencies enjoys higher performance. A firm that provides adequate resources and ensures effective and efficient internal controls enhances the effectiveness of internal audit that consequently improve firm performance. The alignment of firm structures produces surplus resources and leads to greater expansion of the organisation (Hamilton & Shergill, 1992). This is consistent with the assertion by Scott (2004) that companies whose structures best match the internal contingencies achieve the best results.

Contingency theory is acknowledged as one of the theories which have used lately in auditing studies (Abushaiba & Zainuddin, 2012; Valenciene & Gimzauskiene, 2009). Contingency theory was used in the background of internal audit performance which depends on the institutional characteristics and internal controls, to enhance performance of firm. In this study, contingency theory explained how internal audit endeavours to enforce adherence to internal controls to achieve superior performance. Thus, from a contingency theory perspective organisational performance is contingent upon internal

audit effectiveness which is achieved through enforcement of adherence to internal controls as intervening variables and moderation of firm characteristics through allocation of resources by the firms. The Contingency theory (Woodward, 1958) explains that management of firms should depend on good firm structures and inter-dependence of those structures. It links performance to internal audit, internal controls and institutional characteristics.

2.2.5 Resource Based Theory

The resource based theory developed by Penrose (1959) states that different assets owned by an organisation can have key influence on its performance. Variations in terms of assets will certainly lead to performance differences. Therefore, possession of resources which are unique is a source of superior performance (Pasanen, 2013). Chandler (1962) and Penrose (1959) argued that resources were the single most core source of firm performance. This theory states that the different resources owned by a firm can have significant influence on its performance. RBT further states that a successful business must have resources to use for efficient performance. Penrose (1959) posited that the manner in which a firm deploys its resources may give it competitive advantage over its competitors.

The Resource based theory explains how the availability and efficient utilization of resources can contribute to a firm performance. This theory suggests that resources are not uniformly distributed across firms and that the differences continue over time (Amit & Schoemaker, 1993; Penrose, 1959). Using the assumption, researchers have conceptualized that firms with valuable, unmatched and non – substitutable resources can achieve superior performance by adding fresh value – creating strategies that cannot be

easily matched by other companies (Ongeti, 2014). The other argument of this theory concerns resource flexibility and slack in firms. Flexibility of resources affect the response achievement rate to environmental changes and enhance likelihood of the implementation of the changes. There are two kinds of flexibility that affect firms. One of the two is internal flexibility which refers to the adequacy and the way factors of production of the firm are structured. External flexibility refers to the way the firm relates with its environment. Systems relations may also cause dependency on other factors, which is likely to have negative effects for the business (Pfeffer & Salancik, 1978). Dis- economies of scale may negatively affect performance of the firm.

The theory suggest that companies employ their resources in a way to maximize their performance one of which is by creating and implementing efficient internal audit capable of improving organisational performance. Resource based theory is linked to institutional characteristics that ensure provision of resources to the firm such as: competent internal audit, efficient internal controls and risk management policies and good working environment of water regulatory body such as WASREB. Resource based theory (Penrose, 1959) explains that firm performance depends on resources available and that uniqueness and non- substitutability and flexibility of those resources course the variability of performance among firms. It is linked to dependent variable (performance) which depends on the internal audit, internal controls, and institutional characteristics.

2.3 Empirical Literature Review

The section focuses on the empirical study on the association between internal audit and organisational efficiency, moderating role of institutional characteristics, the mediation of internal controls and the joint effects of internal audit, institutional characteristics, and internal controls on organisational performance**.**

2.3.1 Internal Audit and Firm Performance

According to Johl, Johl, Subramaniam and Cooper (2013), test on the influence of internal audit on financial reporting in Malaysian companies using a regression analysis approach. The study findings pointed to a positive relationship between internal audit quality and irregular accruals inferring that some internal audit qualities have an important part in the financial reporting process. Though the study is a contribution to regulatory reforms with Board of directors moderating the observed relationship, the study considered the quality of financial reports and not the levels of firm financial performance as influenced by internal audit quality. The study failed to capture the moderation and intervention effects of institutional characteristics and internal controls on the relationship between internal audit and performance of WSPs in Kenya.

The study by Aldamen, Duncan, Kelly, McNamara, Nagel (2012) on investigating whether Board Audit committee (AC) characteristics controls the performance of firms during adverse economic downturn event such as Global Financial crisis, that usedthe logit regression tests to analyze the data on audit committees and the Board of directors. The findings were that smaller audit committees with more experience and financial expertise enhance firm performance. Longer serving chairs of audit committees were however found to negatively influence financial performance of firms but have positive

impact where the chair of the board and other members of the Board are independent and have many years of managerial experience**.**Corporate governance improves audit committee character that positively affect performance especially during adverse economic shocks like the global financial crisis revealed that performance is negatively related with the number of audit committee members. The study did not capture the influence of internal audit, institutional characteristics as well as internal controls on performance of WSPs in Kenya.

Cohen and Sayag (2010) studied the efficacy of internal audit using descriptive analysis design by researching on the following variables: industry of the firm; expertise of internal auditors; worth of audit work; independence; training and top management support. Top administration support was seen to be the major determinant of internal audit effectiveness for enhancing performance of hotels in Israel. The research focused on determinants of internal audit. The effect of audit, internal controls, institutional characteristics and WSPs performance was overlooked. The study was a longitudinal study and was done in Israel which is a developed economy.

A cross sectional survey on 108 Israel firms that employ internal audit to determine the perceptions on internal audit function, effectiveness and determinants of internal audit effectiveness in an organisation was done by Dominic and Nonna (2011). Data on the effectiveness of internal audit were derived from the managers as respondents and data on what determines effectiveness of internal audit from the internal auditors. The results were that effectiveness of internal audit is determined to a large extent by firm organisational structure, the status and relationship of internal audit works, staffing level of internal audit department and the competencies of staff in that department. The

research never captured the relationship between internal audit and firm performance as moderated by institutional characteristics and mediated by internal controls in the WSPs in Kenya.

An investigation on internal audit position in the firm's organisation chart and how it enhances the audit independence and its effects on audit role in promotion of corporate structures was carried out by Sarens and Beelde (2006). The survey of Chief Audit executives in European companies used multivariate regression analysis. The findings were that, the internal audit has a wide scope, free access to information, adequate resources to monitor various company decisions and adequately advice managers, provide oversight and ensure own independence and objectivity to promote corporate governance and firm efficiency. The study has not captured the relationship between internal audit and performance of WSPs in Kenya. It never related the internal audit, internal controls and institutional characteristics of WSPs to improve their performance

An investigation by Van Peursen (2005) on how internal audit deals with the conflict of interest between the double roles of consulting and assurance service provision to management. The survey of internal Auditors in Israel hotels found out that there is tension in maintaining the two roles leading to a mix up of roles which hinders internal audit effectiveness. There are both conceptual and contextual gaps. No consideration was given to internal controls, firm characteristics of WSPs in Kenya and further no relationship between internal audit and firm performance was evaluated.

2.3.2 Internal Audit, Institutional Characteristics and Firm Performance

A research on efficacy of internal audit as a tool of improving corporate governance and accountability in state firms in Kano, Nigeria was conducted by Unegbu and Koda (2011). The study focussed finding out the importance of audit function existence in public sector and the effectiveness of auditing in checking fraud in pursuance of complaint that internal audit was much understaffed and under resourced to be fully efficient. The findings were that: internal audit can economically detect fraud and fraudulent activities in public organisations and that public sector in Kano state of Nigeria have noteworthy numbers of internal audit departments who can function economically to promote efficiency in state corporations but they were not sufficiently equipped to achieve their task efficiently. There is a methodological and contextual gap which needs to be filled by replicating the study on Kenyan water service providers. Study does not relate efficient internal audit to performance of the organisations. It does not capture the determinants of efficient internal audit and the relationship between internal audit, institutional characteristics as well as internal controls and performance of WSPs in Kenya.

Unegbu and Koda (2011) conducted an empirical study on effectiveness of internal audit as a tool of improving public sector management. The research used Kano state ministry of finance. The hypothesis used were stipulated and questioned the significance of existence of audit function in public sector and the effectiveness of audit in detecting fraud in pursuance of complaint that internal audit is too short-staffed and under resourced to be fully effective. The findings were that: internal audit can effectively check fraud and fraudulent activities in public sector and that public sector in Kano state

of Nigeria have significant numbers of internal audit departments to function effectively but they were not adequately equipped to accomplish their task effectively. The Study does not relate internal audit to performance of the organisations. It also did not capture the moderation and mediation effects of institutional characteristics and internal controls in that relationship. There is a methodological and contextual gap which needs to be filled by replicating the study on Kenyan water service providers.

Aldamen, Duncan, Kelly, McNamara and Nagel (2012) used firm size and systematic risks measured in terms of Beta as control variables when investigating the relationship between internal audit and firm performance in a logistic regression framework. The study findings show that size and firm systematic risk have a significant influence on performance. The study does not show the effects of internal audit, internal controls, and institutional characteristics on performance of WSPs in Kenya. There is a contextual and methodological gap which requires to be filled.

2.3.3 Internal Audit, Internal Controls and Firm Performance

An empirical study on effectiveness of internal audit in Greek hotel business was done by Theofaris et al. (2011). The study variables were: control environment, risk assessment, control activities, information and monitoring as independent variables while efficient internal audit was the dependent variable. Using judgmental sampling technique, the study revealed that effectiveness of functioning of all aspects of internal control system as monitored by internal audit, and their decisive role contributed to success of Greek hotel business. All the elements of internal controls are important for improvement of organisational performance. The study did not show the importance of Audit board and

efficient internal audit, institutional characteristics as well as internal controls in the performance of WSPs in Kenya.

Badara and Saidin (2013) studied the effect of internal controls on internal audit effectiveness to improve performance at local Government level in Nigeria. The findings were that competent internal controls improve the efficiency of internal audit at local authority level to improve performance. Variables need to be tested using local study of WSPs in Kenya. The study should show the relationship between: internal controls, internal audit, institutional characteristics and performance of WSPs. There is need to replicate the study in Kenya and base the efficiency of internal audit on performance outcomes of WSPs.

Sarems and Bebedde (2006) sought to find out whether the position of the internal auditor in an organogram promotes the auditor's independence and how it affects his role in promoting of corporate governance. They found out that the internal audit has a wide scope of work, free access to information, and adequate resources to monitor various company decisions and internal control systems. As such, auditors are therefore adequately advice managers, provide oversight on controls and ensure his/her own independence and objectivity in consulting management on company matters that affect organisational performance. The study has not captured the relationship between internal audit and performance of WSPs in Kenya. It never related the internal audit, internal controls and institutional characteristics of WSPs to improve their performance. This study has contextual and methodological gaps and requires to be re done in the Kenyan WSPs context.

According to Romar and Moberg (2003), its weak internal control systems that contributed to the WorldCom scandal in 2002. The findings were that WorldCom's development goals were not realistic. This was attributed to failure to have adequate appraisal of internal and external factors influencing firm performance as well as reporting; luck of separation of responsibilities; access to data alteration not being controlled. The study never clearly identified the role of internal audit to improve firm performance and nor did it capture the relationship among the internal audit, internal controls, institutional characteristics on efficiency of water service providers in Kenya. The relationship is mediated and moderated by internal controls and institutional characteristics respectively.

2.3.4 Internal Audit, Institutional Characteristics, Internal Control and Performance

Majumdar (1997) researched on the impact of firm age and size on firm level performance. The results were that Indian older firms are productive and less profitable. Large firms were found to be more lucrative but less productive due to industrial restrictions. Loderer, Neusser and Waelchli (2009) studies on the effects of firm age on performance in India showed that firms age in their life cycle and slowly lose their capability to compete. The study concluded that firms' age affect performance negatively. There is no mention of roles of internal audit; no relationship among the three variables: internal audit, internal controls, institutional characteristics and performance of WSPs in Kenya.

Eko and Hariyanto (2011) studies on the association between internal control, internal audit, and firm commitment with good Governance found that internal control system, internal audit, and firm commitment have a positively, significant association with good governance. This was an Indonesian case study of local government in Java province, Indonesia consisting of 35 units. The study is in a foreign country; there is a contextual gap and it does not consider the moderating and intervening effects of institutional characteristics and internal controls on performance of WSPs in Kenya.

The study conducted by Kinyua, Gakure, Gekara, and Orwa (2015) evaluated the influence of controls on performance of firms listed in the Nairobi Securities exchange focusing on the five elements of internal controls system and their effects on financial performance on the listed companies in Kenya. The research design applied was a survey on a population of 62 firms in Kenya which used stratified sampling technique. Both primary and secondary data were collected. To collect primary data the researcher used structured questionnaire and collected secondary data from audited financial statements. Data analysis for the study used descriptive and inferential statistics on SPSS computer software. The research found a significant association between internal controls and financial performance of listed companies at the NSE, Kenya. The study does not consider the moderating effect of institutional characteristics and mediation role of internal controls in the relationship between internal audit and performance of WSPs in Kenya.

2.4 Summary of Literature Review and Knowledge Gaps

This section summarises the theoretical and empirical postulations of the association between internal audit and firm performance as well as the moderating role of institutional characteristics and intervening role of internal controls in that relationship. The section provides a detailed description of various theories that guide the study and which form the foundation of the study. The main theories anchoring the study are the Contingency theory (Woodward, 1958), monitoring theory (Wallace, 1980), agency theory (Adams, 1974), policeman theory and the Resource based theory (Penrose, 1959).

Resource based theory (Penrose, 1959; Chandler, 1962) explains how the availability and efficient utilization of resources can contribute to a firm's performance. The contingency theorist shows that the best way of managing that is most efficient depends on the prevailing surrounding circumstances to which an organisation operates in (Fiedler, 1964; Galbraith, 1973; Lawrence &Lorsch, 1967). This indicates that managerial success is dependent on firm's ability to fit its internal structures and operations to its ecological contingencies. Unless internal controls are closely monitored by internal audit there is likelihood of compromising firm performance. Similarly, Monitoring theory (Wallace, 1980) could best be used to clarify the monitoring task of internal audit in enforcing internal controls in the best interest of the shareholders (Morgan, 1979).Likewise police man theory (Adams, 1974) explains the role of internal auditor in safeguarding the correctness and effectiveness of financial reports as well as physical safeguard of assets. Agency theory explains the internal auditing in safeguarding the interests of the stakeholders of a business. The internal auditor aligns the interests of the Agent with those of the principal and ensures that there is no information asymmetry and luck of transparency and accountability.

The previous studies done which are covered in the areas of internal audit, institutional characteristics, adherence to internal controls and firm performance clearly show a positive relationship. Institutional characteristics provide resources for the operations of internal audit; internal audit oversees internal controls to ensure achievement of firm objectives. Therefore, institutional characteristics and internal controls affect positively the association between internal audit and firm performance.

While, the association between the variables in this study have been empirically tested in other studies, their conceptualization, contextualization and methodology used are different from this study. The gaps identified therefore related to conceptualization and operationalization of the variables. The main studies done are summarised in Table 2.1.

Table 2.1: Summary of Empirical Literature and Knowledge Gaps

Author of Study	Focus of the Study	Methodology	Findings	Knowledge Gaps	Focus of Current Study
Johl, Kaur Johl, Subramaniam and Cooper (2013)	To test importance of internal audit on firm's financial reporting. Malaysia	Regression analysis	Internal audit influences financial reporting	The study aimed at bridging the gap in the internal audit literature in developing countries and in this case, Malaysia.	Use WSPs of Kenya as a context. Test the relationship among variables: internal audit, internal controls, institutional characteristics and performance of WSPs
Cohen and Sayag. (2010).	An empirical examination of the effectiveness and efficiency of internal audit determinants in Israeli companies. University of Haifa, Israel.	Survey of 108 organisations in Israel. Respondents for the study were chief internal auditors. Longitudinal study was done.	The results of the study revealed that top management support is crucial for effectiveness and efficiency of internal audit	The research focused on determinants of internal audit. The effect of audit, internal controls and organisational performance was overlooked The study was a longitudinal study. The study was done in Israel which is a developed economy	Internal audit, internal control, the institutional characteristics will be taken into account in this study on how they influence performance of WSP. The current study will be a correlational study. The current study will be carried out in Kenya
Serens and Bebedde (2006)	An investigation on the effect of the position of internal Auditor in the organisation chart to promote Internal auditors independence.	Survey of European companies, using multivariate regressions.	Internal audit has: Wide scope, free access to information, adequate resources, oversight on internal controls, consult the management, provide for good corporate company procedure to improve on firm performance.	Has not captured the relationship between internal audit and performance of WSPs in Kenya. Never related the internal audit, internal controls and institutional characteristics of WSPs to improve their performance.	The study addressed the conceptual methodological and conceptual gaps by considering the moderation role of institutional characteristics and intervening role of internal controls in the relationship between internal audit and performance of Kenyan WSPs.
Van Peaursen (2005)	Investigations on how internal auditors deal with the conflict of duo roles of assurance and consulting service provision to the management.	Survey of internal auditors in Israel hotels.	Tension is high in maintaining the dual roles of consulting and assurance which hinders the independence of internal auditor as well as the internal audit efficiency.	No consideration of the internal controls and institutional characteristics of WSPs in Kenya is given.	The focus of the study was on the association between internal audit and performance of WSPs of Kenya. The moderation and mediation roles of institutional characteristics of WSPs and internal controls respectively were considered.
Goodwin and	The factors in a firm that	Survey of 65	Internal audit was seen as a	Did not consider the role of	The study focuses on relationships

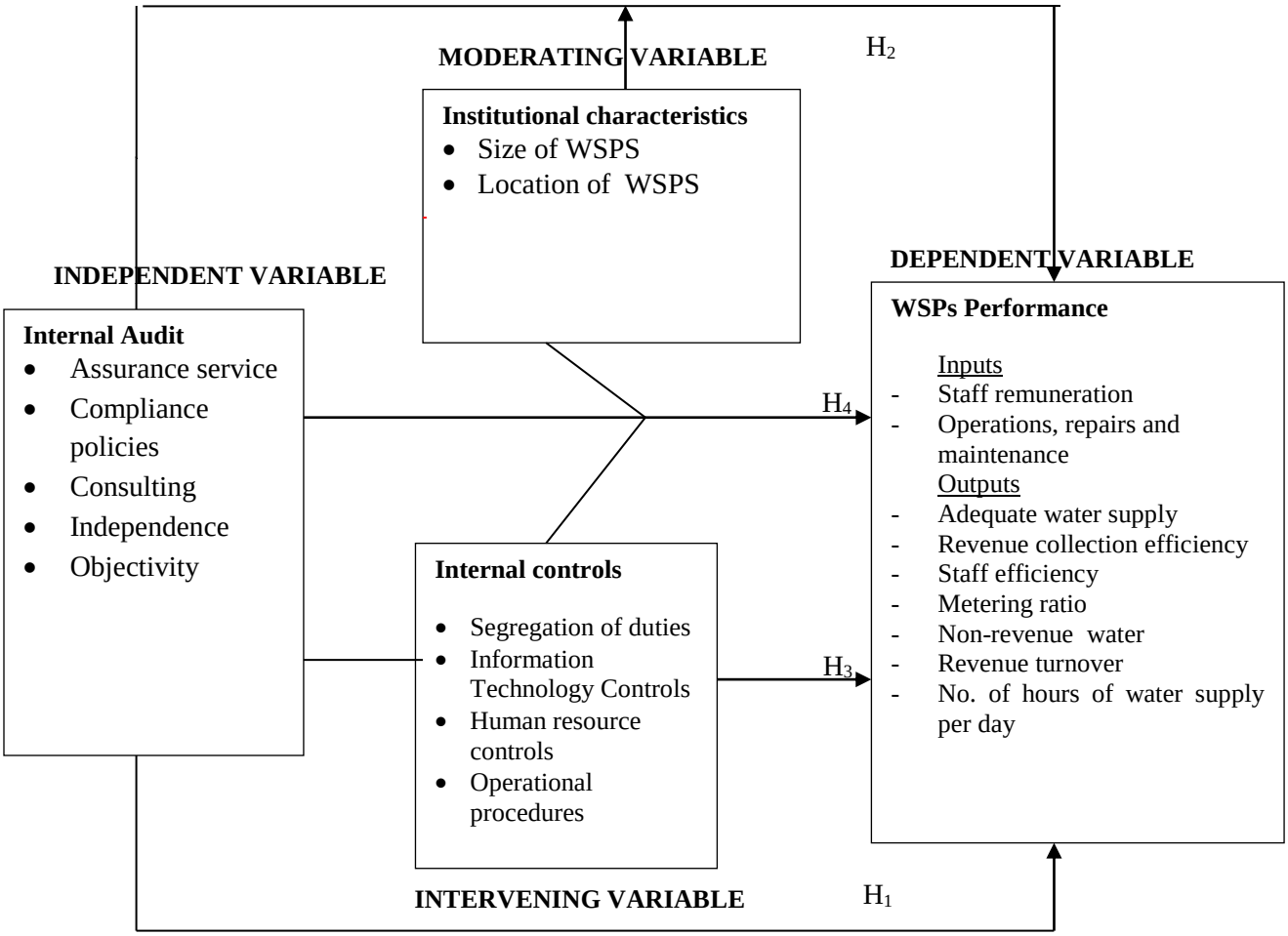
Author of Study	Focus of the Study	Methodology	Findings	Knowledge Gaps	Focus of Current Study
Yeo (2001)	affect independence and objectivity of internal auditor in Singapore.	companies' internal auditors and BAC members in Singapore	good training ground for managers by over 48% of the respondents while the balance expressed fears of loss of objectivity. The relationship between internal auditor and the BAC was found to influence the independence of internal audit.	internal audit to promote company and improve performance of firm performance. No indication of the association among the variables of the current study.	among internal audit, internal controls, and institutional characteristics to improve performance of WSPs in Kenya.
Dominic, and Nonna (2011)	The internal auditor: perceptions of internal audit activity, efficiency and analysis in Australia.	Cross sectional surveys	The study reveals that efficiency of internal audit is determined by the organisation structure, status and relationship of internal audit works, staffing and competencies.	How about other determinants of internal audit.	This study will focus on efficient internal audit, institutional characteristics, internal controls and organisational performance of WSPs
Badara, and Saidin (2013)	The determinants of internal audit efficiency: Audit committee moderating effect on internal audit efficiency at local government levels in Nigeria. Independent variable : Efficient internal control, risk management, audit experience, co-op between IA and auditors, performance measurement. moderator Audit committee Dependent variables Internal audit efficiency	Cross sectional surveys	The paper found that the variables should be validated empirically	The study is not local. Replicate the same in Kenya but base the efficiency of I A. On performance outcomes in WSPs in Kenya.	Consider the relationships of variables for achievement of WSPs performance

Author of Study	Focus of the Study	Methodology	Findings	Knowledge Gaps	Focus of Current Study
Badara (2014)	Moderating effect of audit committee on the relationship between internal audit effectiveness and internal audit experience in public sector using the perception of I A. Audit committee, Internal audit effectiveness Internal audit experience in Malaysia.	Cross sectional surveys	Audit practice has significant positive relationship with internal audit efficiency and efficient audit committee moderates that relationship	How about the other I.A. efficiency determinants and how about performance of the organisations in Kenya(WSPs)	The study will look at the relationship between internal audit and performance of water companies in Kenya mediated by institutional characteristics –size and location and intervened by internal controls.
Unegbu and Koda (2011).	Effectiveness of internal audit in improving public sector management in Nigeria.	cross sectional descriptive survey	The study found that internal audit can efficiently control fraud and deceitful activities in public sector and that public sector in Kano State have large number of Internal audit departments to function efficiently.	Study does not relate efficient internal audit to performance of the organisations. It does not capture the determinants of efficient I.A.	The influence of internal audit, on company performance will be captured. Also the effects of IC and audit board on performance will be considered
Aldamen, Duncan, Kelly, McNamara and Nagel (2012)	Whether company improves audit board, efficiency and firm performance during advance economic shock in south Africa.	Logit regression report	Performance was negatively related with number of audit board members. Managerial experience of audit board members and that of audit board chairman is positively related to firm performance	The study does not show the effects of internal audit, internal controls, institutional characteristics on performance of WSPs in Kenya	Focus on role of audit board to reinforce internal audit in order to oversee internal control. Focus on the role of institutional characteristics to moderate internal audit to improve performance of WSPs in Kenya
Badara and Saidin (2013).	Internal control systems	Case study of local government of Kano State of Nigeria	The paper concluded that efficient internal control system can control the efficiency of internal auditors at restricted level	Variables need to be tested using local study of WSPs in Kenya. The study should show the relationship between: internal controls, IA., and WSPs performance.	Duplicate the study in a local setup of WSPs in Kenya

Author of Study	Focus of the Study	Methodology	Findings	Knowledge Gaps	Focus of Current Study
Roma and Moburg (2003)	Nature of internal control which existed before WorldCom scandal	Case study	Unrealistic development targets. No separation of duties. Poor IT controls No oversight of internal control by internal audit.	There is no mention of roles of internal audit; no relationship among the three variables: internal audit, internal controls, institutional characteristics and firm performance.	The study will address the relationship between internal audit, internal controls; internal audit and firm characteristics; internal audit and firm performance in relation to WSPs in Kenya.
Theofanis et al (2011)	- Analysis of efficiency of IA in Greek hotel business. -Control its environmental - Risk assessment - Control activities Information of monitoring (IV) while I.A was the dependent variable in Malaysia.	Multi Case study	Results show efficient functioning of all elements of internal control and their decisive role in functioning and consequently success of Greek hotel business	Does not show the importance of Audit board and efficient IA in the performance of Greek hotels.	Localise the study as modified to reflect performance of WSPs in Kenya.
Eko and Hariyanto (2011)	The association between internal controls, internal audit and organisational loyalty with good corporate company.	Case study of 35 Local Authority units in Java province of Indonesia.	Internal audit, internal controls and organisational loyalty have a significant positive association with good corporate governance.	The study is in a foreign country; there is a contextual gap and it does not consider the moderating effect of institutional characteristics of companies.	The current focused on the task of internal audit and its relationship with performance of WSPs in Kenya. Internal controls intervene in the relationship while institutional characteristic of firm Size and Location of the WSPs play a moderation role to that relationship.

2.5 Conceptual Framework

From the literature reviewed there is adequate empirical and theoretical evidence that internal audit practices influence organisational performance. Nevertheless this cannot sufficiently account for variations in firm performance implying that there are other variables that mediate or moderate the association between internal audit and organisational efficiency. Such variables are institutional characteristics and internal controls. The study thus conceptualized a relationship to close knowledge gaps revealed by literature review of internal audit, institutional characteristics and internal controls influencing association between internal audit and firm performance. In the conceptual model presented in Figure 2.1, internal audit has an independent empirical role while performance has a dependent empirical role. The model further conceptualized internal controls as intervening between internal audit and performance with institutional characteristics moderating in the association between internal audit and performance.



Source: Researcher 2018

Figure 2.1: Conceptual Model

2.6 Study Hypotheses

From the study specific objectives and the sub variables in figure 2.1 above, the following were the hypotheses.

H_{o1}: The influence of internal audit on performance of water service providers in Kenya is not significant.

Ho_2: The moderating effect of institutional characteristics on the relationship between internal audit and performance of water service providers in Kenya is not significant.

Ho_{2a}: The moderating effect of water service provider size on the relationship between internal audit and performance of water service providers in Kenya is not significant.

H_{o2b}: The moderating effect of water service provider location on the relationship between internal audit and performance of water service providers in Kenya is not significant.

Ho_3: The intervening influence of internal controls on the relationship between internal audit and performance of water service providers in Kenya is not significant.

Ho_4: The joint effect of internal audit, internal controls and institutional characteristics on performance of water service providers is not significant.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter presents the method used in the research. The key highlights include study philosophy, research design and target population. Additionally, it looks into information collection methods, diagnostic tests, reliability and validity of data collection instruments together with operationalization of study variables.

3.2 Research Philosophy

A study philosophy refers to the procedure of systematic logical approach applying researcher's assumption about the environment. Study philosophy implies what, how, why and when study requires to be carried out (Carson, Grossman, Fisher & Shaw, 2007). There are various research philosophies which can be used. These are ontology, epistemology, realism, interpretivism and axiology, positivism and phenomenological research philosophies. The two most popular research philosophies are positivism and phenomenological.

Phenomenological studies focus on the immediate experience where researcher draw meaning by interpreting the experiences observed during inclusion in the phenomenon (Blom, 1977). This study paradigm is based on belief that study includes gathering large amounts of information through in-depth interviews to be able to uncover meanings and understanding of the matters under study. Phenomenological study enhances the understanding of matters under study. It advocates use of case studies that provide qualitative data that describes and explores the occurrence in depth and providing more solid results (Zikmund et al., 2010). Its opponents argue that phenomenological paradigm

is subjective, lucks sound theoretical foundation and does not adhere to strict scientific secret code required in solid scientific study

Positivism assumes that the viewer is independent of what is being seen and measurement has to be through goal criterion instead of being inferred subjectively (Mugenda & Mugenda, 2003). The positivistic approach is quantitative, goal, science oriented, experimental or traditional study philosophy. It precludes that the study is based on facts, neutral, objective, consistent, measures and gives valid results (Blumberg et al., 2005). Positivism assumes that the study is founded on valid facts, neutrality, impartiality, consistency, measurements and validity of results. It is also assumed that the approach is methodologically quantitative and value free (Zikmund et al., 2010). Positivism paradigm separates the person from the phenomenon being investigated, operating procedures and reductionism and hence its objectivity. As this study sought to test quantitative hypotheses, the researcher had to use positivistic study philosophy.

3.3 Research Design

Study design is the approach or plan, which is used to obtain participants, and how to gather data from them, in order to reach conclusions about a study question (Zikmund et al., 2010). A cross-sectional descriptive survey was used in this study. The design was appropriate since it included data collection at a point in time which relates to two or more variables in an effort to determine relationship between the variables. The study was also a correlation study conducted in the natural environment of the companies with no interference, manipulation or control of study variables by the researcher. A survey was suited for the study because WSPs in Kenya are few but spread to all parts of the country. Data collection and other relevant costs were minimal as most of the secondary

data was easily accessible from WASREB and most of the respondents were within reach at monthly WASPA meeting. Additionally, the survey study design was a very valuable means of assessing the opinions of all the respondents. The ecological factors were more or less similar and most of the WSPs begun operating at the same time after the enactment of Water Act, 2002. Cross-section survey was best for the study in order to capture data at the same point in time and not longitudinally. The study used a descriptive design as it used data to describe the matters existing and not disturbed by the investigator.

3.4 Population of the Study

Population of the study is the entire group of objects or elements that the researcher targets for the study. The target population usually has different attributes. Target population has all members with equal chance of being selected to the final sample that is required (Bryman, 2003). Kothari (2004) explains that target population is the total of elements about which conclusions are made.

The population of the study was 93 water service providers in Kenya which were regulated by WASREB as at 2015 (see appendix III). Population census was best for the research as the WSPs are few and although spread in the entire country Kenya, data collection costs were minimal as the respondents were within reach at WASPA monthly meetings and the secondary data was readily accessible from WASREB impact assessment reports. This context was chosen because there was a prevalent manifestation of the variables in this study as alluded to by the literature reviewed (WASREB, 2014).

3.5 Data Collection

The study used both primary and secondary data (Saunders, Lewis & Thornhill, 2007). Primary data was obtained by self-administered, structured questionnaire made up of closed ended questions prepared in line with the goals, theories upon which the study was anchored, empirical studies and corresponding hypotheses of the study. Study assistants were recruited and trained. The data collection instruments were delivered to the Chief Executive Officer who was considered as best placed to have the required information. According to Newbert (2008), one respondent who is knowledgeable on matters regarding a study is well placed to be a key informant. Secondary data on performance of WSPs was collected for the period 2011 to 2015 from WASREB impact assessment reports. An average of that data for the five years showing the performance of each WSP was computed and analyzed. The primary data collected on internal audit, institutional characteristics and internal controls was regressed on performance of the WSP to establish the linkages.

The questionnaire was divided into four sections. Section A was committed to gather data on profile of WSPs as well as profile of the respondents. Section B was for collecting data on internal audit; Section C on audit board, and finally section D collected data on internal controls. A likert scale ranging from (1) not at all (2) less extent (3) moderate extent (4) large extent (5) very large extent were used. This tool was successfully used by Irungu (2007) and Mutuku (2012) in their studies.

3.6 Validity and Reliability of Data Collection Instruments

Reliability of a study instrument measures the degree to which it yields consistent results on frequent trials (Mugenda & Mugenda, 2003). A research is reliable when different researchers at diverse time obtain the same results or when a diverse sample of the population is used to give similar results as given by another sample with the assumption that no changes have occurred to what is being measured (Tull & Hawkins, 1993; Cooper & Schindler, 2003). To ascertain the integrity and goodness of fit of the data collected on the study variables, reliability and validity tests were conducted.

To assurance the reliability of this study including interpretation of data correctly, selection of suitable methods for representation of qualitative and quantitative samples; collecting secondary quantitative data from WASREB; analyzing data according to appropriate statistical conventions and risk-adjusted performance method, Cronbach's Alpha coefficient was computed for all likert-type questions. The Alpha takes any value from zero (no internal consistency) to one (complete internal consistency) where 0.7 is the acceptable limit (Cronbach's& Shavelson, 2004). The regression models were also tested for multicollinearity to establish how well the regression assumptions were.

Validity is described as the point where the data analysed give the results of what actually happened (Mugenda & Mugenda, 2003). Validity shows the level to which the result of a study truthfully shows what actually occurred in an exact situation (Collis & Hussey, 2003). Validity may also be explained by means of the exactness and non-contradiction of own findings; and it is closely linked to the study instruments used (Lancaster, 2005). The validity of a study instrument more specifically refers to the degree to which it measures what it is supposed to measure (Leedy & Ormrod, 2005). In this study the

questionnaires were pre-tested with six respondents from a population of 93 WSPs who were asked to respond to the questions in the study instrument. The rationale of pre-testing exercise was to develop the data collection instrument (Sekaran, 1992). To develop on validity, the study instrument development used professional opinion. Furthermore, the instrument also adopted questions from previous studies that tested the internal control and internal audit practices of firms.

3.7 Diagnostic Tests

Diagnostic tests are pre estimation procedures that evaluate whether the assumptions of Ordinary Least Squares (OLS) regression analysis are held true. In particular, a strong linear relationship should not exist between any variables that are fitted jointly as regressors in a model (no multicollinearity), error terms should be linearly independent (no autocorrelation), the variance of the error terms should be constant and thus no heteroscedasticity, and the error terms must have normal distribution with a mean of zero and a constant variance. Osborne and Waters (2002), observes that where the assumption is not fulfilled, the results may fail be valid and may result in a type I or type II error, or wrong estimation of significance or effect size(s). It is therefore vital to pre-test for these assumptions for validity of their results. These assumptions and the particular tests that were used to test for each of them are discussed in detail below

3.7.1 Linearity Test

Multiple linear regressions require linear relationships between independent and dependent variables in order to give accurately estimate (Osborne & Waters, 2002). The results of non-linear relationship between dependent and independent variables leads to underestimation of the true relationship Absence of a linear relationship between

independent variables and the dependent variable leads to the results of the regression linear analysis to under-estimate the true relationship. Linearity of data occurs where the values of the outcome variable for each increase of a predictor variable lie along a straight line. Linearity is an important association between the dependent and the independent variables. In this study, linearity was tested using scatter plots.

3.7.2 Normality of Residuals Test

Statistical measures including correlation and regression analysis are based on the postulation that the residuals of model fitting should follow normal distribution. Normality of residuals test was done to measure the extent to which the residuals conformed to a normal distribution. This test is important because if the assumption of regression analysis is not met, it is not possible to draw correct and reliable conclusions from the reported results. To test the normality of residuals, the Shapiro-Wilk test of normality was used and conducted on SPSS 20 at the 5% level of significance. The Kolmogoroy-Smirnov statistics was also used to test the significance level of normality.

3.7.3 Test for Multicollinearity

Multicollinearity test assess if the predictor variables are highly related. Multicollinearity arises where there are strong relationships among the independent variables and the occurrence of r value greater than 0.80, tolerance value less than 0.10 and Variance Inflation factor (VIF) larger than 10 in the correlation matrix are the indicators of the multicollinearity existence (Field, 2009). Tolerance is a statistics used to indicate the way some sub-independent variables correlate with each other such that it may not be possible to measure the effects of a single predictor variable on dependent variable. It exists where two or more predictors in the model are highly correlated resulting to

unreliable and unstable estimates of regression coefficients. This causes strange results when attempt to study how well individual predictor variables constitute to an understanding of the dependent variable.

The outcome of Multicollinearity is increased standard error of estimate of the Betas, and therefore decreased efficiency, confusing and misleading results. Variance Inflation Factor (VIF) was used in this study to measure the level of correlation among variables and to estimate how much the variance of a coefficient is inflated because of linear dependence with other predictors. Variance inflation factors (VIF) assesses the extent of variance of the estimated regression coefficients relative to when these variables do not have a linear relationship. If any of the VIF are larger than 10 there is a likelihood of a problem with Multicollinearity and is harmful to the study as the effect of each sub-variable cannot be independently measured (Newbert, 2008).

3.7.4 Heteroscedasticity Test

Heteroscedasticity is a situation in which the variance of the residuals or error term varies across the data (Ghasemi & Zahediasl, 2012). Heteroscedasticity is a serious problem since it tends to inflate the standard errors, and thus increasing the likelihood of a type two errors, i.e. failing to reject a false hypothesis about a coefficient. In this study, Breusch-Pagan/Cook-Weisberg test for Heteroscedasticity was conducted on SPSS 20 at a 0.05 level of significance. The null hypothesis test assumes that the data is homoscedastic across entities, i.e. the error terms have a constant variance. If the null is rejected, the conclusion is that the data is heteroscedastic, indicating that the variance of error terms across entities is not constant. The rejection criterion is that the null of homoscedasticity is rejected if the p value ratio test is less than 5%.

3.8 Operationalization of Study Variables

Operationalization of study variables facilitates the reduction of abstract notions of constructs into observable characteristics that can be measured (Sekaran, 2009) and facilitates the testing of the relationships among the variables in the theoretical model. It defines variables into measurable factors. The study variables are: Internal audit, institutional characteristics –Size and Location, internal controls and performance of WSPs.

3.8.1 Operationalization of Internal Audit

Internal audit was divided into five sub variables: Assurance services to the management and other stakeholders; compliance with international standards of internal auditing and practice guides, consulting services to the management on operating risks and risk mitigation; independence of internal audit from the management and objectivity in reporting. The operationalization was based on the definition of internal audit by the IIA (1999).

Table 3.1: Operationalization of Internal Audit and Measurement

Variable	Operational Indicators	Operational Definition	Supporting Literature	Measurement	Questionnaire Items
Internal audit	- Assurance role.	Review of Financial statement and non-financial reports and telling the Truth. Ensuring no Conflict of interest. Confirmation to stakeholders all is well.	Reid &Ashelby, (2002) IIA, (1999) Unegbu, &Koda, (2011). Vanasco, (1996). Wallace, (1980).	Interval scale	1: (i-vi)
	- Compliance policies	Compliance framework Training program. Corporate oversight and guidance team. Employee awareness.	Paape, (2007).	Interval scale	2: (i-v)
	- Consulting management	Risk analysis and solution search. Advice, Training and audit recommendations. Facilitation of strengthening internal controls and operating systems.	Fraser and Henry, (2007)	Interval scale	3: (i-v)
	- Independence	Internal audit functionary reporting to Audit board and Administratively to the C.E.O. Structural placement of Chief auditor in firm organisational chart. Access to all firm information and other resources. Appointment , remuneration, analysis and firing by the board	Goodwin and Yeo, (2001), Caplan and Kirschenheiter, (2000).	Interval scale	4: (i-iii)
	- Objectivity	Job self-review Social pressure externally Personal interest Relationships Familiarity with stakeholders Disclosure of material facts	Goodwin,(2003) , Ahlawat and Lowe, (2004), Subramaniam,(2007)	Interval scale	5: (i-iii)

Source: Researcher, 2008

3.8.2 Operationalization of the Firm Institutional Characteristics

Institutional characteristics were operationalized based on Kemp et al. (2011) which include water service provider size and location. Size of WSP was defined by the number of water connections. Location of WSP refers to Rural/ Urban base of WSP defined by the geographic spread. The institutional characteristics whether internal or external do influence resources of the firm and hence the performance. Rural urban set up of WSP was operationalized according to WASREB classification of Rural/Urban WSPs which gives the percentage of water connections in rural areas and those in urban areas. Rural areas refer to regions outside big towns and municipalities which have low population density. Urban centres refer to cities, towns and municipalities which are densely populated.

Table 3.2: Operationalization of the Firm Size and Location

Variable	Operational Indicators	Operational Definition	Supporting Literature	Measurement	Questionnaire Items
Institutional characteristics	- Size	No of water connections. Area coverage of WSP Population served by WSP	Majumdar, 1997; Penrose, 1959 and Loderer, Neusser & Waelchli, 2009.	Ratio scale Ratio scale	4
	- Location.	Rural/Urban	WASREB, 2014	Ratio scale	5

Source: Researcher, 2008

3.8.3 Operationalization of Internal Controls

Internal controls were operationalized according to the definition of COSO (1992) and IIASB (2012) for internal controls. The internal controls activities include segregation of duties, information technology controls, human resource controls and operational controls.

Segregation of duties refers to the separation of duties and responsibilities to ensure a system with checks and balances. This ensures that the work of one individual is procedurally checked by another individual who makes it difficult to conceal frauds and enables detection and correction of errors. Separation of duties also provides a system of authorization sufficient for accounting control and the levels of approval of transactions clearly stated and observed. Policies and procedures are developed for prescribing the control procedure.

Information technology controls refer to making sure that IT systems are sufficient for providing key controls in areas of business that are automated. The IT security measures such as use of password, restricted access to software systems and data and electronic resources. IT system regulates access to resources by instituting security measures such as user IDs and passwords. Human resource system ensures that all worked hours are correctly reported, payroll properly computed and paid. An organisation uses an efficient automated time and staff attendance system that monitor clocking in and out. The system monitors staff allowances and captures any fraudulent activities.

Operational procedures and policies are put in place in terms of manuals such as finance and accounting manual, internal audit manual and human resource manual to guide employees on work methods and ensure internal controls are monitored as activities of business proceed. The operational manual ensures that all transactions posted were properly initiated and authorised. The organisation has a budgetary control mechanism that ensures all allocation is within budgets. The firm aligns its supply and demand to ensure no wastage of resources and the maintenance department ensures that corrective measures are taken within the required timelines.

Table 3.3: Internal Controls

Variable	operational Indicators	Operational Definition	Supporting Literature	Measurement	Questionnaire Items
Internal Controls	Segregation of duties	Policies for separation of duties Procedure manual Levels of authorization Custody of assets Recording and reporting of related transactions . Levels of approval.	Morgan,(1979) David (2009) COSO, (1992).	Interval scale	11 (i-iv)
	IT controls	Control of access to systems and data review of access codes. Segregation of IT tasks. Review of access logs		Interval scale	11 (2) (i-iii)
	Human resource controls	Computerized check in and out. Separation of tasks		Interval scale	11 (3) (i-iii)
	Operational procedures	Policies and financial procedure manual, IT manual Policies. Locks, gates stores systems. Human resource manual and policy framework Physical safeguards		Interval scale	11 (4) (i-iv)

Source: Researcher, 2008

3.8.4 Operationalization of Performance of Water Service Providers

Performance of water service providers is based on certain key performance indicators developed by international benchmarking network for Water and Sanitation Utilities (IBNET), Kemp et al.(2011) and utilized by Kingu and Dirk(2008) and WASREB (2014).The key performance indicators are: Water coverage, unaccounted for water, clean water, hours of water delivery, metered water connections out of total connections,

Revenue collection efficiency, Revenue sales, operating and maintenance cost (O&M), staff cost and staff efficiency.

Water service provision efficiency is measured using the population served with water as a percentage of the total population supposed to be served by the WSP. This indicates the number of people receiving clean adequate water in the WSPs area of jurisdiction and reflects revenue generation potential of a company. Water quality is measured by the tests conducted on water consumed. This has the effect of ensuring that water is treated and is fit for human consumption to enhance health status of individuals; Number of hours of water supply measures the cumulative hours that people are supplied with water in a 24 hour day. It establishes the adequacy of water service by a WSP; Non-revenue water refer to water produced by a WSP which does not translate to a sale .It is the water produced, treated and distributed but through inefficient meter reading and billing does not earn revenue and or water wasted through pipe bursts. It indicates the efficiency with which a water service provider is able to capture revenue earned from the water supplied;

Staff performance refers to the number of staff employed by water utility to serve 1000 connections of water**;** Staff efficiency ratio indicates the staff costs for a WSP as a percentage of total operating and maintenance cost; Revenue collection efficiency ratio measures the efficiency with which cash is collected from the debtors for a given period. Revenue collected from the amounts billed indicates the ability of the management to fund its operations and ensure financial sustainability; and Operations and maintenance ratio which indicates the extent that a Utility is capable to cover its own operating cost**.**

A water provider firm is anticipated to reach full cost coverage when it exceeds 150% O+M Cost. At this point, a utility is able to cater for its operating and maintenance costs, pay debts as well as extend water infrastructure. The key indicators explained above were developed by Kemp et al. (2011) and adopted by WASREB.

Table 3.4: Performance of Water Service Providers

Variable	Operationalizational Indicators	Operationalizational Definition	Supporting Literature	Measurement	Questionnaire Items
Performance indicators For WSPs	**Performance** - Water coverage,	Population served with water out of total population within area of WSPs coverage.	WASREB Performance Report no 10 (2016).	Ratio scale	Secondary data of performance indicators was used
	- Non –Revenue Water	Percentage of water produced that does not translate to revenue	Kemp et al (2011)	Ratio scale	
	-Number of hours of water supply.	No of hours consumers receive water service out of a 24-hour day	Kemp et al (2011)	Ratio scale	
	Metering ratio	Number of metered water connections out of total connections (%)	Kemp et al (2011)	Ratio scale	
	Revenue collection efficiency,	Percentage of debtor sales collected	Kemp et al (2011)	Ratio scale	
	- Revenue	Billing for water and sewer	Kemp et al (2011)	Ratio scale	
	-Staff efficiency	No of staff operating 1000 water meters	Kemp et al (2011)	Ratio scale	
	<u>Inputs</u> - Staff remuneration	Total staff remuneration	Kemp et al (2011)	Ratio scale	
	- Operations, repairs and maintenance	Total Operations, repairs and maintenance costs.	Kemp et al (2011)	Ratio scale	

Source: Author (2018)

3.9 Data Analysis

Data collected was cleaned and edited to ensure it was complete. It was then coded and entered into the statistical package for social sciences (SPSS) software version 21 and analysed through descriptive and inferential statistics adopting Sekaran (1992). Descriptive statistics that included: computation of the mean, standard deviation, correlation coefficient, kurtosis and skewness for likert scale variables in the questionnaire covered all the reaction variables and provided impetus for further analysis (Mugenda & Mugenda, 2003).

The measurement of the strength of relationship among study variables internal audit, institutional characteristics, internal controls and performance, the study used correlation analysis. The measurement helped establish the fitness of the data for regression analysis by assuring that there was statistically significant association between independent variable and dependent variable while still controlling the multicollinearity problem that occurs where independent variables are highly correlated (Cooper & Schindler, 2003). The analysis was fit since the data collected was interval or ratio scale which uses Pearson's moment correlation coefficient.

The Data Envelopment Analysis (DEA) model by Basso and Funari (2003) was used to establish the WSPs' efficiency. The model analyses efficiency of a set of decision-making units (the WSPs) that use some inputs and in return give some outputs. Efficiency equals output/input*100.

Linear regression models were used to evaluate the association between variables as hypothesized in the study at 5% level of significance. Pretesting of data was done using

multicollinearity tests, adjusted coefficient of determination (adjusted R^2), F-tests and t tests.

3.9.1 Preliminary Data Analysis Methods

Pearson's product moment correlation (r_{xy}), beta coefficients, and p values was computed to establish any linear association among the interval or ratio variables in the study as well as their nature and strength. This measure is usually symbolized by letter (r) and varies in range from -1 to +1, with 0 indicating no linear association. The square of correlation coefficient, the coefficient of determination (R^2) assesses the amount of variation in the dependent variable explained by the predictor variable. The closer the R^2 is to 1, the better the fit of the regression line to the actual data. The coefficient of determination gives information about goodness of fit in the model. It measures how well the regression line approximates the real data points. T-test was done to determine the individual significance of the association between independent and dependent variables. If p-value was less or equal to 0.05 (p-value $\leq$ 0.05) the null hypothesis was rejected otherwise it was not rejected. Additionally, a model equation of the variables relationship was computed to show the magnitude and direction of the relationships of the independent variable(s) and dependent variable.

The study adopted a computed composite index that ensured the outputs and inputs of the dependent variable were aggregated. To compute the composite index, Max-Min procedure was used. The original data was converted into indices ranging from 0 to 100 based on minimum values on WSPs in Kenya. DEA model Indices were defined in such a way that the higher the value of the aspect variables, the better the score. To deal with

distortions caused by outliers, lower and upper limits were set before converting the original data. The indicators were transformed logarithmically before applying the Max - Min procedure; reducing skewness and increasing comparability in WSPs. Transformation of indicator logarithmically helped reduce error term and ensure that Data fitted with the assumptions of linear regression.

The index numbers were obtained by deducting the minimum value in the distribution from each observed value in the series and expressing the results as a percentage of the difference between the Maximum and the Minimum values in the distribution. The model results were given by;

$$I = \frac{V - Min}{Max - Min} * 100 \quad \text{.....3.1}$$

Where:

V= the observed indicator value (after limits are imposed)

I =New index number representation.

The performance of WSPs was measured using DEA model specified by Charnes et al, (1978) on target population. With outputs/input relationship DEA Model inputs were: Personnel costs, Operating and Maintenance costs. The outputs were: water coverage, collection efficiency, staff efficiency, metering ratio, NRW, revenue turnover, hours of water supply per twenty four hour day. DEA Model gave data points for each of the WSPs values ranging from 0 to 1, given by:

$$Ei = \text{Maximise} \frac{\sum_{k=1}^{m} u_k y_{ki}}{\sum_{j=1}^{n} v_j x_{ji}} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.2$$

Subject to

$$\frac{\sum_{k=1}^{m} u_k y_{ki}}{\sum_{j=1}^{n} v_j x_{ji}} =< 1, \text{ for it}=1, \ldots N \text{ and } u_k \text{ and } v_j >= 0 \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.3$$

m = number of outputs for each WSP using n different inputs

n = number of inputs used by each WSP to produce m different outputs

y_{ki} = is the amount of the kth output for the ith WSP

x_{ji}= is the amount of the jth input used by the ith WSP

u_k = is the output weight

v_j = is the input weight

This study considered weaknesses of DEA model such as: failure to compute absolute efficiency but best performers in the population of the study. Out puts and inputs depend on the researcher; measurement errors and exclusion of variables affect the results. To address the weaknesses, the study considered all the water service providers in Kenya, relied on extensive literature review to choose the inputs and outputs and their measurement.

3.9.2 Empirical Model for Testing Hypothesis One: The Influence of Internal Audit on Efficiency of Water Service Providers in Kenya

The first objective was to establish the association between internal audit and performance of water service providers in Kenya. The dependent- independent variables relationship is modelled as:

P=$a + \beta_1 X_1 + \varepsilon$

Where: P= Performance

β_1 is beta coefficient

a= intercept

ε= Error term

X_1= internal audit (composite)

3.9.3 Empirical Model for Testing Hypothesis Two: Moderating Effect of Institutional Characteristic - Size

The second objective of the study was to establish the moderating effect of institutional characteristics size on performance of water service providers. The moderation model of dependent- independent and moderating variable is given as:

P = $a + \beta_{21} X_1 + \beta_{22} X_{2i} + \beta_{23} X_1 X_{2i} + \varepsilon$

Where: P= Performance

a= Constant (intercept)

$\beta_{21-}\beta_{23}$= beta coefficients

X_1 = Aggregated score for internal audit

X_{2i} = Institutional characteristics -Size

X_1X_{2i} represents the interaction term (Internal audit, Size respectively)

ε = Error term

3.9.4 Empirical Model for Testing Hypothesis Two: Moderating Effect of Institutional Characteristic - Location

The second objective of the study was also to establish the moderating effect of institutional characteristics location on performance of water service providers. The moderation model of dependent- independent and moderating variable is given as:

$P = a + \beta_{21}X_1 + \beta_{22}X_{2j} + \beta_{23}X_1X_{2j} + \varepsilon$

Where: P = Performance

a= Constant (intercept)

$\beta_{21-}\beta_{23}$= beta coefficients

X_1 = Aggregated score for internal audit

X_{2j} = Institutional characteristics -Location

X_1X_{2j} represents the interaction term (Internal audit, Location respectively)

ε = Error term

3.9.5 Empirical Model for Testing Hypothesis Three: Mediating Effects of Internal Controls in the Relationship between Internal Audit and Performance of Firms

The third objective of the study was to examine the impact of internal control on the association between internal audit and performance of Water Service Providers in Kenya. The Baron and Kenny (1986) four steps approach used to test the mediation effects of internal controls on the relationship between internal audit and firm performance.

For the first step of the mediation test, regression analysis was done to measure the association between internal audit (independent variable) and firm performance (dependent variable). The model is P=$a + \beta_1 X_1 + \varepsilon$

Where: P= Performance

β_1 is beta coefficient

a= intercept

ε= Error term

X_1= internal audit (composite)

In the second step, internal audit (independent variable) was regressed against internal controls (intervening variable) to assess the relationship between internal controls and internal audit while ignoring the dependent variable (Firm performance). The model is:

$X_3 = f(X_1)$

Where:X_3 = Aggregated score internal control attributes

$f(X_1)$ = Function of aggregated score internal audit attributes

In the third step of the mediation analysis, the relationship between firm performance (dependent variable), internal controls (intervening variable) while ignoring internal audit (independent variable) was derived. The model used is:

Step 3: $Y = f(X_3)$

Where: Y= performance

X_3= internal control attributes

In the fourth step of the mediation analysis, the relationship between firm efficiency, internal controls, and internal audit was derived. The prediction equation was given as:

$Y_j = f(X_3) = a + \beta_1 X_{31} + \beta_2 X_{32} + \beta_3 X_{33} + \beta_4 X_{34} + \varepsilon$

Where:

Y_j= Performance

X1= internal audit attributes

X_3= internal controls attributes

3.9.6 Empirical Model for Testing Hypothesis Four: The Joint Effect of Internal Audit, Internal Controls and Institutional Characteristics- Size and Location on Performance of Water Service Providers in Kenya

Stepwise regression analysis was used to assess the joint effects of: Internal audit, internal controls and institutional characteristics on performance of the water service providers in Kenya. The prediction equation was given as:

Performance = $a + \beta_{41}X_1 + \beta_{42}X_2 + \beta_{43}X_3 + \varepsilon$

Where:

a = intercept

Y = performance

β_{41}- β_{44} are beta coefficients

X_1 X_2 X_3 = Interaction term

X_1= Internal audit (Aggregated Variables)

X_2= Disaggregated institutional characteristics (WSP size and location)

X_3= Internal controls (Aggregated Variables)

ε = Error term.

A summary of study Objectives and analytical models is shown in Table 3.5 below:

Table 3.5: Goals, Hypothesis, Analytical Models and Interpretation

OBJECTIVES	HYPOTHESIS	ANALYTICAL MODEL	INTERPRETATION OF RESULTS
1) Establish the effect of internal audit on performance of public WSPs in Kenya.	**H_1:** Internal audit has no significant effect on performance of water service providers in Kenya	Regression analysis. P=$a + \beta_1 X_1 + \varepsilon$ Where: P= Performance β_1 is beta coefficient a= intercept ε= Error term X_1= internal audit(composite)	If calculated p – value is less than (0.05), then regression coefficient is significant. Therefore reject the hypothesis. I f t-value is greater than estimated t then fail to reject the null hypothesis.
2a) Examine the moderating effect of institutional characteristics - Size-association between internal audit and performance of WSPs in Kenya.	**H_2:** Institutional characteristic –size does not significantly moderating effect on the association between internal audit and performance of water service providers in Kenya.	Multivariate Regression analysis P = $a + \beta_{21} X_1 + \beta_{22} X_{2i} + \beta_{23} X_1 X_{2i} + \varepsilon$ Where: P= Performance a= Constant (intercept) β_{21}–β_{23}= beta coefficients X_1 = Aggregated score for internal audit X_{2i} = Institutional characteristics (Size) X_1X_{2i} represents the interaction term (Internal audit, Institutional characteristics respectively) **ε** = Error term	If P- value and at least one of the beta coefficients are insignificant with the interaction term added, then moderation has occurred. If P- value and the beta coefficients are significant with the interaction term added, then no moderation has occurred.
2b) examine the moderation effect of institutional characteristic-Location in the association between internal audit and performance of WSPs in Kenya.	H2b: Institutional characteristic – Location does not significantly moderating effect on the association between internal audit and performance of WSPs in Kenya.	Multivariate Regression analysis P = $a + \beta_{21} X_1 + \beta_{22} X_{2j} + \beta_{23} X_1 X_{2j} + \varepsilon$ Where: P= Performance a= Constant (intercept) β_{21}–β_{23}= beta coefficients X_1 = Aggregated score for internal audit X_{2j} = Institutional characteristics (Location) X_1X_{2j} represents the interaction term (Internal audit, Institutional characteristics respectively) **ε** = Error term	If P- value and at least one of the beta coefficients are insignificant with the interaction term added, then moderation has occurred. If P- value and the beta coefficients are significant with the interaction term added, then no moderation has occurred.
3) Examine the intervening influence of internal controls on the association between internal audit and performance of WSPs in Kenya.	**H_3:** The intervening influence of internal controls on the association between internal audit and performance of Water service providers in Kenya is not significant	Stepwise regression analysis to test the intervening effect of internal controls on the relationship between internal audit and performance of WSPs in Kenya Step 1:Y = f(X_1) is similar to test of H_1 Step 2:X_3 = f(X_1) Step 3: Y = f(X_3) Step 4: $Y = f(X_1, X_3)$ Y = performance X_1 = Aggregated score for internal audit X_3 = Aggregated score for internal controls	Systematically determine the intervening variables that explain the variance. If calculated p – value is less than alpha (0.05), then overall model is significant. An intervening association exists if Y is significant for both X1 and X3 but insignificant in the presence of X3 alone.
4)Ascertain the joint effect of institutional characteristics and internal controls on performance of public WSPs in Kenya.	**H_4:** The joint effect of internal audit, internal controls and institutional characteristics – size and location does not significantly influence performance of Water service providers in Kenya.	Stepwise regression analysis Performance=$a + \beta_{41} X_1 + \beta_{42} X_2 + \beta_{43} X_3 + \varepsilon$ a = intercept Y = performance β_{41}- β_{44} are beta coefficients X_1 X_2 X_3 = Interaction term X_1= Internal audit X_2= institutional characteristics(composite of size and location) X_3= internal controls. **ε** = Error term	If calculated p – value is less than alpha (0.05), then overall model is significant. Therefore fail to reject the hypothesis

Source: Author (2018)

CHAPTER FOUR

DESCRIPTIVE DATA ANALYSIS

4.1 Introduction

The chapter present the result of descriptive analysis of the study variables, data analysis, and empirical results therefrom, the interpretation of findings, and discussion of the study results. The chapter begins with pilot study 4.2, response rate in section 4.3, performance tests and diagnostic tests in section 4.4, descriptive statistics and frequencies of study variables in section 4.5, data envelopment analysis results 4.6, Pearson correlation analysis in section 4.7. Chapter summary is presented in section 4.8.

4.2 Pilot Test

A pilot study was done to guarantee that the questionnaire was valuable in gathering the relevant information. The pilot study was conducted using six WSPs which were not included in this survey. Initial questionnaire was reviewed by the supervisor before pre-testing to improve on validity and reliability of data collection tool. Pretest was then done on six managing directors of the pilot WSPs. The managing directors were asked to evaluate and comment on the questionnaire's completeness and comprehensiveness. To determines the consistency of data collection tool, Cronbach's alpha was computed for all likert type scale questions of the questionnaire. The applicable rule of Cronbach's alpha to measure internal consistency requires the alpha to be close to 1, for high reliability (Kothari, 2004).

To measure the performance of the data gathering tools, Cronbach's Alpha (α) was used which yielded an Alpha Coefficient of more than the minimum of 0.7, an indication that the instruments were reliable and are fit to test how strongly related a set of elements as a

group are. A value of alpha (close to 1) is high and is often used as evidence that the items measured an underlying (or latent) construct. A summary of reliability tests for all the study indicators namely; internal audit, institutional characteristics and internal controls were conducted and presented in tables 4.1 to 4.3 below.

4.2.1 Internal Audit

The researcher carried out a reliability test on internal audit and presented the results in the Table 4.1 below.

Table 4.1: Internal Audit Function Reliability

Variable	No of Items	Alpha (α)	Comment
Assurance Services	6	0.981	Reliable
Compliance Services	4	0.903	Reliable
Consulting Management	5	0.905	Reliable
Independence	2	0.802	Reliable
Objectivity	3	0.866	Reliable
Total	**20**	**0.967**	**Reliable**

Source: Author (2018)

All the internal audit variables met the Cronbach's Alpha Coefficient for assessing the internal consistency of the data collection instruments with alpha coefficients of above 0.7. Assurance services had the highest alpha of 0.981 while objectivity had the lowest at 0.866. The overall reliability of the instrument of 0.967 is greater than performance benchmark of alpha coefficient which should be 0.8 according to Bryman (2003).

4.2.2 Internal Controls

The study carried out a reliability test on the internal controls and obtained the results in table 4.2 below.

Table 4.2: Internal Controls Reliability Statistics

Variable	No of Items	Alpha (α)	Comment
Segregation of Duties	4	0.804	Reliable
IT Controls	3	0.902	Reliable
Human Resources	3	0.661	Not Reliable
Operational Controls	4	0.871	Reliable
Total	**14**	**0.905**	**Reliable**

Source: Researcher, (2018).

As shown in table 4.2 above, three of four sub- variables of internal controls met the Cronbach's Alpha Coefficient of assessing the internal consistency of the instruments with alpha coefficients of above 0.8 which showed overall reliability of the instrument to be 0.905 which is above the benchmark according to Bryman (2003) of alpha coefficients 0.8. Responses on Human resources aspect was at 0.661 which was below the threshold and thus not reliable. Thus the questionnaire on human resource had to be revised to improve on its content.

4.2.3 Reliability Statistics

The researcher aimed at presenting a summary of reliability statistics

Table 4.3: Summary of Reliability Statistics

Variable	No. Of items	Alpha (α)	Comment
Internal Audit practices	20	0.967	Reliable
Audit Committee practices	12	0.924	Reliable
Internal Controls	14	0.905	Reliable
Overall	**46**	**0.973**	**Reliable**

Source: Author (2018)

Table 4.3 above shows the summary of the reliability statistics. The overall reliability of the instrument was 0.973 which conforms to Cronbach's proposition that the reliability benchmark of Cronbach's Alpha coefficients should be above 0.7

4.3 Response Rate

A total of 87 questionnaires were circulated to the 87 WSPs that were the target population for the study. A total of 73 questionnaires were correctly filled and returned. This represented a response rate of 84%. According to Borg (2007) a response rate of 50 percent in a survey is adequate. The response rate of 84% was considered adequate as it was above the benchmark of 50 percent. This implied that the findings of this study were representative of the overall population. Survey studies by Odock (2016), Muindi (2011) and Mwangi (2014) attained 69.4%, 56% and 67% respectively that were considered adequate on the same premise of benchmarks.

4.4 Descriptive Analysis for Institutional Characteristics of Water Service Providers

The institutional characteristics of water service providers were operationalized based on WASREB (2014) to include WSP size and location. WSP size and location as indicated by the number of water connections and the percentage of water connections in urban or rural areas.

The size of the WSPs was sought using two indicators namely; number of water connections and annual budget.

4.4.1 Water Connections

The researcher sought to present the analysis of number of water connections.

Table 4.4: Number of Water Connections

	Frequency	Percent	Cumulative Percent
Less than 10,000	40	54.8	54.8
10,001 to 20,000	19	26.0	80.8
20,001 to 30,000	13	17.8	98.6
30,001 to 40,000	1	1.4	100.0
Total	**73**	**100.0**	

Source: Author (2018)

The results in Table 4.4 shows that most of the WSPs (55%) have less than 10,000 user units, 26% have connected between 10,001 and 20,000 user units, 17.8% have connected between 20,001 and 30,000 users and 1.4% have connected more than 40,000 users. This infers that most of the companies are small in size especially when viewed in terms of the number of client base (55%) and they generate inadequate revenues to establish and sustain effective internal audit and internal controls which are crucial for performance of firms.

4.4.2 Annual Budget

The researcher presented the responses on budget controlled by WSPs as shown in Table 4.5.

Table 4.5: Annual Budgets (in millions Kshs)

	Frequency	Percent	Cumulative Percent
less than 10 Million	8	11.0	11.0
Between 10 Million to 50 Million	22	30.1	41.1
Between 50 million to 100 Million	13	17.8	58.9
Between 100 Million to 150 Million	7	9.6	68.5
More than 150 Million	23	31.5	100.0
Total	**73**	**100.0**	

Source: Author (2018)

Table 4.5presents the distribution of the annual budget controlled by the WSPs. As indicated in the table 4.6, 31.5% of the WSPs have an annual budget exceeding shs. 150 Million, 30.1% of the WSPs have a budget of between shs. 10 million and 50 million, 17.8% of the WSPs have a budget of between shs. 50 million and 100 million, 11% have a budget of less than shs. 10 million and 9.6% of the WSPs have a budget of between shs. 100 million and 150 million. The results show that only 42% of the WSPs control enough funds that can sustain company operations and provide adequate resources for internal audit function. It also indicates that the remaining 58% of the WSPs may not have effective internal audit and thus result to outsourcing external internal audit . This means that 58% WSPs were likely to perform poorly due to weak internal controls and ineffective internal auditing.

Another firm characteristic was Location of the WSPs that was inferred from the percentage of water connections in urban and rural areas. From Table 4.7, it is inferred that most of the WSPs provide services to rural based clients..

4.4.3 Water Connection

A study on water conections was conducted and the results were presented in Table 4.6.

Table 4.6: Percentage of WSPs Water Connections Located in Rural Areas

	Frequency	Percent	Cumulative Percent
Less than 25%	14	19.2	19.2
25% to 50%	13	17.8	37.0
50% to 75%	14	19.2	56.2
75% to 100%	32	43.8	100.0
Total	**73**	**100.0**	

Source: Author (2018)

The results in Table 4.6 shows that, a majority (43.8%) of the interviewees indicated that 75% to 100% of their clients are in rural areas, 19.2% have less than 25% and between 50 and 75% of their clients in rural areas repectively and 17.8% have between 25% to 50% of their clients in rural areas. The WSPs in the rural areas are expected to have low revenue sales as a majority of the consumers are low income earners who may not afford to pay for the water services. This results to financial instability and inability to fund internal audit as well as establishment of effective internal controls leading to poor performance.

4.5 Descriptive Analysis for Internal Audit

The researcher sought to carry out three types of analysis on internal audit.

4.5.1 Oversighting Internal Audit

The table below depicts descriptive statistics on the variable about oversighting internal audit.

Table 4.7: Descriptive Statistics on Oversighting Internal Audit

	N	Mean	Std. Deviation	Coefficient of Variation
1. The policies and practices developed by the internal audit for risk management are approved by the audit board	73	3.758	1.313	35%
2. The audit board approves audit program before its forwarded to the board for implementation	73	3.773	1.310	35%
3. The audit boards review performance of internal auditors	73	3.652	1.295	35%
4. The auditboard meets with internal auditors and management on a regular basis to discuss issues of concern that may arise	73	3.485	1.438	41%
5. The audit board establishes procedures for accepting confidential information like whistle blowing	73	2.742	1.481	54%
6. Audit committee reports to the board of Directors regularly	73	4.283	1.133	26%

Source: Author (2018)

The results in table 4.7, indicates that internal audit is oversighted by other board organs to a large extent. Regular reports to the board by internal audit (Mean = 4.283, SD = 1.133), Audit committee approval of audit report before it is forwarded to the board (Mean = 3.773, SD = 1.310) and Audit board reviews performance of internal auditors (Mean = 3.652, SD = 1.259). On procedures established by the board, the variation was high above the average (C.V=54%) while there was a less variability on audit committee reporting to the board regularly at 26%.

4.5.2 Provision of Resources to Internal Audit Function

The researcher computed descriptive statistics on the aspect of provision of resources to the internal audit function. Table 4.8 below shows the results of this analysis.

Table 4.8: Descriptive Statistics on Provision of Resources

	N	Mean	Std. Deviation	Coefficient of Variation
1. The audit board approves the budget of internal audit department	73	3.576	1.313	37%
2. The audit board determines compensation and benefits of chief internal auditor	73	2.813	1.271	45%
3. The audit board ensures the internal audit function has audit resources	73	3.554	1.118	31%

Source: Author (2018)

As indicated by the likert scale item responses in Table 4.8, the respondents indicate that to a moderate extent, the audit board determines compensation and benefits of the chief internal auditor (Mean = 2.813, SD = 1.271). Two likert item responses show that to a large extent, audit board approves budget of internal audit department (Mean = 3.576, SD = 1.313) and the audit board ensures that the internal audit function has resources (Mean = 3.554, SD = 1.118). On determining compensation and benefits of chief internal auditor

by audit board the variation stood at 45% while audit board ensuring the internal audit function has audit resources was at 31%.

4.5.3 Competency of Chief Internal Auditor

The study envisaged to establish the competency of chief internal auditor and got the results presented in Table 4.9

Table 4.9: Descriptive Statistics on Competency of Chief Internal Auditor

	N	Mean	Std. Deviation	Coefficient of Variation
1. The audit board is responsible for making sure competent chief internal auditor is hired	73	3.631	1.257	37%
2. The audit board monitors training needs of audit staff	73	3.159	1.221	39%
3. The audit board assesss the performance of the chief internal auditor regularly	73	3.516	1.297	37%

Source: Author (2018)

As presented in table 4.9 above, the respondents indicate that to a moderate extent, the audit board monitors training needs of audit staff (Mean = 3.159, SD = 1.221) and to a large extent, the audit board ensures competence in hiring the chief internal auditor (Mean = 3.631, SD = 1.257) and audit board assess performance of chief internal auditor regularly (Mean = 3.516, SD = 1.297). On Competency of Chief Internal Auditor the range on variability was between 37% and 39%, hence the audit board monitoring training needs of audit staff had the highest variability.

4.6 Individual Sub- Variable Descriptive Statistics

The study collected primary data on specific internal audit attributes and internal control mechanisms among the identified water service providers. These internal audit attributes

included; assurance services, compliance policies, consulting management, independence and objectivity. The internal control mechanisms included; segregation of duties, IT controls, human resources controls and operating procedures. The descriptive statistics of the responses to the specific questions based on a survey of 93 WSPS with N being 73 WSPs are indicated in tables 4.10 to 4.22 below.

4.6.1 Assurance Services

The researcher carried a study on assurance services and obtained the results below.

Table 4.10: Descriptive Statistics on Assurance Services

	N	Mean	Std. Deviation	Coefficient of Variation
1. Internal audit is keen to provide comprehensive information onoperations of the company	73	3.569	1.104	31%
2. Audit reports are accepted by management without further querries	73	3.258	.991	30%
3. Audit report contain status of previous reports	73	3.413	1.303	38%
4. The internal auditor review performance of internal control and gives recommendations	73	3.694	1.125	30%
5. Internal audit analyses and evaluates internal control mechanisms used to detect and deter fraud, evaluate the company's management of risk of fraud, requiring to be included in fraud investigations	73	3.794	1.180	31%
6. Internal auditor discusses reasonableness of audit reports with management	73	3.594	1.205	34%

Source: Author (2018)

Four likert item responses by the respondents (CEO) on assurance services all rated to a large extent. As presented in Table 4.10 above, Assisting management with analysis of internal controls for fraud detection (Mean = 3.794, SD = 1.180), review of performance of internal audit operations (Mean = 3.694, SD = 1.125), discussion of internal audit

reports with management (Mean = 3.594, SD = 1.205) and provision of comprehensive information on organisational procedures (Mean = 3.569, SD = 1.104) are internal audit practices existent to a large extent in the companies. Two of the likert responses indicate that provision of previous status reports (Mean = 3.413, SD = 1.303) and management acceptance of reports without further queries (Mean = 3.258, SD = 0.991) are experienced by the respondents to a moderate extent. On assurance services the item on whether audit reports contain status of previous reports had the highest variability at 38%.

4.6.2 Compliance to Policies

Descriptive analysis on compliance policies was conducted and yielded the following results.

Table 4.11: Descriptive Statistics on Compliance Policies

		N	Mean	Std. Deviation	Coefficients of Variation
1	The chief internal auditor is keen on safeguarding adherence to policies and procedures	73	3.641	1.213	33%
2	Audit plan is regularly reviewed to ensure compliance with IIA standards of reporting	73	3.286	1.224	37%
3	The chief internal auditor continuously review the operating procedures and gives recommendations	73	3.500	1.234	35%
4	The internal audit assesss the performance of policy implementation in the company	73	3.460	1.105	32%

Source: Author (2018)

As presented in Table 4.11, two likert item responses indicated that the chief internal auditor safeguards adherence to policies and procedures (Mean = 3.641, SD = 1.213) and

continuously reviews operating procedures and gives recommendations (Mean = 3.500, SD = 1.234) to a large extent.

Two likert item responses indicate that to a moderate extent, the internal audit assesses performance of policy implementation in the company (Mean = 3.460, SD = 1.105) and audit plan is regularly reviewed to ensure compliance with international reporting standards (Mean = 3.286, SD = 1.224). On compliance policies the item that, audit plan is regularly reviewed to ensure compliance with IIA standards of reporting, had the highest variability.

4.6.3 Consulting Management

The researcher conducted a study on the impact of consulting management on matters pertaining internal audit.

Table 4.12: Descriptive Statistics on Consulting Management

		N	Mean	Std. Deviation	**Coefficients of Variation**
1	The chief internal auditor is constantly consulted on best practices of financial management	73	3.031	1.168	39%
2	The chief internal auditor is proactive in initiating measures that curb frauds,and reduce potential waste in resources	73	3.344	1.185	35%
3	The chief internal auditor provides insights that focus on areas of enhanced performance	73	3.672	1.222	33%
4	The management implement proactively internal auditors recommendations	73	3.594	1.065	30%
5	The management constantly consults internal auditors on risk management strategies	73	3.172	1.203	38%

Source: Author (2018)

Table 4.12 indicates that to a large extent, internal audit provides insights that focus on areas of performance (Mean = 3.672, SD= 1.222) and management proactively implements internal auditors recommendations (Mean = 3.594, SD= 1.065). From three likert item responses in the table above, internal audit to a moderate extent proactively initiates measures to curb frauds and reduce potential waste in resources (Mean = 3.344, SD = 1.185), are constantly consulted by management on risk management strategies (Mean = 3.172, SD = 1.203) and are constantly consulted on best practices of financial management (Mean = 3.031, SD = 1.168). The item on whether the chief internal auditor constantly consults on best practices of financial management had the highest variabilty at 39% while on whether management implement proactive internal audit recommendations had the smallest variabilty of 30%.

4.6.4 Independence

The study aimed at establishing the independence of internal auditor.

Table 4.13: Descriptive Statistics on Independence

	N	Mean	Std. Deviation	Coefficients of Variation
1 The head of internal audit reports functionally to the audit boardand administratively to the chief executive officer	73	4.333	1.188	27%
2 The boards through the audit board approves the internal audit budget	73	3.742	1.267	34%
3 The boards through the audit board approves the budget plan and reviews audit plan	73	3.594	1.306	36%
4 The internal auditor determines the scope of auditing, and communicating results independently	73	3.862	1.171	30%
5 Audit board reviews the annual progress of the audit activities in relation to the audit plan	73	3.466	1.341	39%
6 Internal audit function has been funded in away that promotes objectivity and consistency in quality of its delivery	73	3.463	1.206	35%

Source: Author (2018)

Table 4.13 presents four likert responses where respondents indicate to a large extent that the head of internal audit reports functionally to audit board committee and administratively to the CEO (Mean = 4.333, SD = 1.188), the internal auditor is free from interference in scoping wok and communicating results (Mean = 3.862, SD = 1.171), the board through the audit board approves the internal audit budget (Mean = 3.742, SD = 1.267) and the boards through the audit board approves resource plan and reviews audit plans (Mean = 3.594, SD = 1.306). The respondents indicate that to a moderate extent, audit board reviews annual progress of audit activities in relation to audit plan (Mean = 3.466, SD = 1.341) and internal audit function has been funded in a way that promotes objectivity and consistency (Mean = 3.463, SD = 1.206). On Independence, on whether audit board reviews the annual progress of the audit activities in relation to the audit plan had the highest variability of 39% while on assessing whether the head of internal audit reports functionally to the audit board committee and administratively to the CEO had smallest variability of 30%.

4.6.5 Objectivity

The researcher sought to find out whether there is objectivity in practice by the internal auditor.

Table 4.14: Descriptive Statistics on Objectivity

	N	Mean	Std. Deviation	Coefficients of Variation
1.The renumeration and terms of service for chief internal auditor are approved by the audit board	73	3.215	1.484	46%
2.The internal auditor is prohibited from auditing works which he has executed	73	3.322	1.559	47%
3.The chief internal auditor has direct access to all firm information without restrictions	73	4.062	1.309	32%
4.The chief internal auditor cannot review the operations conducted by a relative	73	3.422	1.434	42%

Source: Author (2018)

As presented in Table 4.14, the interviewees indicated that to a large extent, the internal auditor has direct access to all firm information without restrictions (Mean = 4.062, SD = 1.309). The respondents indicate that to amoderate extent, chief internal auditor can not review the procedures conducted by a relative (Mean = 3.422, SD = 1.434), internal auditor is prohibited from auditing works he has executed (Mean = 3.322, SD = 1.559) and renumeration and terms of service for chief internal auditor are approved by the audit committe (Mean = 3.215, SD = 1.484). A high variability 47% was noted on whether the internal auditor is prohibited from auditing works which he has executed a low variability of 32% was noted on whether the chief internal auditor has direct access to all firm information without restrictions.

4.6.6 Segregation of Duties

The researcher sought to find out how internal audit duties are segregated and obtained the results in Table 4.15.

Table 4.15: Descriptive Statistics on Segregation of Duties

	N	Mean	Std. Deviation	Coefficients of Variation
1. Segregation of responsibilities is done to ensure the system of controls	73	4.171	.884	21%
2. A system of authorisation adequately provide reasonable accounting control	73	4.029	.900	22%
3. Policies and procedures are developed for prescribing the control procedure to reflect changes in the business and control its environmental	73	3.814	.982	26%
4. No single individuals have control over two or more phases of a transaction or procedure	73	3.623	.987	27%

Source: Researcher, (2018).

As presented in table 4.15, four likert item responses indicate that to a large extent, functional responsibilities are segregated in the company (Mean = 4.171, SD = 0.884), authorization systems assist with accounting control (Mean = 4.029, SD = 0.900), there are policies and procedures for controls in the company (Mean = 3.814, SD = 0.982) and there are no individuals with control over two or multiple phases of transactions or procedures (Mean = 3.623, SD = 0.987). No single individuals have control over two or more phases of a transaction or procedure. The highest variabilty of 27% on whether individuals have control over two or more phases of a transaction or procedure was found while the lowest was at 21% on whether Segregation of responsibilities is done to create a system of checks and balances.

4.6.7 Information Technology Controls

The researcher sought to carry out a study to establish whether there are controls in information technology.

Table 4.16: Descriptive Statistics on IT Controls

	N	Mean	Std. Deviation	Coefficients of Variation
1. The IT systems are sufficient in providing key controls in area of business that are automated	73	3.029	1.142	38%
2. The IT systems security measures protect access to electronic resources	73	3.200	1.223	38%
3. The IT systems regulate access using security measures such as user IDs and passwords	73	3.433	1.258	37%

Source: Author (2018)

The three likert item responses indicate that to a moderate extent there are controls in the companies as presented in Table 4.16. IT systems regulate access to resources by applying security measures (Mean = 3.433, SD = 1.258), IT systems protect access to

electronic resources (Mean = 3.200, SD = 1.223) and IT systems provide controls in automated business areas (Mean = 3.029, SD = 1.142). The highest variability was at 38% on IT systems are providing sufficient key controls in area of business that are automated and on security measures while 37% variability was on whether IT systems regulate access using security measures such as user IDs and passwords

4.6.8 Human Resources Controls

A study on human research controls was conducted and Table 4.17 shows the results.

Table 4.17: Descriptive Statistics on Human Resource Controls

	N	Mean	Std. Deviation	Coefficients of Variation
1. The organisation has an efficient automated time and attendance system that monitor staff clocking in and out	73	1.761	1.280	73%
2. The systems ensure that all worked hours are reported and that the payroll is correctly calculated and paid	73	2.632	1.269	48%
3. The human resource management systems monitors staff allowances and captures any fraudulent activities	73	3.136	1.149	37%

Source: Author (2018)

As indicated in Table 4.17, the respondents indicated that to a moderate extent, human resource systems monitor staff allowances and captures fraudulent activities (Mean = 3.136, SD = 1.149) and Human resource system ensures that all worked hours are accurately reported, payroll correctly calculated and paid (Mean = 2.632, SD = 1.269) and to a small extent, company has automated time and attendance system that monitors staff clocking in an out (Mean = 1.761, SD = 1.280). A very high variability of 73% was

indicated on the organisation efficient automated time and attendance system while a low variability was noted at 37% on human resource management systems.

4.6.9 Operational Procedures Controls

The researcher carried out a study on operational procedures controls

Table 4.18: Descriptive Statistics on Operational Procedures

	N	Mean	Std. Deviation	Coefficients of Variation
1. The system verifies that all transactions posted were properly initiated and authorised	73	3.508	1.364	39%
2. The organisation has budgetary control mechanisms that ensure all allocations are within the budgets	73	3.606	1.079	30%
3. The organisation aligns its supply and demand to ensure no wastage of resources	73	3.618	1.079	30%
4. The maintenance internal audit department ensures that corrective measures are taken within the required timelines	73	3.309	1.055	32%

Source: Author (2018)

Three likert item response indicated that to a great extent, the company aligns its supply to the demand to avoid waste of resources (Mean = 3.618, SD = 1.079), the company has budgetary control mechanisms (Mean = 3.606, SD = 1.079) and the system verifies that all posted transactions are properly initiated and authorized (Mean =3.508, SD = 1.364). To a moderate extent, maintenance department ensures that corrective measures are taken within required timelines (Mean = 3.309, SD = 1.055). There was a high variabilty of 39% on the item whether system verifies that all transactions posted were properly

initiated and authorised while there was a tie of 30% on budgetary control mechanisms and alignment supply and demand.

4.6.10 Performance of Water Service Providers

The researcher examined the performance of WSPs in Kenya using DEA model with output/input relationship. Data envelop analysis which is a non-parametric technique is assigned a performance score ranging from 0 to 1 to the decision making units.

Table 4.19: Performance of the WSPs in Kenya

Range/Statistic	Frequency	Value
0.0 to 0.3	4	5.5%
0.31 to 0.6	12	16.4%
0.61 to 0.9	41	56.2%
0.91 and above	16	21.9%
Total number of WSPs	73	100%
Arithmetic Mean		0.7259
Standard Deviation		0.2069
Maximum		1.0000
Minimum		0.1493

Source: Author (2018)

Table 4.19 shows the outputs used as: Water coverage, Revenue collection performance; Staff performance; Metering ratio; Non-Revenue Water; Revenue turnover; and Number of hours of Water supply while the Inputs used were Personnel costs, Operating and Maintenance costs.

The observation is shown in Table 4.20 above. Fifty six percent (56%) of the WSPs had performance of between .61 and 0.9 which is above average. Sixteen percent of the WSPs have between .31 and .60 performance which is moderate. The highest performance was 1.0 and the lowest was 0.15. The DEA performance is captured in Appendix V.

4.7 Summary of Descriptive Statistics on Study Variables

The researcher sought to conduct a descriptive analysis on internal audit, internal controls and institutional characteristics. The Table 4.20 below shows the summary of combined results.

Table 4.20: Summary of Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Internal Audit									
Firm performance	73	.15	1.00	.726	.207	-.702	.281	.000	.555
Assurance services	73	1.00	5.00	3.575	1.058	-1.086	.281	.494	.555
Compliance policies	73	1.00	5.00	3.312	1.131	-.798	.281	-.073	.555
Consulting management	73	1.00	5.00	3.266	1.026	-.663	.281	-.022	.555
Independence	73	1.00	5.00	3.466	1.192	-.978	.281	-.235	.555
Objectivity	73	1.00	5.00	3.445	1.233	-.634	.281	-.508	.555
Internal Controls									
Segregation of duties	73	1.00	5.00	3.966	.709	-.939	.281	.602	.555
IT Controls	73	1.00	5.00	3.215	1.084	-.677	.281	-.284	.555
Human resources Controls	73	1.00	5.00	2.484	.986	.850	.281	.546	.555
Operational Procedures	73	1.00	5.00	4.137	.909	-1.591	.281	2.287	.555
Institutional characteristics									
Size of WSPs	73	1.00	4.00	3.316	1.133	-.443	.281	.087	.555
Location of WSPs	73	1.00	2.00	1.356	.482	.613	.281	-1.670	.555
Valid N (listwise)	73								

Source: Author (2018)

Table 4.20 shows a summarized descriptive statistics of all the study variables. Firm performance which is the dependent variable has a mean of 0.726 with the minimum performance of 0.015 and the maximum performance of 1. Standard deviation of the distribution is 0.207. This implies that on average most of the companies utilize the inputs to improve the performance levels. Few of the companies exhibit lower levels of performance. Firm performance data is negatively skewed (-0.702) and is not peaked as indicated by a Kurtosis of 0. The aspects of internal audit as the independent variable are presented. The responses on internal audit aspects range from none existent (1.00) to existence to a large extent (5.00). Assurance services exist in the companies to a

moderate extent (mean = 3.575, SD = 1.058). Likert responses on assurance services are skewed to the left (-1.086) and are moderately peaked (Kurtosis = 0.494). Compliance policies exist in the companies to a moderate extent (mean = 3.312, SD = 1.131) and the responses are skewed to the left (-0.798) but has a flat peak (Kurtosis = -0.073). Consulting management practices exist in the companies to a moderate extent (mean = 3.226, SD = 1.026). The Likert responses on consulting management are skewed to the left (-0.663) and has a flat peak (Kurtosis = -0.022). Independence exist in the WSPs on a moderate extent (mean = 3.466, SD = 1.192) and the responses are skewed to the left (-0.978) and has a flat peak (Kurtosis = -0.235). Objectivity exist to a moderate extent (mean = 3.445, SD = 1.233) and the responses are skewed to the left (-0.634) but has a flat peak (Kurtosis = -0.508).

The responses on operational procedures range from no extent (1) to very large extent (5). On average, operational procedures exist in the companies to a large extent (mean = 4.137, SD = 0.909). Responses on operational procedures are skewed to the left (-1.591) and the data exhibits high peakedness (Kurtosis = 2.287). Segregation of duties exist to a moderate extent (mean = 3.996, SD = 0.909). Responses on operational procedures are skewed to the left (-0.939) and the data exhibits peakedness (Kurtosis = 0.602). IT controls exist to a moderate extent (mean = 3.215, SD = 1.084). Responses on IT controls are skewed to the left (-0.677) and the data does not exhibit peakedness (Kurtosis = -0.284). Human resource control practices exist to a low extent (mean = 2.484, SD = 0.986). The data is skewed to the right (0.850) and it exhibits peakedness (Kurtosis = 0.546). On average, the WSPs have Size between 30,000 and 40,000 water connections (mean = 3.316, SD = 1.133). The data on Size is skewed to the left (-0.443) as the data

does not exhibit peakedness (Kurtosis = 0.087). The data on the WSPs location is skewed to the right (0.613) and the data does not exhibit peakedness

4.8 Test for Normality

Parametric statistics, presume that the data being tested is normally distributed and thus the use of the mean as a measure of central tendency (Zikmund et al., 2010)**.** Most of the statistical tests including correlation, regression, t-tests are based on the postulation that the data is normally distributed (Ghasemi & Zahediasl, 2012). However, data sets can often be skewed due to various reasons hence, the need to test data for assumption of normality. Normality tests are necessary for the researcher to arrive at correct and reliable conclusions (Ghasemi & Zahediasl, 2012). The main tests for the evaluating the normality of data is the Shapiro-Wilk and Kolmogorov-Smirnov tests. Both methods were used to test the data in this study.

4.8.1 Tests for Normality of Residuals

The study used the Shapiro-Wilk test to test for normality of the error terms. The outcomes are shown in Table 4.21**.**

Table 4.21: Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Firm performance	.218	73	.000	.788	73	.000
Size of WSPs	.126	73	.006	.970	73	.004
Location of WSPs	.414	73	.000	.606	73	.000
Internal audit	.161	73	.000	.875	73	.000
Internal controls	.151	73	.000	.932	73	.001
a. Lilliefors Significance Correction						

Source: Author (2018)

As presented in Table 4.21, the Kolmogorov-Smirnov statistics for firm performance (0.218), Size of WSPs (0.126), Location of WSPs (0.414), internal audit (0.161) and internal controls (0.151) are all statistically significant. Shapiro Wilk statistics for firm performance (0.788), Location of WSPs (0.606), internal audit (0.875), internal controls (0.932), and Size of WSPs (0.970) are also statistically significant.

4.8.2 Tests for Multicollinearity

Multicollinearity test results show whether there is resemblance in terms of association among the independent variables in a model. Similarities between the independent variables result to a very strong correlation, Newbert (2008) and Field (2009). VIF (Variance inflation factor) of multicollinearity test is used in decision making. If VIF lies between 1 and 10, there is no indication of excessive multicollinearity. If VIF is <1 or >10, then there is extreme multicollinearity. The pertinent results are presented on Table 4.22.

Table 4.22: Multicollinearity Coefficients

Sub-Variable		**Collinearity Statistics**	
		Tolerance	**VIF**
	Assurance services	.217	4.600
	Compliance policies	.197	5.075
	Consulting management	.180	5.553
	Independence	.370	2.703
	Objectivity	.251	3.990
	IT Controls	.367	2.726
	Segregation of duties	.452	2.213
	Human resources	.488	2.049
	operational procedures	.511	1.957
	Size of WSPs	.499	2.003
	Location of WSPs	.747	1.340

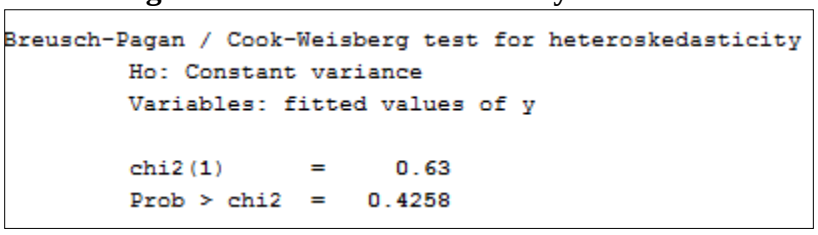
Source: Author (2018)

The results in Table 4.22 indicate that, all VIF are less than 10 thus indicating that there is no excess multicollinearity**.**

4.8.4 Tests for Heteroscedasticity

The data was tested for heteroscedasticity using the Breusch Pagan test. The results of this test are shown in figure 4.1 below.

Figure 4.1: Breusch Pagan Test for Heteroscedasticity



Source: Author (2018)

As evident above, the results for the Breusch pagan test are not statistically significant. As such, the null hypothesis of constant variance (Homoscedasticity) shouldn't be rejected because the chi squared is greater than .05, and the conclusion is that the variance of the error terms is constant. This implies that the problem of heteroscedasticity wasn't present in the data.

4.9 Correlation Analysis

The Pearson product-moment correlation coefficient is a measure of the strength of a linear relationship between two variables and is denoted by *r* and for this study the correlation analysis of variables is shown in table 4.23 below.

Table 4.23: Pearsons Correlation Coefficients

	Firm performance	Internal Audit Practices	Internal Controls	Location of WSPs	Size of WSPs
Firm performance	1				
Internal Audit Practices	.336**	1			
Internal Controls	-.212	.656**	1		
Location of WSPs	.079	.196	.264*	1	
Size of WSPs	-.175	.421**	.246*	.339**	1
**. Correlation is significant at the 0.01 level (2-tailed).					
*. Correlation is significant at the 0.05 level (2-tailed).					

Source: Author (2018)

The results on Table 4.23 establishes a statistically significant positive relationship between internal audit and internal controls (r=0.656), statistically important positive association between internal audit and firm performance (r=0.336), the positive association between internal audit and location of WSPs is not statistically significant (r=0.196). Also the positive relationship between Location of WSPs and performance is not statistically significant (r=0.079). There are also established negative associations between internal controls and performance (r=-0.212) and Size of WSPs and performance (r=-0.175).

4.10 Chapter Summary

The study targeted 93 water service providers in Kenya. 73 questionnaires were correctly filled and returned representing a 78% response rate. Performance of data collection instrument was established through Cronbach's Alpha test. Shapiro Wilk test and Kolmogorov Smirnov tests confirmed normality of the data collected. Data on firm size and firm performance were tested using non-parametric tests that presume that the data is

on a normal distribution. The data was subjected to Multicollinearity tests which confirmed that there is no multicollinearity problem. The chapter highlights the responses on the existence of internal audit and internal controls in the respective WSPs. This is accompanied by individual and organizational descriptive profiles. The chapter also presents the levels of the WSPs performance and a correlation analysis on the study variables.

CHAPTER FIVE

HYPOTHESES TESTING AND DISCUSSION OF FINDINGS

5.1 Introduction

This chapter present results of the tests of the four null hypotheses in the study and their interpretation. The study was guided by four specific objectives from which four hypotheses were derived. The Four hypotheses were tested at 95% confidence level ($\alpha = 0.05$). Using adjusted coefficient of determination (R^2), standardized beta coefficients (β) of regression analysis and the t-test and p-values were used in the determination of individual significance of relationships. Measurement of the robustness and significance of the regression models was done using the F-test and p-values. In both cases above, if p-value is ≤ 0.05 the null hypothesis was rejected, otherwise the null hypothesis was not rejected.

The correlations for the study variables and the regression models are presented in this chapter. The first objective of the study sought to determine the effect of internal audit on firm performance. The second objective was to examine the influence of firm characteristics-Size and Location on the relationship between internal audit and performance of firm. This objective was split into the sub variables of institutional characteristics. The third objective sought to examine the mediation effect of internal controls on the association between internal audit and performance of firm. The fourth objective was to assess the joint relationship between internal audit, institutional characteristics and internal controls to influence performance of firm.

5.2 Influence of Internal Audit on Organisational Performance

The first specific goal of the study was to determine the effect of internal audit on performance of Water Service Providers in Kenya. The study postulated that the relationship between performance and internal audit attributes namely; assurance services, compliance policies, consulting management, independence and objectivity were not significant. Organisational performance was measured through the performance ratio of each water service provider. Simple regression analysis was used to assess if there is linear relationship between the internal audit (independent variables: assurance services, compliance policies, consulting, independence and objectivity) and whether they predicted performance ratio (dependent variables) of the water service providers of Kenya. This was the test of the first hypothesis shown as:

Hypothesis One: The influence of internal audit on performance of water service providers in Kenya is not significant.

The prediction equation was given as: P=$a + \beta_1 X_1 + \varepsilon$

Where: P= Performance

β_1 is beta coefficient

a= intercept

ε= Error term

X_1= internal audit (composite)

The results of the regression model are given in Tables 5.1, 5.2 and 5.3.

5.2.1 Model Goodness of Fit

Determination of the influence of internal audit on performance of Water Service Providers was conducted and obtained results in Table 5.1.

Table 5.1: Model Goodness of Fit of Internal Audit Practices and Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.336[a]	.113	.101	.17739

Source: Author (2018)

The regression results in Table 5.1(a) shows an adjusted R^2= 0.101, F (1,72) = 9.047, p<0.05. The outcome of the regression analysis in Table 5.1shows that 10.1% of variations in organisational performance is explained by variations in internal audit amongst the WSPs while 89.9% is accounted for by other factors outside the study. The relationship is statistically significant (p<0.05) and thus we reject the null hypothesis and accept the alternative hypothesis. This shows that internal audit influences performance of water service providers in kenya.

(b) ANOVA

Table 5.2 tested the goodness of fit of the model by interpreting the p-value as well as the beta coefficients.

Table 5.2: Model Overall Significance of Internal Audit Practices and Organisational Performance

	Sum of Squares	df	Mean Square	F	p-value.
Regression	.285	1	.285	9.047	.004[b]
Residual	2.234	71	.031		
Total	2.519	72			

Source: Author (2018)

As presented in table 5.2, the regression model one shows a statistically significant positive relationship between internal audit and organisational performance (β=0.336, t =3.008, p<0.05) implying that for every unit increase in internal audit, there is an expected increase in performance that proxy organisational performance by 0.336 units.

Table 5.3: Model Regression Coefficients of Internal Audit Practices and Organisational Performance

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	.385	.076		5.070	.000
	Internal audit practices	.064	.021	.336	3.008	.004

Source: Author (2018)

Based on the results of the regression analysis which shows a statistically significant positive association between internal audit and organisational performance, the study concluded that there is a significant relationship between internal audit and performance of water service providers in Kenya resulting to the rejection of hypothesis one (H_{01}). This finding is consistent with earlier findings by Donaldson and David (1991), Cohen and Sayag (2010) which confirmed that existence of internal audit in organisations influence their performance.

5.3 Moderating Effect of Institutional Characteristics on the Relationship between Internal Audit and firm Performance

The second objective of the study was to examine the effect of institutional characteristics on the relationship between internal audit and performance of Water Service Providers in Kenya. Multiple regression analyses of the two sub hypotheses was used to assess if firm size and firm location moderated the relationship between internal

audit and performance ratio of the water service providers in Kenya. The second test was formulated.

Hypothesis Two: *Institutional characteristics have no significant moderating effect on the relationship between internal audit and performance of water service providers in Kenya.*

The prediction equation was given as: P=$a + \beta_{21}X_1 + \beta_{22}X_2 + \beta_{23}X_1X_2 + \varepsilon$.

Where: P= Performance

a= Constant (intercept)

$\beta_{21-}\beta_{23}$= beta coefficients

X_1 = Aggregated score for internal audit

X_2 = Disaggregated score for institutional characteristics (Xi= location, Xj=Size)

X_1X_2 = represents the interaction term (Internal audit, Institutional characteristics respectively)

ε = Error term

The first sub hypothesis was presented as:

H_{2a}: *The moderating effect of water service provider size on the relationship between internal audit and performance of water service providers in Kenya is not significant.*

The prediction equation was given as: P =$a + \beta_{21}X_1 + \beta_{22}X_2 + \beta_{23}X_1X_2 + \varepsilon$.

Where: P= Performance

a= Constant (intercept)

$\beta_{21-}\beta_{23}$= beta coefficients

X_1 = Aggregated score for internal audit

X_2 = WSPs- Size

X_1X_2 = represents the interaction term (Internal audit, firm size)

$\boldsymbol{\varepsilon}$ = Error term

The results are presented in tables 5.4, 5.5 and 5.6 below

5.3.1 Model Goodness of Fit

The researcher conducted a multiple regressions on the test of the first sub hypothesis and presented results in Table 5.4.

Table 5.4: Model Goodness of Fit of Internal Audit, Firm Size and Organisational Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.338[a]	.114	.076	.17980
a. Predictors: (Constant), Internal audit and size, Size of WSPs, Internal audit				

Source: Author (2018)

The multiple regression model as presented in Table 5.4 produced adjusted R^2 = 0.076, F (3,69) = 2.971, $p<0.05$. The model therefore infers that 7.6% of variations in firm performance are explained by variations in firm size and internal audit while 92.4% are not accounted for by the independent variables in the study.

5.3.2 Model Overall Significance

The researcher conducted a multiple regressions on the test of the second sub hypothesis and presented results on Table 5.5.

Table 5.5: Model Overall Significance of Internal Audit, Firm Size and Organisational performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.288	3	.096	2.971	.038[b]
	Residual	2.231	69	.032		
	Total	2.519	72			
a. Dependent Variable: Performance						
b. Predictors: (Constant), Internal audit practices and size, Size of WSPs, Internal audit practices						

Source: Author (2018)

Table 5.5 shows a P-value of 0.038 which was lower than 0.05 significance level indicating that the model was statistically significant; therefore, the model was a good fit.

5.3.3 Model Regression Coefficients

A study to find out whether there was positive association between the interface of internal audit and firm size on one hand and firm performance on the other hand was conducted and results presented in Table 5.6.

Table 5.6: Model Regression Coefficients of Internal Audit, Firm Size and Operational Performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.563	1.217		.463	.645
	Internal audit	.080	.321	.417	.249	.804
	Size of WSPs	-.011	.070	-.064	-.151	.880
	Internal audit and size	.001	.018	.110	.059	.953
a. Dependent Variable: Firm performance						

Source: Author (2018)

Table 5.6 shows positive but not statistically significant association between internal audit and firm performance (β=0.417, t =0.249, p>0.05) implying that for every unit increase in internal audit, there is an expected increase in performance that proxy

organisational performance by 0.417 units. Further, there is a negative association between firm size and performance which is not statistically significant (β=-0.064, t =-0.151, p>0.05) inferring that for every unit increase in firm size, there is a decline in performance to an extent of 0.064 units. Further Table 5.6 shows a positive relationship between the interaction of internal audit and firm size on one hand and firm performance on the other hand which is not statistically significant (β= 0.110, t =0.059, p>0.05). The interaction term is computed as a multiplication of size score and composite internal audit score. It was envisaged that direct multiplication of the Internal Audit variable and the moderating variable to form the interaction term variables would result to the problem of multicollinearity. This is as a result of the fact that many of the various interaction terms would be having a direct linear relationship with each other. To mitigate this problem, the internal audit and Size variables were standardized through extracting their z scores that have a mean of zero and a standard deviation of one.

The results indicate non-significant moderation effect of firm size on the relationship between internal audit and organisational performance of WSPs in Kenya. These finding leads to the failure to reject sub hypothesis two (H_{2a}). The study concurs with the findings by Pfeffer and Salancik (1978) which indicated that institutional characteristics may cause negative effect on business performance resulting from dis-economies of scale. The study also concurs with the literature of Somanathan, Hanson, Dorabawila and Perera, (2000) which states that the cost minimization to improve performance (output: input) is not always relevant in delivering public resources efficiently because of social performance. Public sector such as WSPs may not allocate resources to their optimum level, unless those resources improve their own career in the political environments

The second sub hypothesis was to establish the moderating effect of WSPs location on the relationship between internal audit and performance. The following hypothesis was formulated.

H_{2b}: *The moderating effect of water service provider location on the relationship between internal audit and performance of water service providers in Kenya is not significant.* The prediction equation as was given as:

Performance $= a + \beta_{21}X_1 + \beta_{22}X_2 + \beta_{23}X_1X_2 + \varepsilon.$

Where: P= Performance

a= Constant (intercept)

$\beta_{21-}\beta_{23}$= beta coefficients

X_1 = Aggregated score for internal audit

X_2 = Location of WSPs

X_1X_2 = represents the interaction term (Internal audit and location)

ε = Error term

Multiple regressions on the test of the second sub hypothesis is presented in tables 5.7, 5.8 and 5.9.

5.3.4 Model Goodness of Fit of Internal Audit, Location of WSPs and Firm Performance

Table 5.7: Model Goodness of Fit of Internal Audit, Location of WSPs and Firm Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.371[a]	.137	.100	.17745
a. Predictors: (Constant), Internal audit practices and location, Internal audit practices, Location of WSPs				

Source: Author (2018)

Multiple regression analysis results presented in table 5.7 and 5.8 shows adjusted R^2 = 0.100, F (3.72) = 3.665, $p<0.05$. This infers that 10% of variations in performance of the WSPs are explained by variations in internal audit and respective location of the WSPs while 90% of the variations are explained by external factors.

5.3.5 Model Overall Significance

Table 5.8: Model Overall Significance of Internal Audit, Location of WSPs and Organisational Performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.346	3	.115	3.665	.016[b]
	Residual	2.173	69	.031		
	Total	2.519	72			
a. Dependent Variable: Performance						

Source: Author (2018)

Table 5.9 indicate that there is a positive association between internal audit and performance of the WSPs which is not statistically significant (β=0.169, t =0.447, $p>0.05$). A beta coefficient of 0.167 indicates that a unit increase in internal audit practices leads to increase in performance by up to 0.169 units. There is also not

statistically significant (β=0.757, t =1.340, p>0.05) positive association between location and performance of WSPs which is

5.3.6 Model Regression Coefficients of Internal Audit Practices, Location of WSPs and Performance

Table 5.9: Model Regression Coefficients of Internal Audit Practices, Location of WSPs and Performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.048	.261		.183	.855
	Internal audit	.032	.072	.169	.447	.656
	Location of WSPs	.294	.219	.757	1.340	.185
	Internal audit and location	.083	.060	1.012	1.393	.168
a. Dependent Variable: Performance						

Source: Author (2018)

Table 5.9 shows the interaction term between internal audit and WSP location on one hand and the WSP performance on the other hand have a positive relationship which is not statistically significant (β=1.012, t =1.393, p>0.05). The interaction term is computed as a multiplication of Location score and composite internal audit score. This finding led to the conclusion that there was no significant moderation effect of location on the relationship between internal audit and firm performance. The finding leads to the failure to reject the sub hypothesis two (H_{2b}).

An overall regression model incorporating internal audit, firm size, firm location and their interaction terms as independent variables with performance as dependent variable is presented in tables 5.10, 5.11 and 5.12 below.

5.3.7 Model Goodness of Fit

The fitness of the model was tested and gave results in Table 5.10

Table 5.10: Model Goodness of Fit of Internal Audit Practices, Size of WSPs, Location of WSPs and Organizational Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.373[a]	.139	.075	.17993
a. Predictors: (Constant), Location of WSPs, Internal audit, Size of WSPs, Internal audit and location, Internal audit and size				

Source: Author (2018)

The multiple regression results presented in Table 5.10 presents an adjusted R2 = 0.075, F (5.67) = 2.160, p>0.05. This implies that 7.5% of variations in performance of the WSPs are explained by variations in internal audit as well as WSPs size and location while 92.5% of variation is cannot be explained by independent variables in the study.

5.3.8 Model Overall Significance

The research sought to ascertain the overall significance of the model.

Table 5.11: Model Overall Significance of Internal Audit, Size of WSPs, Location of WSPs and Organizational Performance

Model		Sum of Squares	df	Mean Square	F	Sig.
Source:	Regression	.350	5	.070	2.160	.069[b]
1	Residual	2.169	67	.032		
	Total	2.519	72			
a. Dependent Variable: Performance						
b. Predictors: (Constant), Location of WSPs, Internal audit, Size of WSPs, Internal audit and location, Internal audit and size						

Source: Author (2018)

As presented in table 5.12, there are positive relationships which are not statistically significant between WSPs performance and internal audit (β=0.365, t=0.218, p> 0.05) and WSPs performance and location (β=0.789, t=1.343, p> 0.05). There is also a negative relationship between WSPs performance and size (β=-0.138, t=-0.321, p> 0.05) which is not statistically significant.

5.3.9 Model Regression Coefficients

The researcher sought to ascertain the association between WSPs performance and the interaction term between internal audit practices and WSPs location

Table 5.12: Model Regression Coefficients of Internal Audit , Size of WSPs, Location of WSPs and Organizational Performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.429	1.222		.351	.727
	Internal audit	.070	.321	.365	.218	.828
	Internal audit and size	-.006	.019	-.627	-.327	.745
	Internal audit and location	.087	.063	1.055	1.379	.173
	Size of WSPs	-.023	.071	-.138	-.321	.749
	Location of WSPs	.306	.228	.789	1.343	.184
a. Dependent Variable: Performance						

Source: Author (2018)

From table 5.12 the relationship between WSPs performance and the interaction term between internal audit practices and WSPs size is negative (β = -0.627, t=-0.327, p>0.05). The relationship between WSPs performance and the interaction term between internal audit practices and WSPs location is positive (β = 1.055, t=1.379, p>0.05). These relationships are not statistically significant thereby leading to failure to reject hypothesis

two inferring that institutional characteristics-size and location of WSPs do not moderate the relationship between internal audit and performance of WSPs in Kenya.

5.4 Intervening Effect of Internal Controls on the Relationship between Internal Audit and Organisational Performance

The third objective of the study was to examine the influence of internal controls on the association between internal audit and performance of Water Service Providers in Kenya. This was presented in hypothesis three as:

Hypothesis Three: *The intervening influence of internal controls on the relationship between internal audit and performance of water service providers in Kenya is not significant.*

The Baron and Kenny (1986) four steps approach was applied to test the mediation effects on internal controls on the relationship between internal audit and firm performance. Stepwise regression analysis was used to assess if segregation of duties, human resource, IT controls and Operational controls as a composite intervened the relationship between internal audit and performance ratio of the water service providers in Kenya.

In first stage of the mediation test, regression analysis was performed to assess the relationship between internal audit (independent variable) and firm performance (dependent variable). The prediction model is P=$a + \beta_1 X_1 + \varepsilon$

Where: P= Performance

β_1 is beta coefficient

a= intercept

ε= Error term

X_1= internal audit (composite)

The findings are presented in tables 5.13, 5.14 and 5.15.

5.4.1 Internal Audit and WSPs Performance.

The study sought to test the mediation effects on internal controls on the relationship between internal audit and firm performance, Table 5.13 presents the results.

Table 5.13: Model Overall Significance of Internal Audit and WSPs Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.336[a]	.113	.101	.17739
a. Predictors: (Constant), Internal audit practices				

Source: Author (2018)

5.4.2 Model Analysis of Variance

Table 5.14 tests the goodness of fit of the model by interpreting the p-value as well as the beta coefficients.

Table 5.14: Model Analysis of Variance of Internal Audit and WSPs Performance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.285	1	.285	9.047	.004[b]
	Residual	2.234	71	.031		
	Total	2.519	72			
a. Dependent Variable: Performance						
b. Predictors: (Constant), Internal audit practices						

Source: Author (2018)

The P-value (0.004) was less than 0.05 significance level indicating that the model was statistically significant, hence the model is of good fit.

5.4.3 Model Regression Coefficients

This was used for interpreting the beta and the p-value of the independent variables (Internal Audit and Performance) and it also displays regression analysis results.

Table 5.15: Model Regression Coefficients of Internal Audit Practices and Performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.385	.076		5.070	.000
	Internal audit	-.064	.021	-.336	-3.008	.004
a. Dependent Variable: Performance						

Source: Author (2018)

The results in tables 5.15 shows beta (β = -0.336), t= -3.008, $p<0.05$).The beta coefficients explain a one unit input of each predictor variable in explaining the dependent variable. This showed that, performance of WSPs depends on internal audit as the p-value is less than .05 significance level. The effect of internal audit on firm performance is significant but negative. A unit increase in internal audit will lead to 0.336 units decrease in organisational performance. Thus, the first mediation condition which requires that the independent variable should be significantly related to the dependent variable in the absence of the mediating variable is therefore satisfied with this test.

In the second step of the mediation procedure, regression analysis was conducted to gauge the relationship between internal controls (intervening variable) and internal audit (independent variable) while ignoring the dependent variable (firm performance). The prediction model is: $X_3 = f(X_1)$

Where:

X_3 = Aggregated score internal control attribute

$f(X_1)$ = Function of aggregated score internal audit attributes

The findings are presented in tables 5.16, 5.17 and 5.18 below.

5.4.4 Internal Controls and Internal Audit Explanation

The study sought to establish the extent to which internal controls explain variations in Internal Audit.

Table 5.16: Model Goodness of Fit of Internal Controls and Internal Audit Practices

	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.656[a]	.430	.422	.57157

Source: Author (2018)

As presented in Table 5.16, 42.2% of variations in internal controls are explained by variations in Internal Audit while 57.8% of the variations are not explained by internal audit practices.

5.4.5 Significance of the Model

A study to test whether the model is statistically significant in explaining the relationship between internal controls and internal audit practices was conducted and results presented in Table 5.17.

Table 5.17: Model Overall Significance of Internal Controls and Internal Audit Practices

		Sum of Squares	df	Mean Square	F	p-value
	Regression	17.513	1	17.513	53.605	.000[b]
	Residual	23.195	71	.327		
	Total	40.708	72			

Source: Author (2018)

Table 5.17 shows that the model is statistically significant in explaining the relationship between internal controls and internal audit practices (F (1,72) =53.605, P<0.05)

5.4.6 Coefficients Table

The researcher sought to establish the influence of internal audit on internal controls whether positive or negative and if is statistically significant.

Table 5.18: Model Regression Coefficients of Internal Audit and Internal Controls

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	1.739	.245		7.110	.000
	Internal audit	.505	.069	.656	7.322	.000

Source: Author (2018)

As presented in Table 5.18 shows. the influence of internal audit on internal controls is positive and is statistically significant (β=0.656, t=7.322, P<0.05). This infers that for every unit increase in internal audit, internal controls increase to the extent of 0.656 units. This satisfies the second condition for mediation which states that the independent variable and the intervening variable should be significantly related

In the third step of the mediation analysis, the relationship between firm performance (dependent variable), internal controls (intervening variable) without consideration of internal audit (independent variable) was tested. The results of the regression model are presented in tables 5.19, 5.20 and 5.21 below.

5.4.7 Organisational Performance and Internal Controls

The researcher sought find out whether firm performance variations can be explained by variations in internal controls.

Table 5.19: Model Goodness of Fit of Internal Audit Practices, Internal Controls and Organisational Performance

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.212[a]	.045	.031	.18408
a. Predictors: (Constant), internal controls				

Source: Author (2018)

As presented in Table 5.19, 3.1% of variations in firm performance are explained by variations in internal controls amongst the companies while 96.9% of the variations unexplained by the variables in the study. The model derived is not statistically significant in explaining the relationships between the variables (F (2, 72) =3.331, P>0.05).

5.4.8 Significant Influence

Table 4.20 tests the goodness of fit and the significance of the model by interpreting the p-value.

Table 5.20: Model Overall Significance of Internal Audit , Internal Controls and Organisational Performance

Analysis of variance						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.113	1	.113	3.331	.072[b]
	Residual	2.406	71	.034		
	Total	2.519	72			
a. Dependent Variable: Performance						
b. Predictors: (Constant), internal controls						

Source: Author (2018)

Table 5.20 shows, a p- value = 0.072, this means that the model was not significant since it was above the significant level of 0.05 level hence not explaining the linear relationship

between internal controls and organization performance. Additionally, the F-statistic is significantly greater than 1 thus indicating the appropriateness of the model in testing the relationship between independent and dependent variable. This means that the model is appropriate for use running a factor analysis.

5.4.9 Internal Controls and Organisational Performance

A research to find out the relationship between internal controls and Organisational Performance was carried out.

Table 5.21: Model Regression Coefficients of Internal Audit, Internal Controls and Organisational Performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.347	.102		3.401	.001
	Internal controls	-.053	.029	-.212	-1.825	.072
a. Dependent Variable: Performance						

Source: Author (2018)

As presented in table 5.21 there is a positive association between internal controls and performance (β= - 0.212, t= - 1.825, P>0.05) which is not statistically significant. This implies that internal controls in water service providers in Kenya are weak as they insignificantly influence the relationship between the internal audit and WSPs performance.

In the fourth step, the relationship between firm performance (dependent variable), internal controls (intervening variable) and internal audit (independent variable) was derived.

The prediction equation as shown in chapter three was given as:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$

Where

Y = performance

$\beta 0$ = intercept

β_1, β_2 = regression coefficients

X_1 = Aggregate mean score of internal audit

X_2 = aggregate mean score of internal controls

ε = error term

The result of the regression model is showed in tables 5.22, 5.23 and 5.24 below.

5.4.10 Model Summary

An analysis of how firm performance variation can be explained by variations in internal audit and internal controls was conducted as well as testing the significance in explaining the relationships among the variables.

Table 5.22: Model Goodness of Fit of Internal Audit Practices, Internal Controls and Firm Performance

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.336[a]	.113	.101	.17739
a. Predictors: (Constant), Internal audit practices				

Source: Author (2018)

As presented in Table 5.22, 10.1% of variations in firm performance are explained by variations in internal audit and internal controls while 89.9% of variations are explained by external variables. The model derived is statistically significant in explaining the

relationships between the variables. Adjusted R^2 indicates the true behavior of R^2 that varies in accordance with the changes in independent variables.

5.4.11 ANOVA

The researcher sought to establish whether the model was appropriate for the analysis.

Table 5.23: Model Overall Significance of Internal Audit, Internal Controls and Firm Performance

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.285	1	.285	9.047	.004[b]
	Residual	2.234	71	.031		
	Total	2.519	72			
a. Dependent Variable: Performance						
b. Predictors: (Constant), Internal audit practices						

Source: Author (2018)

From the table 5.23, the model was significant (p-value = 0.004) at 0.05 level in accounting for the linear relationship between internal audit practices and organization performance. Additionally, the F-statistic is significantly greater than 1 thus indicating the appropriateness of the model in testing the relationship between independent and dependent variable. This means that the model is appropriate for use running a factor analysis.

5.4.12 Regression Coefficients

These were used to interpret the beta and the p-value of Internal Audit, Internal Controls and Performance and also exhibit regression analysis results.

Table 5.24: Coefficients Table

		Unstandardized Coefficients		Standardized Coefficients	t	P-value	Interpretation
		B	Std. Error	Beta			
	(Constant)	.378	.100		3.781	.000	Significant
	Internal controls	.004	.037	.015	.104	.918	Insignificant
	Internal audit	.066	.029	.346	2.323	.023	Significant
a. Dependent Variable: Performance							

Source: Author (2018)

As presented in Table 5.24 there is a positive relationship between internal controls and performance (β=0.015, t=0.104, P>0.05) which is not statistically significant. There is also a positive relationship between internal audit and firm performance (β=0.346, t=2.323, P<0.05) which is statistically significant.

In this fourth step, the influence of the independent variable (internal audit) on the dependent variable (financial performance) is significant in the presence of the intervening variable (internal Controls) thus contravening the fourth condition for mediation which states that the effect of the independent variable should be insignificant with the existence of the mediating variable. This further indicated that intervening variables do not significantly influence performance of WSPs in Kenya.

The foregoing findings thus lead to a fail to reject hypothesis three (H_3). The finding is not consistent with the earlier contributions of Theofaris et al. (2011) and Badara and Saidin (2013) that opined that all elements of internal controls mediate the relationship between internal audit and firm performance.

5.5 Joint Eeffect of Internal Audit, Institutional Characteristics and Internal Controls on Organisational Performance

The fourth objective of the study was to establish the joint effect of internal audit, institutional characteristics and internal controls on performance of Water Service Providers in Kenya. Stepwise regression analysis was used to assess the joint effect.

Hypothesis Four: *The joint effect of internal audit, internal controls and institutional characteristics does not significantly influence performance of Water service providers in Kenya.*

The prediction equation was given as:

Performance(Y) = $a + \beta_{41}X_1 + \beta_{42}X_2 + \beta_{43}X_3 + \varepsilon$

Where:

a = intercept

Y = performance

$\beta_{42}x_j$- β_{44} are beta coefficients

X_1 X_2 X_3 Represent interaction term

X_1= Internal audit (Aggregated Variables)

$X_{2,}$=x_2 and x_3= Disaggregated institutional characteristics (WSP size and location)

X_4= Internal controls (Aggregated Variables)

ε = Error term.

The results of the regression model are presented in tables 5.25 and 5.26 below.

5.5.1 Regression Analysis

The researcher used multiple regressions where performance variable was the dependent variable and internal audit, location, size and internal control were the independent variables to test for correlation and obtained the results in Table 5.25.

Table 5.25: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.248[a]	.062	.048	.17669
2	.310[b]	.096	.070	.17461
3	.335[c]	.112	.074	.17430
4	.356[d]	.126	.075	.17419

Source: Author (2018)

Table 5.25 displays the results of multiple regression where the degree of association between performance and internal audit, location, size and internal control is shown by correlation coefficients (R). The findings show that there was a positive correlation between performance and internal control, Location**,** Size and internal audit of 0.248, 0.31, 0.335 and 0.356 respectively

Coefficient of Determination (R^2) in the study shows how the variability in dependent variable (Y) is caused by changes in independent variables (X_1, $X_{23,}X_4$). The results of adjusted R squared indicates that 4.8%, 7%, 7.4% and 7.5% of changes in performance is explained by the Internal control, Location**,** Size and internal audit respectively while 95.72%, 93%, 92.6% and 92.5% respectively is explained by other factors not in the model.

5.5.2 Analysis of Variance

Table 5.26 tests the goodness of fit of the model by interpreting the p-value.

Table 5.26: Analysis of Variance

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.145	1	.145	4.654	.034[b]
	Residual	2.217	71	.031		
	Total	2.362	72			
2	Regression	.227	2	.114	3.730	.029[c]
	Residual	2.134	70	.030		
	Total	2.362	72			
3	Regression	.266	3	.089	2.914	.040[d]
	Residual	2.096	69	.030		
	Total	2.362	72			
4	Regression	.299	4	.075	2.460	.054[e]
	Residual	2.063	68	.030		
	Total	2.362	72			
a. Dependent Variable: Performance						
b. Predictors: (Constant), Internal Control						
c. Predictors: (Constant), Internal Control, Location						
d. Predictors: (Constant), Internal Control, Location, Size						
e. Predictors: (Constant), Internal Control, Location, Size, Internal audit						

Source: Author (2018)

The p-values of internal control, location and size (0.034, 0.029 and 0.04 respectively) in Table 5.26 indicates that the model was statistically significant since they were all less than 0.05, hence a statistical relationship between performance and Internal Control, Location and Size while for internal audit shows a no statistical relationship between internal audit and performance, a p-value of 0.054. Moreover, the F-statistics are significantly greater than 1 thus indicating the appropriateness of the model in testing the

relationship between independent and dependent variables. This means that the model is appropriate for use running a factor analysis.

5.6 Discussion of Findings

The broad objective of the study was to determine the relationship among internal audit, institutional characteristics – size and location, internal controls and performance of Water Service Providers in Kenya. This section discusses the findings of the study based on the null hypothesis tested as given in chapter one.

5.6.1 Internal Audit and Performance of Water Service Providers in Kenya

The first specific objective of the research was to determine the influence of internal audit on performance of Water Service Providers in Kenya. The study hypothesised that the influence of internal audit on performance of water service providers in Kenya is not significant.

The study establishes statistically significant positive relationship between internal audit and firm performance. The finding shows that 10.1% of variations in firm performance are explained by variations in internal audit practices. Informed by the results of the regression analysis which shows a statistically significant positive relationship between internal audit and organisational performance, it is therefore concluded that there is a significant relationship between internal audit and performance of water service providers in Kenya resulting to the rejection of hypothesis one (H_1). The finding reinforces the import on the definition of internal audit advanced by Nyakundi, Nyamita & Tinega (2014) and the institute of internal auditors (1999) as an independent, objective assurance

and consulting activity designed to add value and improve organisational performance. The study established that effective internal audit enhances performance of firms.

The study findings confirm empirical study conclusions by Badara and Saidin (2013) and Johl, Kaur, Subramaniam and Cooper (2013) that internal audit improve organisational performance. The study results agree with the contingency theory perspective that the organisational performance is dependent upon internal audit. The study agrees with the findings of Cohen and Sayag (2010) that effectiveness of internal audit to enhance firm performance depends on support from top management to provide adequate resources required for internal audit activity. As explained by Hays and Davis (2004), the role of internal audit in monitoring operational activities is provided for in the monitoring theory.

Within the resource based theory, the findings confirm the assertion that companies employ their resources by creating and implementing effective internal audit in a way to maximize their performance. Additionally, the study findings concurs with the research results of Unegbu and Koda (2011) on effectiveness of internal audit as a tool for improving corporate governance and accountability in state firms. Further, as provided for in the agency theory discourse, organisational ownership protects their interests from abuse by managers by putting in place strong internal audit and the study concludes that improvements in internal audit also improves organisational performance. It is also noted within the Policeman theory arguments explained by Salehi and Azary (2011) that necessity for audit services is a result of the participation of outside stakeholders in the company who require accountability from the management, in return for their contribution to the company.

5.6.2 Internal Audit, Institutional Characteristics and Performance of Water Service Providers in Kenya

The second specific objective of the study was to examine the effect of institutional characteristics on the relationship between internal audit and performance of Water Service Providers in Kenya. The study hypothesised that the moderating effect of institutional characteristics on the association between internal audit and performance of water service providers in Kenya is not significant. The institutional characteristic of water service providers was broken down to sub- variables Size and Location of the firm whose effects were independently tested.

As presented in table 5.6 above, there is a positive association between the interaction of internal audit and firm size on one hand and firm performance on the other hand which is not statistically significant (β= 0.110, t =0.059, p>0.05). It was envisaged that direct multiplication of the Internal Audit variable and the dependent variable to form the interaction term variables would result to the problem of multicollinearity. To mitigate this problem, the independent and Institutional characteristics variables were standardized through extracting their z scores that have a mean of zero and a standard deviation of one.

This finding leads to the conclusion that there is no significant moderation effect of firm size on the association between internal audit and organisational performance. This finding thus leads to the failure to reject sub hypothesis two (H_{2a}). This finding contradicts earlier contributions by Majumdar (1997) and Unegbu and Koda (2011) which indicated that company size influences the relationship between internal audit and firm performance but concurs with the results of the findings by Pfeffer and Salancik (1978) which indicated that network environment may cause negative effect on business performance.

Results on multiple regression analysis on the test of the second sub hypotheses are presented in tables 5.7, 5.8 and 5.9.

Multiple regression analysis results presented in table 5.7 and 5.8 shows adjusted R^2 = 0.100, F (3.72) = 3.665, $p<0.05$. This infers that 10% of variations in performance of the WSPs are explained by variations in internal audit practices and respective location of the WSPs. Table 5.9 shows that there is a positive relationship between internal audit and performance of the WSPs which is not statistically significant (β=0.169, t =0.447, $p>0.05$) inferring that a unit increase in internal audit leads to increase in output by up to 0.169 units. There is also a positive association between location and performance of WSPs which is not statistically significant (β=0.757, t =1.340, $p>0.05$). The interaction term between internal audit and WSP location on one hand and the WSP performance on the other hand have a positive relationship which is not statistically significant (β=1.012, t =1.393, $p>0.05$). This finding leads to the conclusion that there is no significant moderation effect of location on the relationship between internal audit and firm performance. The finding leads to the failure to reject the sub hypothesis two (H_{2b}).

The finding shows that overall, 7.6% of variations in firm performance are explained by variations in internal audit, firm size and firm location. This is a finding that departs from the propositions of Majumdar (1997), Unegbu and Koda (2011) and Aldamen, Duncan, Kelly, McNamara and Nagel (2012) but agrees with the findings of Pfeffer and Salancik (1978) posited by Penrose (1979) in resource based theory, that dis-economies of scale in a firm can cause negative effects on performance.

The finding is explained by the reality that effective internal audit function may require firms to have internal audit cost- benefit analysis and determine availability of adequate

resources in all entities irrespective of their specific institutional characteristics namely size and location. The results of the study on the influence of resources on the performance of firm agrees with the works of Unegbu and Koda (2011) who did an empirical research on effectiveness of internal audit as an instrument of improving public sector performance. The findings were that: internal audit can effectively reduce fraud and fraudulent activities in public sector to function effectively but they were not adequately equipped to accomplish their task effectively. As explained by Pasanen (2013) in the resource base theory, possession of resources which are unique is a source of superior performance. However, size of the firm determines the resources available to strengthen internal audit function. The size of budget controlled by over 70% of the Kenyan WSPs may not adequately fund strong internal audit functions

5.6.3 Internal Audit, Internal Controls and Performance of Water Service Providers in Kenya

The third specific objective of the study was to examine the mediating effect of internal controls on the relationship between internal audit and performance of Water Service Providers in Kenya. This study hypothesized that internal controls insignificantly influence the relationship between internal audit and performance of Water service providers in Kenya. The Baron and Kenny (1986) four steps approach applied to test the mediation effects on internal controls on the relationship between internal audit practices and firm performance As presented in table 5.21 above there is a positive relationship between internal controls and performance (β=0.015, t=0.104, P>0.05) which is not statistically significant. There is also a positive relationship between internal audit and firm performance (β=0.346, t=0.104, P<0.05) which is statistically significant. In this

fourth step, the influence of the independent variable (internal audit practices) on the dependent variable (WSP performance) is significant in the presence of the intervening variable (internal Controls) thus contravening the fourth condition for mediation which states that the effect of the independent variable should be insignificant in the presence of the mediating variable. The foregoing findings thus lead to a fail to reject and thus a confirmation of hypothesis three (H_3).

The finding is not consistent with the earlier contributions of Theofaris et al. (2011) and Badara and Saidin (2013) that opined that all elements of internal control influence the relationship between internal audit and firm performance.

In the third finding, internal controls do not intervene in the relationship between internal audit and firm performance as earlier alluded to by Theofaris et al. (2011) and Badara and Saidin (2013). Internal controls are established within the agency theory where it is believed that contracting includes policies, regulations and delegating decision making authority to the agent. When the principals (shareholders) and agents (management), each seek to maximize their utility, the agent may possibly prioritize own interests at the expense of those of the principal and this is checked through segregation of execution and monitoring roles. Though the research and literature by Theofaris et al. (2011) and Badara and Saidin (2013) anticipate information technology to mediate the relationship between internal audit and firm performance, the state of uptake of information technology in the respective WSPs is still low and thus the effect may not be of significance. A possible cause of lack of mediation is the possibility of weak internal controls or their absence thereon as alluded to by Mawanda (2008). The weak internal control attributes may include inadequacy of personnel skills and operating procedures

and lack of funds and goodwill on the part of management to implement effective internal controls.

5.6.4 The Joint Effect of Internal Audit, Institutional Characteristics, Internal Controls on Performance of Water Service Companies in Kenya

The fourth objective of the study was to establish the joint effect of internal audit, institutional characteristics and internal controls on performance of Water Service Providers in Kenya. The study hypothesised that the joint effect of internal audit, internal controls and institutional characteristics on performance of Water service providers is not significant.

The results of the regression model presented in tables 5.25, 5.26, 11.4% of variations in firm performance are explained by variations in internal audit (Adjusted $R^2 = 0.114$). This is an indication that the moderator and intervening variables did not significantly influence firm performance. The fourth finding indicates a statistically significant positive relationship between internal audit and firm performance. Variations in internal audit explain up to 11.4% of variations in firm performance and the internal control and firm characteristic attribute effects are not significant in the relationships. The finding leads to a failure to reject of hypothesis four. This is not consistent with earlier findings of Eko and Hariyanto (2011) and Zhang, Zhou and Zhou (2007) which suggested that internal audit, internal controls and firm characteristics jointly have a significant relationship with firm performance. This is further an indication that there are weak internal controls in most of the WSPs irrespective of their locality or size.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This study sought to achieve four specific goals by testing four hypotheses. This chapter presents a summary of the findings of the study, conclusions, recommendations, implications, limitations and suggested areas of future study.

6.2 Summary of the Findings

This study is premised on earlier study findings which indicate that internal audit influences organisational performance. The study findings cannot however alone explain the variability in the firm's performance which infers that other factors including internal controls and firm specific institutional characteristics influences the relationship. The empirical evidence remains inconclusive on the nature and strengths of the relationships. This study therefore, set out to examine the relationship between internal audit, institutional characteristics, internal controls and organisational performance of water service providers in Kenya.

Correlation analysis results established a statistically significant positive relationship between internal audit and internal controls implying that firms with good internal audit have effective internal controls as well. Secondly, a statistically significant positive relationship between internal audit and firm size shows that companies that are large tend to have put in place established audit functions when compared with the smaller companies. Thirdly, the study established a statistically significant positive relationship between internal audit and firm performance indicating that companies with established internal audit departments tend to perform better than the companies lacking internal

audit. Fourthly, there is a negative association between internal controls and performance which is an indicator that WSPs with internal audit practices and do not adhere to internal control mechanisms tend to be outperformed by companies with effective internal control measures. Fifth, the negative relationship between WSPs size and performance is an indicator that smaller companies tend to be better performers based on their input and output relationships when compared with larger companies that often suffer from dis-economies of scale .This is an indication of possible dispersion of water connections to households covering larger un economical areas attracting high None revenue water percentages and higher operating costs just to give an essential public service to citizens. Sixth, the positive association between location of WSPs and performance is a pointer to the better performance of urban based WSPs when compared with the rural based counterparts which is also attributed to diseconomies of scale possibly from dispersion of geographical coverage of the service provision.

On the association between internal audit and performance, the study found that 10.1% of variations in organisational performance are explained by variations in internal audit amongst theWSPcompanies. The study findings indicated a statistically significant positive relationship between internal audit and organisational performance. The coefficients implied that every unit increase in internal audit resulted into increase in firm performance by 0.336 units. The findings rejected of H_1 and confirmation of existence of a significant relationship between internal audit practices and firm performance.

The rejection of hypothesis one collaborates earlier literature by Donaldson and David (1991), Serems and Bebedde (2006), Cohen and Sayag (2010) which posited that existence of internal audit in firm enhance organisational performance. The findings thus

confirmed Contingency Theory advanced by Lawrence & Lorsch (1967) and Woodward (1958) which explains that organisational performance is contingent upon internal audit effectiveness. It is also consistent with Policeman Theory explained by Hayes et al. (1999) and Morgan (1979) in the arguments that internal auditing is about monitoring role made to safeguard stakeholder's assets and making sure accountability and transparency.

A Multiple regression analysis results established that 7.6% of variations in performance of the water service providers are explained by variations in internal audit and firm size while 92.4% of the variation is explained by other factors not in the study. The study established not statististically significant positive relationships between internal audit and firm performance and the interaction term between internal audit practices, WSP size and WSPperformance. The study also established a not statistically significant negative relationship between WSP size and firm performance. The study shows that, size as an institutional characteristic does not have a moderation effect on the relationship relationship between internal audit and firm performance.

A multiple regression analysis results further shows that 10% of variations in the WSPs performance is explained by variations in internal audit and location of the WSPs while 90% of the variation is explained by other factors not in the study. From the analysis, not statistically significant positive relationships are established between internal audit and WSP performance, Location of WSPs and performance and interaction term between internal audit, location of WSPs and performance of the WSPs. The analysis therefore indicate that location as an institutional characteristic does not moderate the relationship between internal audit and performance of the WSPs.

The multiple regression analysis results show that 7.5% of variations in firm performance are explained by variations in internal audit, firm size and firm location while 92.5% of the variation is explained by other factors not in the study. Since the relationships are not statistically significant, the results infer that the selected institutional characteritics do not moderate the relationship between internal audit and firm performance. The foregoing findings thus confirm Hypothesis two in the study.

The failure to reject hypothesis two is not consistent with earlier contributions by Majumdar (1997), and Unegbu and Koda (2011) which indicated that institutional characteristics especially company size influences the relationship between internal audit and organisational performance. The finding has explained that the practice of internal audit in the WSPs in Kenya is not dependent on size or location of the companies. As explained by the Resource based view advanced by Penrose (1959), the different resources owned by companies can have significant influence on the companies' performance. Variations in size and location in this case however do not significantly influence the performance differences observable amongst the companies that have internal audit. This may suggest that the allocation of resources to internal audit in WSP firms relies on other variables not in the study model.

The regression analysis results establish that 8.8% of variations in performance of the WSPs are explained by variations in internal controls and internal audit amongst the companies while 91.2% of the variation is explained by other factors not in the study. The four step mediation tests indicate statistically significant positive relationships between internal audit and WSPs performance, Internal audit and Internal controls and statistically significant relationships between internal controls and performance of the

WSPs. In the presence of the the mediating variable (internal controls), the positive influence of the independent variable (internal audit) on the dependent variable (performance) is significant which leads to failure to reject hypothesis three.

The failure to reject hypothesis three is not in conformance with earlier contributions of Theofaris et al. (2011) and Badara and Saidin (2013) who opined that internal control elements influence the relationship between internal audit and firm performance. A possible cause for lack of mediation is on the possibility of weak internal controls or their absence in the companies. This is alluded to the observations in the WASREB report in 2012 that internal audit is weak and or lacking in some WSPs. This is an indication that internal audit has not enforced adherence to internal controls which subsequently leads to improved performance.

Stepwise regression analysis results indicates that 4.28%, 7%, 7.4% and 7.5% of changes in performance is explained by the Internal control , Location **,** Size and internal audit respectively while 95.72%, 93%, 92.6% and 92.5% respectively is explained by other factors not in the model.These findings are not consistent with the works of Eko and Hariyanto (2011) who concluded that there is a positive and statistically significant relationship between internal control, internal audit & commitment and firm performance. The findings lead to the failure to reject hypothesis four as the joint effect is established not to be statistically significant.

Table 6.1: Summary of Tests of Study Findings, Study Hypotheses, Interpretation and Implications

Objective	Hypothesis	Statistical Tests / Study Findings	Interpretation & Implications
To determine the influence of internal audit on performance of WSPs in Kenya.	H_1: Internal audit has insignificant influence on performance of WSPs in Kenya.	Simple regression and correlation analysis were used. The study established a statistically significant positive relationship between internal audit and firm performance.	The findings lead to rejection of hypothesis one which concludes that internal audit positively and significantly influence WSPs performance.
To examine the effect of institutional characteristics - Size on the relationship between internal audit and performance of WSPs in Kenya	H_{2a}: Size has no significant moderating effect on the relationship between internal audit and performance of WSPs in Kenya.	Multiple regression analysis was used. The study established a not statistically significant positive relationship between the interaction term of internal audit, size and WSPs performance.	The findings lead to confirmation of hypothesis 2a and infer that institutional characteristic- Size do not significantly moderate the relationship between internal audit and WSPs
To examine the effect of institutional characteristics - Location on the relationship between internal audit and performance of WSPs in Kenya	H_{2b}: Location has no significant moderating effect on the relationship between internal audit and performance of WSPs in Kenya.	Multiple regression analysis was used. The study established a not statistically significant positive relationship between the interaction term of internal audit, location and WSPs performance.	The findings lead to confirmation of hypothesis 2b and infer that institutional characteristic - Location does not significantly moderate the relationship between internal audit and WSP performance in Kenya.
To examine the effect of internal controls on the relationship between internal audit and performance of WSPs in Kenya.	H_3: Internal controls do not significantly intervene in the relationship between internal audit and performance of WSPs in Kenya.	Multiple regression analysis was applied with the four Baron and Kenny (1986) steps. The findings show a statistically significant positive effect of internal audit on performance in the presence of internal controls which violates conditions for mediation.	The finding leads to rejection of hypothesis 3 and infers that internal controls do not mediate the relationships between internal audit and performance of the WSPs in Kenya.

Objectivity	Hypothesis	Statistical Tests/Study Findings	Interpretation & Implication
To establish the joint effect of internal audit, institutional characteristics and internal controls on performance of Water Service Providers in Kenya.	H_4: The joint effect of internal audit, internal controls and institutional characteristics does not significantly influence performance of Water service providers in Kenya.	Stepwise regression analysis established a statistically significant positive relationship between internal audit and firm performance. The internal controls and institutional characteristics are not significant.	The findings support hypothesis 4 and indicate that the joint effect of internal audit, internal controls and institutional characteristics do not significantly influence performance of WSPs in Kenya.

Source: Researcher, (2018)

6.3 Conclusions and Recommendations

This study set out to examine the relationships between internal audit, institutional characteristics, internal controls and performance of water service providers in Kenya. The study was anchored on Contingency, Monitoring, Resource base, agency and Policeman theories. Primary and secondary data were collected from the Water service providers in Kenya. Out of 93 questionnaires issued to the respondents, 73 (78%) respondents filled and the data collected used for the analysis.

Correlation analysis indicated statistically significant positive association between internal audit and internal controls, internal audit and firm size, internal audit and firm performance. Correlation analysis further explained that, failure to confirm hypothesis one is consistent with previous studies which also confirmed that internal audit positively influences firm performance, Donaldson and David (1991), Serems and Bebedde (2006), Cohen and Sayag (2010). The study findings confirmed the propositions in contingency theory of Lawrence and Lorsch (1967) and (1958) and the Policeman theory, Hayes et al.

(1999), Morgan (1979). Established statistically significant weak negative association between internal controls and firm performance, WSPs size and performance and further, a weak positive relationship between location and performance of the WSPs.

Simple regression analysis results led to rejection of hypothesis one and concluded that internal audit significantly influence firm performance. Therefore, for improved performance of the WSPs, the firm managers and directors should ensure existence of sound internal audit including; assurance services, compliance policies, consulting management, independence and objectivity. There should also be an audit committee that oversee internal audit, provides resources and ensures competency of the chief internal auditor.

Regression analysis results led to failure to reject hypothesis two which concluded that institutional characteristics size and location did not significantly moderate the relationship between internal audit and performance of the WSPs. This finding contravenes the propositions of Resource based view of Penrose (1959) which advanced that different resources owned by the WSPs have significant influence on their performance. The findings are contrary to the arguments of Majumdar (1997), and Unegbu and Koda (2011) which confirmed that firm specific characteristics such as size and location influence the relationship between internal audit and organisational performance. In light of these findings, regulators and firm managers and directors should ensure consistency of audit practices and effective internal controls amongst the larger and smaller companies as well as rural and urban based companies so that the firm specific attributes and discrepancies in characteristics do not negatively influence the levels of firm performance.

The findings of the study which point to existence of weak internal controls in the WSPs reinforce the need for public sector companies to ensure that the internal audit function effectiveness is supported by institutionalizing all internal control mechanisms including; segregation of duties, IT controls, human resource and operating procedures.

Stepwise regression analysis finds a no statistically significant positive relationships among internal audit, institutional characteristics, internal controls and organisational performance leading to a failure to reject of Hypothesis four. The failure to reject hypothesis four does not confirm earlier findings by Eko and Hariyanto (2011) that internal audit, firm characteristics and internal controls jointly influence firm performance. The failure to reject hypothesis four indicates that internal audit function in the WSPs is not well developed and is weak such that it requires reinforcement from the independent audit committees and the board of directors in terms of resources so as to oversight internal controls effectively.

6.4 Contributions of the Study

The findings from this study contribute to the body of knowledge in the area of internal audit, internal controls, institutional specific characteristics and firm performance. This section highlights the study contribution to theory, knowledge, management policy cum practice and benefits to public sector enterprises in the essential Water services sector.

6.4.1 Contributions to Theory and Knowledge

This study contributes to academic knowledge in various ways. Foremost, the findings authenticate propositions of various theories in reviewing literature that include the Policeman Theory, Monitoring Theory, Contingency Theory, Resource based theory and

agency theory. These theories interlink firm performance to firm specific characteristics as well as the internal audit and internal control measures. As per the Policeman Theory propositions, the study findings reinforce that adherence to internal controls leads to improved performance by ensuring safety for assets, fraud detection and deterrence, risk management and controls. The contingency theory arguments that success of management depends on prevailing circumstances considered as internal control mechanisms is supported by the mediation relationships of segregation of duties established in the foregoing study. The existence of segregation of duties and monitoring role of internal audit indicate the principles that support the Monitoring theory.

The study applied the data envelopment analysis to measure performance in public enterprises as a proxy for firm performance. Earlier studies investigating performance in state owned firms have often focused on surplus and profitability and not performance as considered in this study.

The study considered the effect of internal audit on performance of the WSPs alongside the intervening and moderating effects of internal controls and institutional characteristics on the relationships. The study findings confirm that internal audit significantly influences firm performance and is thus consistent with the expected relationships in the previous studies. The findings further confirm that internal audit reinforces segregation of duties that subsequently improves firm performance as alluded to in the literature. The firm specific characteristics were also found to influence the relationship between internal audit and firm performance though not significantly.

6.4.2 Contributions to Policy and Practice

This study's findings are relevant to various entities, i.e. the Water Regulatory Authorities, the government, and water service provider directors and managers. Since provision of water is a universally accepted responsibility of Government to its people, it is the duty of Government policy makers to ensure sustainability of the WSP institutions through effective internal audit practices and internal control mechanisms irrespective of the location or size of the company.

The Water services regulatory board to which these WSPs are responsible as a regulator should ensure that each WSP within their reporting chain should have in place homogeneous internal audit practices, adherence to internal control mechanisms that ensure performance in the companies and subsequently value for money for the government that has entrusted immense resources in the sector.

The Board of directors and the executive officers of the WSPs should ensure that there are sound internal audit practices in the companies that lead to effective internal control mechanisms and subsequently improved firm performance. Management effort should focus on independence and objectivity of internal audit and board audit committee, management support to internal audit and robust, effective internal controls. This should be supported by provision of adequate resources to the audit function and a good internal audit environment that adheres to its charter.

6.5 Limitations of the Study

The primary data on internal audit and internal control practices were collected using a five-point Likert-type scale. There is a chance that some of the respondents may have

either over/under rated their scoring on some of the questions leading to a score that is different from the actual position. This was however countered by the fact that a number of questions were asked to address the same measure.

The study presumed existence of a linear relationship between internal audit, internal control mechanisms, institutional characteristics and performance. There is a possibility of the study variables having a different form of relationship like a curvilinear relationship that the current study did not explore since it was considered out of scope of the current study design.

The study made the assumption that internal audit and internal control practices of the companies did not change over the period of the study. It is possible that the WSPs adopted different practices and mechanisms with time and as they learned from their past failures while comparing with peer companies and if this happened, it may have distorted the measurement of internal audit and internal controls used in this study which may have led to different conclusions.

6.6 Suggestions for Further Study

This study collected and analysed secondary data covering five years only with respect to performance. Primary data was collected using a five-point Likert type scale. There is need to extend this study over a longer period of time to allow for random effects influence of internal audit on firm performance. Future studies may use both open ended and closed ended questionnaire or use any other methods to collect primary data rather than relying on five-point likert type scale.

The study notes that the joint effect of internal audit, institutional characteristics and internal controls on firm performance is not statistically significant. Further studies should model other forms of relationships between the study variables including curvilinear relationships and dual causality relationships as well as introducing other characteristic variables to the study model. Third, a focus on a different organisational setting is also recommended to bring out the differential effect of internal audit on firm performance.

It is necessary to enquire into the existence of internal audit practices across time and across industrial settings other than public companies and how this affects the overall firm performance. Fourth, the study focused on public WSPs under the assumption that private WSPs perform better and have sound internal audit practices and internal controls. It may be necessary to carry out a study comparing the performance of Public sector and Private sector WSPs.

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APPENDICES

Appendix I: Questionnaire

This questionnaire is developed to collect data from water service providers in Kenya on the influence of firm characteristics and internal controls on the relationship between internal audit, and performance. The data collected shall be used solely for academic purposes and will be treated with confidence. Your participation in making this study a reality is highly appreciated. I wish to assure you that only the researcher will have access to the raw data and the development of the final report which should therefore give you freedom in answering the questions.

SECTION A: ORGANIZATIONAL / RESPONDENTS PROFILE

Name of the WSP ----------

Public ownership or Private.----------

Physical address of the WSP ----------

1. What is your Designation? (Tick as appropriate)
   - Chief Executive Officer /Equivalent [ ]
   - Chief internal auditor [ ]
   - Chief finance officer [ ]
   - Other (specify)……
2. How long have you worked in the current designation? ----------yrs
3. For how long has the WSP been in existence? ----------yrs
4. Please indicate the size of the WSP
   a) Number of water connections ----------

b) 2014/2015 annual Budget controlled (in millions) KES----------

5. Please indicate percentage of water connections in your WSP located in Rural [%] Urban [%] areas.

SECTION B: FUNCTIONS OF INTERNAL AUDIT

6. A) Does the internal audit have annual audit plan?

Yes [ ] No [ ]

B) Does the internal audit have internal audit charter?

Yes [ ] No [ ]

C) Does the internal audit have internal audit manual?

Yes [ ] No [ ]

7. Does the internal auditor submit the audit plan to audit committee and board for approval?

Yes [ ] No [ ]

8. The following statements describe the various aspects of internal audit in your organization. Please indicate the extent to which each statement applies to your organization. Kindly use the key provided to TICK as appropriate. Use the following scale as appropriate.

Key: 1-Not at all; 2-Less extent; 3- Moderate extent; 4- Large extent; 5-Very large extent

S.NO	**STATEMENTS**	**1**	**2**	**3**	**4**	**5**
ASSURANCE SERVICE						
i.	Internal audit is keen to provide Comprehensive information on operations of the organization					
ii.	The information provided by internal audit is highly reliable					

S.NO	STATEMENTS	1	2	3	4	5
iii.	The integrity of information provided by internal auditors is beyond reproach.					
iv.	The chief internal auditor review reliability of internal procedures and gives recommendations					
v.	Internal audit assist management with the evaluation of internal controls used to detect or mitigate fraud, evaluate the organization's assessment of fraud risk, and are involved in any fraud investigations.					
vi.	Is the audit plan regularly reviewed to ensure compliance with the IIA standards of reporting?					
COMPLIANCE POLICIES						
i.	The chief internal auditor is keen on safeguarding adherence to policies and procedures					
ii.	The auditing procedures are thorough and able to detect any fraud					
iii.	The chief internal auditor continuously review the operating procedures and gives recommendations					
iv.	The internal procedures are customised to specific situations					
CONSULTING MANAGEMENT						
i.	The chief internal auditor is constantly consulted on best practices of financial management					
ii.	The chief internal auditor is proactive in initiating measures that curb frauds					
iii.	The chief internal auditor expeditiously investigates cases of fraud and develops potential solutions to deter frauds					
iv.	The management implement proactively internal auditors recommendations					
v.	The management constantly consults internal auditors on risk management strategies.					

S.NO	STATEMENTS	1	2	3	4	5
INDEPENDENCE						
i.	The chief audit executive has direct and unrestricted access to audit committee and the board					
ii.	The boards through the audit committee approves the internal audit budget , resource plan and reviews audit plan					
iii.	The internal auditor is free from interference in determining the scope of auditing, and communicating results .					
OBJECTIVITY						
i.	The remuneration and terms of service for internal audit staff are determined by the board.					
ii.	There are policies prohibiting internal auditors from auditing areas where relatives are employed in important or audit-sensitive positions.					
iii.	The chief internal auditor has direct access and reports regularly to the board.					

SECTION C: FUNCTIONS OF AUDIT COMMITTEE

9. Does the organization have an audit committee?

Yes [ ] No [ ]

10. The following statements describe aspects of audit committee in your organizations. Please indicate the extent each statement applies to your organization. (Tick appropriately) Give your ratings in the scale of 1-5 (Where 1 = Not at all; 2 = Small extent 3 = Moderate extent 4 = Great extent 5 = Very great extent)

S.NO	STATEMENTS	1	2	3	4	5
OVERSIGHT ON INTERNAL AUDIT.						
i.	The policies and practices developed by the internal audit for					

S.NO	STATEMENTS	1	2	3	4	5
	risk management are approved by the audit committee.					
ii.	The audit committee approves audit program before it's forwarded to the board for implementation.					
iii.	The auditors are on performance appraisal that is closely monitored by the audit committee.					
iv.	The Audit committees review effectiveness of internal auditors.					
v.	The committee meets with internal auditors and management on a periodic basis to discuss matters of concern that may arise.					
vi.	The audit committee discusses any observations or significant findings of internal auditors and recommends action.					
vii.	The audit committee establishes procedures for accepting confidential, anonymous concerns relative internal control matters					
viii.	Does the audit committee regularly report to the board?					
PROVISION OF RESOURCES						
i.	The audit committee approves the budget of internal audit department and ensures that they are adequate for internal audit function.					
ii.	The audit committee determines compensation and benefits of internal audit members of staff					
iii.	The committee ensures the internal audit function has the appropriate adequate resources and expertise					
COMPETENCY OF CHIEF INTERNAL AUDITOR.						
i.	The audit committee is responsible for the appointment of chief internal auditor as well as other auditors.					
ii.	The audit committee establishes policies for hiring internal auditors.					

S.NO	STATEMENTS	1	2	3	4	5
iii.	The audit committee is responsible for managing training programmes for internal auditors					
iv.	The audit committee carries out training needs assessment for internal auditors and devises means of closing the gaps					

SECTION D: INTERNAL CONTROLS

11. The following statements describe how internal controls in your organization are enforced by internal audit. Please indicate the extent each statement applies to your organization. (Tick appropriately) Give your ratings in the scale of 1-5 (Where 1 = Not at all; 2 = Small extent 3 = Moderate extent 4 = Great extent 5 = Very great extent)

S.NO	STATEMENTS	1	2	3	4	5
SEGREGATION OF DUTIES						
i.	Segregation of functional responsibilities is done to create a system of checks and balances					
ii.	A system of authorization and record procedures adequately provide reasonable accounting control					
iii.	Policies and procedures are developed for prescribing and documenting the business and control processes to reflect changes in the business and control environment.					
iv.	No single individual have control over two or more phases of a transaction or operation.					
IT. CONTROLS						
i.	The IT systems are sufficient in providing approval hierarchies for staff at different levels.					
ii.	The IT systems security measures protect access to electronic resources.					

S.NO	STATEMENTS	1	2	3	4	5
iii.	The IT systems regulate authorized access to resources through security measures such as user IDs and passwords.					
HUMAN RESOURCES,						
i.	The organization has an effective automated time and attendance system that monitor staff clocking in and out.					
ii.	The systems ensure that all hours worked are accurately reported and that the payroll is correctly calculated and paid.					
iii.	The human resource management systems monitors staff allowances and captures any fraudulent activities					
OPERATIONAL PROCEDURES						
i.	The system verifies that all transactions posted were properly initiated and authorized					
ii.	The organization has budgetary controls mechanisms that ensure all allocations are within the budgets					
iii.	The organizations aligns its supply and demand to ensure no wastage of resources					
iv.	The maintenance department ensures that corrective measures are taken within the required timelines					

Appendix II: Data Collection Form on Performance of WSPs

1. Name of WSP _____

2. Years that WSP is operational zed _____

3. Number of water connection of WSP _____

4. Ratio of number of water connections of WSP in Rural_____%; Urban _____%

Item	Year	Year	Year	Year	Year
	2011	2012	2013	2014	2015
From WASREB (performance)					
1. Revenue sales					
2. Water coverage%					
3. Non-revenue water %					
4. Revenue collection efficiency %					
5. Staff efficiency %					
6. Metering ratio %					
7. Quality of water					
8. Number of hours of water supply in 24 hr day					
From audited financial statements					
1. Inputs					
• Staff emoluments					
• Operating and maintenance costs					

Appendix III: Sampling Frame (WSPs)

LIST OF WATER SERVICE *PROVIDERS* IN KENYA

1. Thika
2. Eldoret
3. Nairobi
4. Mombasa
5. Nakuru Town
6. Nyeri
7. Meru
8. Nanyuki
9. Embu
10. Muranga
11. Malindi
12. Kakamega Busia
13. Garissa
14. Nyahururu
15. Kikuyu
16. Kericho
17. Kiminyagu
18. Kilifi-Mariakani
19. Gusii
20. Tilibei
21. Sibo
22. Tavevo
23. Kwale
24. Nakuru Rural
25. Kisumu
26. Ruiru-Juja
27. Limuru
28. Mavoko
29. Isiolo
30. Lodwa
31. Kitui
32. Obolaisei
33. South Nyanza
34. Kiambu
35. Noltureshloitokitok
36. Machakos
37. Awatsi
38. Namanga
39. Kiambere Mwingi
40. Karuri
41. Kibwezi Makindu
42. Nyanas
43. Iten Tambach
44. Mwala
45. Yatta
46. Maralal
47. Wote
48. Lamu
49. Kapenguria
50. Olkalou
51. Naivasha
52. Narok
53. Mandela
54. Kapsabet Nandi
55. Eldamaravin
56. Matungulukangundo

57. Rumuruti
58. Gulf
59. Olkejuado
60. Nzoia
61. Mathira
62. Othaya Mukurweini
63. Muranga south
64. Gatundu south
65. Kahati
66. Imetha
67. Tetu Aberdare
68. Karimenu
69. Gatamathi
70. Ngandori Nginda
71. Gatanga
72. Nithi
73. Githunguri
74. Kyeni
75. Tuuru
76. Nyandarua
77. Murugi Mugumango
78. Muthambi 4k
79. Rukanga
80. Ndaragwa
81. Kikanamku
82. Mawingo
83. Nyasare
84. Kathiani
85. Engineer
86. Nyakanja
87. Mbooni
89 Tia mira
90 Upper chania
91 Ruiru Thau
92 Gitei
93 Ngagaka

(Source: WASREB)

Appendix IV: Reliability Statistics

Internal Audit Function Reliability Statistics

Variable	**No of Items**	**Alpha (α)**	**Comment**
Assurance Services	6	0.981	Reliable
Compliance Services	4	0.903	Reliable
Consulting Management	5	0.905	Reliable
Independence	2	0.802	Reliable
Objectivity	3	0.866	Reliable
Total	**20**	**0.967**	**Reliable**

Functions of Audit Committee Reliability Statistics

Variable	**No of Items**	**Alpha (α)**	**Comment**
Oversight on internal audit	6	0.891	Reliable
Provision of Resources	3	0.822	Reliable
Competency of chief internal Auditor	3	0.885	Reliable
Total	**12**	**0.924**	**Reliable**

Internal Controls Reliability Statistics

Variable	**No of Items**	**Alpha (α)**	**Comment**
Segregation of Duties	4	0.804	Reliable
Controls	3	0.902	Reliable
Human Resources	3	0.661	Reliable
Operational Procedures	4	0.871	Reliable
Total	**14**	**0.905**	**Reliable**

Variable	**No. Of items**	**Alpha (α)**	**Comment**
Assurance Services	6	0.981	Reliable
Compliance Services	4	0.903	Reliable
Consulting management	5	0.905	Reliable
Strategic Customer Relations Practices	6	0.949	Reliable
Overall	**33**	**0.900**	Reliable

Appendix V: Data Envelopment Analysis

NO	DMU	DMU Orde	Score	Dual Price (	Dual Price	Dual Price	Dual Price	Dual Price	Dual Price	Dual Price	Dual Price	Dual Price	Dual Price
1	Thika	1	1	-0.00149	0	0.00205	0	0.009733	0	0	0	0	0
2	Nakuru	2	0.878308	-0.00127	0	0.013568	0	0.002486	0	0	0.001077	0	0
3	Eldoret	3	1	-0.00126	0	0.002406	0	0	0	0	0.002747	0	0
4	Kisumu	4	0.925795	-0.00121	0.00293	0.01191	0	0	0	0	0.000795	0	0
5	Nairobi	5	0.865643	-0.00115	0	0.01355	0	0.001951	0	0	0.000906	0	0
6	Kakamega	6	0.877781	-0.00112	0	0.012594	0	0	0.006317	0	0.001041	0	0
7	Mombasa	7	0.149346	-0.00018	0	0.001548	0	0	0	0.00834	0	0	0
8	Nyeri	8	1	-0.00172	0.008054	0.011617	0	0	0	0	5.66E-05	0	0
9	Meru	9	0.999364	-0.00138	0	0.012804	0	0	0	0	0.000511	0.004312	0
10	Ruiru Juja	10	0.79596	-0.00117	0	0.014281	0.002708	0	0	0	0.000768	0	0
11	Nanyuki	11	0.875968	-0.00114	0	0.012786	0	0.001401	0.002615	0	0.000952	0	0
12	Nzoia	12	0.782874	-0.00109	0	2.56E-05	0	0	0	0.051177	0	0	0.004237
13	Embu	13	0.742057	-0.00103	0	0.011582	0	0	0.005809	0	0.000957	0	0
14	Nyahururu	14	0.833165	-0.00101	0	0.017003	0	0	0	0	0	0	0
15	Ngandori I	15	0.773815	-0.001	0	0.011245	0	0	0.00564	0	0.00093	0	0
16	Gatundu S	16	0.828571	-0.00099	0	0.014286	0	0	0	0	0.000857	0	0
17	Tetu	17	0.6978	-0.00094	0	0.008722	0	0	0	0	0.000348	0.002937	0
18	Othaya Mu	18	0.958923	-0.00089	0	0.014983	0	0	0	0	0	0	0
19	Malindi	19	0.620097	-0.00088	0	0.004517	0.003546	9.4E-05	0	0.032657	0	0	0
20	Kirinyaga	20	0.966667	-0.00087	0	0.014646	0	0	0	0	0	0	0
21	Sibo	21	0.993525	-0.00083	0	0.007137	0	0	0	0.038456	0	0	0
22	Kericho	22	0.64464	-0.00083	0.003963	0.005519	0	0	0	0	0	0	0
23	Murang'a	23	0.641532	-0.00079	0	1.86E-05	0	0	0	0.037092	0	0	0.003071
24	Kahuti	24	0.658726	-0.00076	0	0	0	0	0	0.035685	0	0.00296	0
25	Murang'a S	25	0.824242	-0.00072	0	0.012121	0	0	0	0	0	0	0
26	Garissa	26	0.519458	-0.00061	0	0.00066	0	0	0	0.028575	0	0.002168	0
27	Kwale	27	0.668966	-0.00054	0.001669	0	0	0	0	0.024919	0	0.000527	0
28	Kilifi Maria	28	0.453184	-0.00052	0	0.000563	0	0	0	0.024359	0	0.001848	0
29	Mathira	29	0.448653	-0.00041	0	0.006902	0	0	0	0	0	0	0
30	Gusii	30	0.326531	-0.0004	0	0.005772	0	0	0	0	0.000346	0	0
31	Imetha	31	0.570898	-0.00032	0	0.002751	0	0	0	0.014826	0	0	0
32	Tavevo	32	0.277712	-0.0003	0	0.002579	0	0	0	0.0139	0	0	0
33	Nakuru Ru	33	0.271236	-0.00021	0	0.001806	0	0	0	0.00973	0	0	0
34	Nithi	34	1	-0.00132	0.006181	0.008916	0	0	0	0	4.35E-05	0	0
35	Karimenu	35	0.952525	-0.00123	0	0.020707	0	0	0	0	0	0	0
36	Isiolo	36	0.820295	-0.00111	0	0.001202	0	0	0	0.051997	0	0.003945	0
37	Ngagaka	37	0.753639	-0.00111	0	0.001104	0	0	0.019063	0.041715	0	0	0
38	Limuru	38	0.789904	-0.0011	0	0	0	0	0	0.051649	0	0	0.004284
39	Mavoko	39	0.893757	-0.0011	0	0.009458	0	0	0	0.050965	0	0	0
40	Karuri	40	0.747973	-0.00104	0	0	0.000246	0	0	0.048266	0	0	0.003917
41	Kitui	41	0.665248	-0.00098	0	0	0	0	0.017655	0.036511	0	0	0
42	Githunguri	42	0.867025	-0.00094	0	0.008082	0	0	0	0.043552	0	0	0
43	Kiambu	43	0.785678	-0.00089	0	0.000963	0	0	0	0.041691	0	0.003163	0
44	South Nya	44	0.691113	-0.00076	0.003	0	0.000233	0	0	0.034362	0	0	0
45	Kikuyu	45	0.631475	-0.0007	0	0.000758	0	0	0	0.032791	0	0.002488	0
46	Kibwezi Ma	46	0.697147	-0.0007	0	0	0	0	0	0.032868	0	0	0.002726
47	Kyeni	47	0.689394	-0.00065	0	0.010943	0	0	0	0	0	0	0
48	Gatamathi	48	0.770202	-0.00061	0	0.010269	0	0	0	0	0	0	0
49	Tillibei	49	0.621689	-0.00058	0	0.004987	0	0	0	0.026873	0	0	0
50	Ladwer	50	0.440531	-0.00057	0	0.008225	0	0	0	0	0.000494	0	0
51	Oloolaiser	51	0.608017	-0.00052	0	0.000563	0	0	0	0.024359	0	0.001848	0
52	Tuuru	52	0.677959	-0.00051	0	0.004385	0	0	0	0.023629	0	0	0
53	Amatsi	53	0.703754	-0.00042	0.001708	0	0	0	0	0.019279	0	0	0
54	Machakos	54	0.346402	-0.00037	0	0.003181	0	0	0	0.017143	0	0	0
55	Gatanga	55	0.293651	-0.00037	0	0.005339	0	0	0	0	0.00032	0	0
56	NolTuresh	56	0.437446	-0.00021	0	0.001806	0	0	0	0.00973	0	0	0
57	Embe	57	0.798536	-0.00106	0	0	0	0	0.019096	0.039492	0	0	0
58	Muthambi	58	0.711077	-0.00099	0	0	0.000234	0	0	0.045945	0	0	0.003728
59	Rukanga	59	0.959596	-0.00095	0	0.015993	0	0	0	0	0	0	0
60	Murugi Mu	60	0.667848	-0.00093	0	2.19E-05	0	0	0	0.043665	0	0	0.003615
61	Kiambere	61	1	-0.000872	0	0.0075	0	0	0	0.040417	0	0	0
62	Lamu	62	0.818839	-0.00087	0.003434	0	0.000267	0	0	0.039336	0	0	0
63	Nyakenja	63	0.702478	-0.00082	0	0	0	0	0	0.036796	0	0.003296	0
64	Nyasare	64	0.940927	-0.0008	0	1.88E-05	0	0	0	0.037561	0	0	0.003109
65	Olkalou	65	0.715669	-0.00079	0	0	0	0	0	0.037094	0	0	0.003076
66	Mawingo	66	0.596628	-0.00079	0	0.009308	0	0.00134	0	0	0.000622	0	0
67	Ndaragwe	67	0.942779	-0.00078	0	0.000844	0	0	0	0.036539	0	0.002772	0
68	Kapsabet	68	0.570756	-0.00076	0	0.003972	0.003138	0	0	0.028056	0	0	0
69	Tachasis	69	0.542867	-0.00073	0	0.000726	0	0	0.012537	0.027434	0	0	0
70	Kapenguri	70	0.971279	-0.00069	0	0.005933	0	0	0	0.031969	0	0	0
71	Maralal	71	0.975452	-0.00067	0	0.005761	0	0	0	0.031043	0	0	0
72	Namanga	72	0.43768	-0.00063	0	0	0	0	0	0.029581	0	0.002453	0
73	Matungulu	73	0.87933	-0.00058	0	0.004987	0	0	0	0.026873	0	0	0

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