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**INFLUENCE OF CORPORATE GOVERNANCE PRACTICES ON  
PERFORMANCE IN KENYA'S PUBLIC SECTOR: A SURVEY OF SELECTED  
NATIONAL GOVERNMENT MINISTRIES**

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**ABSTRACT**

*Corporate governance has become an issue of global significance. Globally, the public sector plays a central role in socio-economic development but the sector has however been affected by globalization, public sector reforms, regional and international partnerships among other factors. Kenya's public sector organizations need good governance in order to realize efficiency and better service delivery as enshrined in Vision 2030 that envisages new structure of governance that can only be achieved in an environment of good corporate governance practices. The general objective of this study was to investigate the influence of corporate governance practices on performance in Kenya's public sector. Quantitative data was analyzed descriptively while inferential statistics employed regression analysis to test hypotheses. The target population in this study comprised of selected government offices and respondents was senior management employees working in those ministries. An appropriate sample was determined through stratified random sampling approach. Primary data was collected using structured questionnaires. The analysis was done using SPSS. The results were presented using tables and corresponding narratives. Linear regression analysis revealed a positive and significant relationship between leadership skills and performance. The study thus rejected the first null hypothesis and revealed that there is a positive significant relationship between leadership skills and performance in Kenya's public sector. It was also established that risk management is a significant predictor of performance. The study thus rejected the second null hypothesis and revealed that there is a positive and significant relationship between Risk management and performance in Kenya's public sector. A positive and significant relationship between transparency and performance was further established, hence rejecting the third null hypothesis and confirming that there is a positive relationship between transparency and performance in Kenya's public sector. A positive and significant relationship was also established between accountability and performance, hence the study rejecting the fourth null hypothesis and revealing that there is a positive significant relationship between accountability and public sector performance in Kenya. The test for moderation revealed no significant moderator effect and concluded that work environment is not a significant moderator of relationship between corporate governance practices and performance in Kenya's public sector.*

**Key Words:** Leadership Character, Risk Management, Transparency, Accountability, Work Environment

## **1. INTRODUCTION**

A myriad of definitions have been given to the term corporate governance, varying considerably between jurisdictions. CIPFA (2004) defined good governance in the public services as an assurance that an organization or partnership fulfills its overall purpose, achieves its intended outcomes for citizens and service users, and operates in an effective, efficient and ethical manner. The Institute of Internal Auditors (IIA) (2012) defined public sector governance as encompasses the policies and procedures used to direct an organization's activities to provide reasonable assurance that objectives are met and that operations are carried out in an ethical and accountable manner. According to the International Monetary Fund (IMF) (2007) good governance refers to the management of government in a manner that is essentially free of abuse and corruption, and with due regard to the rule of law.

When applied to the public sector, the term governance refers to efforts geared towards promotion of efficient, effective and sustainable development that contributes to welfare of society by creating wealth, employment and solution to the emerging challenges such as poverty, devastating effects of HIV Pandemic and among others (Njoya, 1999). Brown, Caylor and King (2004) studying on public sector reforms viewed corporate governance as an aspect of strategy. Corporate governance remains an issue of global significance which has attracted worldwide attention because of its apparent importance in both public and private sector organizations. Scholars like (Nam, Manyuru and Onyango, 2002; Sanda, Milkailu and Garba, 2005; King, 2002) underscored the importance of corporate governance practices as a strong determinant of organizational performance whose strategic importance cannot be overstated.

A World Bank report (2002) noted that until early 2000, Kenya's economic performance was poor with an average growth of close to 1 %. During this period Kenya's public sector was largely none responsive to the needs of the citizenry with a perception that service delivery

could not be measured. The systems of accountability and disclosures were not well defined and service delivery benchmarks were absent making performance tracking difficult. The introduction of the performance management approach in Kenya's public sector in the early 2000 was intended to improve delivery of public services and spur economic growth. Since then, corporate governance has increasingly become a subject of great debate both in the realm of academia, political leadership and private sector practice.

Various studies have been conducted in the broader area of corporate governance in Kenya (Ngugi, 2007; Gatauwa, 2008; Matengo, 2008) and their findings points a positive link between adoption of corporate governance and organizational performance. These studies notwithstanding however, there is need to determine how corporate governance practices influence performance in Kenya's public sector and especially, the National government ministries. This research therefore unveiled where the national government is in terms of performance occasioned by adoption of corporate governance and bring forth ways of further improvement so as to realize the expectations of the citizens and global competitiveness. It is against this backdrop that the present study sought to investigate the influence of corporate governance practices on performance in Kenya's public sector.

### **1.1 Global Perspective of Corporate Governance**

Analysis of the tremendous performance of developed economies such as USA, Britain and Canada in the 1970s was attributed to the adoption of corporate governance practices. Nam *et al.* (2002) found out that the economies of these countries realized a growth level of between 6% and 8% due to the introduction of measures and practices that enhanced accountability of public processes. In the UK the Audit Commission for Local Authorities (ACLA,2003) noted that implementation of corporate governance practices up scaled delivery of public services and enhanced engagement with service users.

A comparative study of economic growth and performance trends of the developed and developing countries in the 1980s recorded similar findings with the latter performing poorly. Most Countries in Africa, Asia and Latin America recorded declining economic performance and growth trends because their systems of governance were anchored on traditional structures which were purely bureaucratic, rigid and non-result oriented (Kaufmann, 2003).

### **1.2 Corporate Governance in Africa**

The concept of governance has existed for centuries but many African economies began to pay particular attention to its ideals in the beginning of the 1980s. The term corporate governance was first mentioned in a 1989 World Bank report on sub-Saharan Africa and Since then, many donor agencies have been putting a lot of emphasis on its adoption both in the public and private sectors (Qudrat-IElachi, 2009). The first African country to embrace corporate governance principles in its private sector was South Africa. The practice was adopted in the public sector much later. Kings (1994) while studying on corporate governance in South Africa's public sector noted that compliance with laws and regulations were essential for public sector performance and efficient functioning of systems.

### **1.3 Corporate Governance in Kenya**

The practices of good corporate governance started gaining much prominence in Kenya towards the end of the 21st century when citizens started agitating due to poor performance and rampant corruption both in the public and private sector organizations (Ekadah and Mboya, 2011). The Centre of Corporate Governance (CCG) has been the greatest advocate of corporate governance in Kenya. Corporate governance framework in Kenya was started in 1999 when the Centre for Corporate Governance (CCG) developed a framework which was voluntary for companies to adopt. The framework was further taken up by the Capital Markets Authority (CMA) in 2000 as

a draft.

#### **1.4 Overview of the Kenyan Public Sector**

Government Ministries are the basic functional units of National Government in Kenya, which translate government policies into action and exercises oversight role over the management of both parastatals and SAGAS. Ministries are headed by Cabinet Secretaries who are in charge of policy formulation and the Principal Secretaries who are the accounting officers in charge of all administrative core functions and activities of a given Ministry. The Cabinet Secretary and Principal Secretary are not elected leaders. They are nominated by the President, vetted and approved by the National Assembly. All other employees are civil servants employed by the Public Service Commission (GOK, 2013). Parastatals are run by a Board of Directors appointed by the President upon approval by the National Assembly and the Managing Director who is competitively recruited. In the new system of devolved government, these institutions are expected to play even a more crucial role towards achievement of Kenya's Development blue print as envisioned in Vision 2030.

## **2. LITERATURE REVIEW**

### **2.1 Theoretical Review**

The agency, stewardship and Transactional cost are the main theories underlying the concept of corporate Governance.

#### **2.1.1 Agency Theory**

This theory rests on the assumption that the role of organizations- whether public or private is to maximize the wealth of their owners or shareholders (Blair, 1995). The agency theory holds that most businesses operate under conditions of incomplete information and uncertainty. Such conditions expose businesses to two agency problems namely adverse selection and moral hazard. The idea of agency theory can be attributed to Coase (1937) but the ideals of the theory have not only been applied in the private sector but also in public enterprises. The citizenry as

stakeholders are increasingly demanding for accountability and transparency from the people elected as leaders and those employed to serve in the public owned enterprises.

### **2.1.2 Stewardship Theory**

The stewardship theory, also known as the stakeholders' theory, adopts a different approach from the agency theory. It starts from the premise that organizations serve a broader social purpose than just maximizing the wealth of shareholders. The stakeholders' theory holds that corporations are social entities that affect the welfare of many stakeholders where stakeholders are groups or individuals that interact with a firm and that affect or are affected by the achievement of the firm's objectives (Donaldson & Preston, 1995; Freeman, 1984). Successful organizations are judged by their ability to add value for all their stakeholders. Some scholars consider the natural environment to be a key stakeholder (Starik and Rands, 1995; Dunphy et al., 2003). Stakeholders can be instrumental to corporate success and have moral and legal rights (Donaldson & Preston, 1995; Ulrich, 2008).

### **2.1.3 Transactional Cost Theory**

This theory focuses how business entities ensure the supply of inputs on the one hand and reach the final consumer on the other hand: rather than production functions, firms are regarded here as governance structures (Whinston, 2001). Transaction cost theory concentrates on the relative efficiency of different exchange processes. An intermediate step between pure market exchange and vertical integration is the use of short term and long term contracts. According to this theory, firms evaluate the relative costs of alternative governance structures (spot market transactions, short term contracts, long-term contracts, vertical integration) for managing transactions.

### **2.1.4 Situational Leadership Theory**



This theory was developed by Prof. Paul Hersey and Ken Blanchard in 1970. The fundamental underpinning of the situational leadership theory is that there is no single best style of leadership. Effective leadership is task-relevant, and the most successful leaders are those who adapt their leadership style to the maturity. They set high but attainable goals, willingness and ability to take responsibility for the task, and relevant education or experience of an individual or a group of individuals for the task they are leading. Effective leadership varies, not only with the person or group that is being influenced, but it also depends on the task, job or function that needs to be accomplished.

## **2.2 Empirical Literature Review**

### **2.2.1 Corporate Governance and organizational performance**

Previous empirical studies have provided the nexus between corporate governance and firm performance (Claessens et al. 2002, Klapper and Love, 2002, Gompers et al. 2003 and Sandaet al. 2003). Other scholars like Bebchuk and Cohen, (2004) and Becht et al, (2002) have shown that well-governed firms have higher firm performance. The main characteristic of corporate governance identified in these studies include board size/ board composition, and whether the CEO is also the board chairman. Empirical studies done on the effect of board membership and firm performance shows mixed results. While some studies find better performance for firms with boards of directors dominated by outsiders (Ellington, 1996; Weisbach, 1988), others find no such relationship in terms of accounting profits or firm value (Bhagat & Black, 2002, Hemalin & Weisbach, 2008).

### **2.2.3 Leadership character and Performance in the Public Sector**

A leader can make or break an organization depending on his traits on leadership. While conducting a research on leadership character and corporate governance, Gandz, Sejjits and Stephenson (2010), identified competencies, commitment and character to be good qualities a



leader should possess in order to steer any organization to greater heights. Competency can be defined as what a person is capable of doing. It links an individual intellect with organizational, people and strategic competencies. Character of a leader determines how he perceives and analyzes the contexts in which he operates. It also determines how he uses the competencies he has, shapes the decisions he makes and the implementation and evaluation of these decisions (Gandz et al. 2010).

#### **2.2.4 Risk Management and Performance in Public Sector**

Risks are uncertainties that can impinge on an organization's ability to achieve its objectives and can result in many interdependent outcomes both negative and positive. Anything that prevents the achievement of an institutional objective is a risk. According to ALARM (1998) effective corporate governance mechanisms must assist an organization in mitigating possible risks so as to achieve the intended performance targets. Corporate governance practices in the public sector enable public entity to have direction, authority and oversight management so as to overcome probable risks. The CIPFA report (1994) noted that risk management requires a holistic and integrated approach and is one of the keystones to achieving effective corporate governance.

#### **2.2.5 Transparency and Performance in the Public Sector**

Transparency is about being open. It is about providing stakeholders with complete confidence regarding the decision making processes and action of public sector entities in making their activities. Effective corporate governance mechanisms must contribute towards transparency and accountability. Singh (2005) explains that corporate governance provides adequate checks and balances, transparency and disclosures which are necessary for accountability. Effective corporate governance requires commitment and openness especially from top management and is more than just putting in place structures such as committees and reporting mechanisms to

achieve desired results. Such structures are only a means for developing a more credible corporate governance framework and are not ends in themselves.

### **2.2.6 Accountability and Performance in the Public Sector**

Accountability can be measured by using internal control mechanisms such as controlling corruption practices. Corporate governance is one of the many effective tools that can be used in reducing incidences of corruption. It is concerned with the processes, systems, practices and procedures that govern institutions, the manner in which these rules and regulations are applied and followed. Good corporate governance system spells out the procedures for carrying out activities and responsibilities in an organization and does not leave room for ambiguity of roles and power (Mensah et al., 2010). Public sector organizations with weak internal control mechanisms and poorly remunerated officials provide receptacles for unethical practices.

### **2.2.7 Work Environment and performance in the public sector.**

The environment in which employees operate directly affects service delivery and the execution of programmes and activities. Good corporate governance can be achieved if the work environment is devoid of incidences such as negative attitude to work corruption and nepotism. A conducive work environment characterized by freedom of expression and thought, teamwork and respect among employees will positively impact on the effectiveness of good corporate governance.

## **3. METHODOLOGY**

The study identifies the procedures and techniques that were used in the collection, processing and analysis of data. The chapter comprises the following sub-topics; research design, target population, research instruments, the sample and sampling procedures, data collection procedures and data analysis procedures.

The study is based on quantitative data which was statistically analyzed hence the adoption of

positivism philosophy. The descripto-explanatory research design was used to describe the characteristics of the variables and at the same time investigate the cause effect relationship between the variables. The target population for this study was the senior government employees working in national government ministries based in Nairobi who are also the departmental Heads in their respective ministries. As at April 2011 (GOK, 2011), there were a total of 7750 employees working in top management level across all government ministries whom the, study focused on. This is as presented in table 3.1.

Two stage stratifications were employed and therefore stratified random sampling was used to select the subjects of interest from the population. The researcher used random selection of each respondent within each stratum. The second stratification involved selecting all senior civil servants within job group N and above working in the national government ministries. The job classification is done by Kenya Public Service Commission.

The desired sample size for the study is mathematically determined as follows; Sample size for infinite population (where population is greater than 50000) is calculated using the following formula:

$$n = \frac{p(1 - p)Z^2}{e^2}$$

Where:

**n** = Sample Size

**Z**= 1.96 is the value that corresponds to 95% level of confidence

**p**= percentage of population with desired characteristics expressed as a decimal (in this study, is 0.5)

**e<sup>2</sup>**= Margin of error

On average, every government office is occupied by four (4) officers. To ensure independence of respondents, one person will be randomly picked from each office, implying  $7750/4= 1937$  offices. Applying the above formula and with a population of 1937 offices, and the anticipated

confidence level of 95% and the margin of error of  $\pm 5$  percentage (assuming that 45% to 55% of the offices have the desired characteristics, that is  $50\% \pm 5\%$  practice the issues under the study, we would write this interval estimate as the sample was calculated as follows:

$$\text{Sample size (n)} = \frac{1.96^2 \times 0.5 \times 0.5}{0.05 \times 0.05} = 384 \text{ Offices}$$

Since the population of study was less than 50,000, the adjusted sample size was as follows:

$$n(\text{adj}) = \frac{nN}{n+N} = \frac{384 \times 1937}{384 + 1937} = 320 \text{ offices}$$

the sample size was calculated to be 320 offices.

The researcher applied stratified random sampling method to determine the size of each category of staff under study.

$$\text{Top Management(TM)} = \frac{55 \times 320}{7750} = 2 \text{ offices}$$

$$\text{Upper Middle Management (UMM)} = \frac{1053 \times 320}{7750} = 44 \text{ offices}$$

$$\text{Lower Middle Management (LMM)} = \frac{6642 \times 320}{7750} = 274 \text{ offices}$$

The representation of respondents from staff mentioned above was determined by using proportional stratified sampling based on staff category as explained in Table 3.2.

**An officer was randomly picked from each of the 320 offices. Questionnaires were administered by trained research assistants to gather data from the respondents. The three hundred and twenty questionnaires were distributed to the targeted civil servants. Both primary and secondary data was collected in completing this study. Primary data was collected using questionnaires that measure the influence of corporate governance practices on performance in Kenya's public sector. The questionnaires had both closed and open ended questions.**

The researcher carried out a pilot study to pre-test and validate the questionnaire. The researcher

selected a pilot group of 25 individuals from the target population at the selected government ministries to test the reliability of the research instrument. The results obtained enable the researcher to adjust some questionnaires so that they could be clearly understood by respondents.

Table 3.3 shows how the results of the reliability analysis which involved 25 respondents were calculated. The questionnaires were subjected to a sample of 25 staff that was not studied when the researcher conducted his final study. The purpose of reliability analysis is to measure the internal consistency of the questionnaire. The results in the above table indicates that an alpha value of 0.864 was calculated on the first set of questions answering the first variable of leadership style; 0.876 was calculated on the second variable of Risk management; 0.877 was calculated on the third variable of Transparency while 0.827 was obtained from the calculation of the fourth variable of Accountability. All these results indicate that the instrument was reliable because the alpha value coefficient was above 0.7 as recommended by Mugenda and Mugenda (2003).

The study used both descriptive and inferential statistics for data analysis. Descriptive statistics was measured using mean, standard deviations and percentages while inferential statistics was used to examine the relationship between corporate governance practices and performance in Kenya's public sector. Inferential statistics such as correlation and regression analysis was used to establish the nature and magnitude of the relationships between the variables and to test the hypothesized relationships. The research hypothesis was tested at 95% level of confidence in order to provide drawing conclusions. Pearson's product moment correlation( $r$ ) was used to show the nature and strength of the relationship. Coefficient of determination( $R$ ) was also used to measure the amount of variation in the dependent variable explained by the independent variable. Other tests such as reliability tests (Cronbach Alpha), spearman's correlation ( $\rho$ )

tests were performed to have a robust understanding on the quality of the data collected.

The researcher subjected the collected data to normality and linearity tests. To check for normality, the study applied skewness and kurtosis statistic to detect the departure from normality as recommended by Myoung (2008). Linearity of variables were tested using correlation coefficients as recommended by Cohen, West & Aiken,(2003). To check for correlated variables, multicollinearity was tested using variance inflation factor (VIF).Variance inflation factor quantifies severity of the multicollinearity in a regression analysis and it provides an index that measures how much the variance of an estimated regression is increased because of multicollinearity.

## **4. RESULTS**

### **4.1 Response Rate**

A total of 350 questionnaires were administered to the respondents and out this, 325 were accurately filled and returned which represented 93% response rate. Since the total number of responses exceeded the minimum sample size of 320, the response rate with respect to the study sample was 100%. This high response rate increases confidence for the generalization of these study findings.

### **4.2 Hypothesis Testing Results**

Hypotheses H<sub>01</sub>, H<sub>02</sub>, H<sub>03</sub> and H<sub>04</sub> were tested to ascertain the influence of the predictor variables (leadership skills, Risk management, Transparency and Accountability) on Kenya's public sector performance. To estimate the model fit, step by step method of multiple regression analysis was used as recommended by Field (2009). All the Hypotheses were tested at 5%levels of significance as a statistic base for drawing conclusions.

#### **4.2.1 Testing of Hypothesis 1; Influence of Leadership Skills and performance in Kenya's public sector.**

The model shows that leadership skills ( $X_1$ ) is a significant predictor of performance (Y) ( $F(1,312)=104.195, p<0.001$ ) as depicted in Table 4.1(b) with R squared = 0.250 (Table 4.1a). This implies that leadership skills ( $X_1$ ) on its own explains 25% of the variation in performance (Y), while 75% is explained by other variables not fitted in this model. Under this model, the influence of leadership skills on performance is significant and positive ( $\beta=0.492$ ,  $t=10.2$ ,  $p<0.001$ ) as shown in Table 4.1(c).

The equation shows that a unit increase in Leadership skills index would result in a 0.492 increase in institutional Performance index (Y). The study finding rejects the null hypothesis at 5% level of significance and reveals that there is a positive significant relationship between leadership skills and performance in Kenya's public sector. The results of the study is in consistent with that of Gandz et al, (2010) who identified competencies, commitment and character as good qualities a leader should possess in order to steer any organization to greater heights. From the theoretical framework, the study applied social capital theory which attempts to capture how people interact with each other and how these social interactions in turn yields benefits for individuals and collectively for the benefit of the organizations they work for (Brunie, 2009; Claridge, 2007).

#### **4.2.2 Testing of Hypothesis 2; Influence of Risk management and performance in Kenya's public sector.**

The model shows that risk management ( $X_2$ ) is a significant predictor of performance (Y) ( $F(1,312)=81.45, P<0.001$ ) as shown in Table 4.2 (b) with R squared =0.207. This implies that risk management ( $X_2$ ) on its own explains 20.7% of the variation in performance (Y) while 79.3% is explained by other variables not fitted in the model. Under this model, the influence of risk management on performance is significant and positive ( $\beta=0.422$ ,  $t=9.03$ ,  $p<0.001$ ) as



shown in table 4.2(c.). The equation shows that a unit increase in risk management index would lead to 0.422 increases in public sector performance index. The study finding rejects the null hypothesis at 5% level of significance and reveals that there is a positive and significant relationship between Risk management and performance in Kenya's public sector. This Hypothesis relied on the theoretical proposition of the Transactional Cost Theory which recognizes the element of uncertainty.

These results are in line with those of Fone et al, (2000) who explained that it is impossible for an organization to achieve effective corporate governance without effective risk management strategies. Similar sentiments were observed by O'Brian (2007) who noted that in order to attain and sustain superior performance in an organization, leadership must be in a position to identify risks and establish ways of managing those risks.

#### **4.2.3 Hypothesis 3; Influence of Transparency and performance in Kenya's public sector.**

The linear regression analysis  $Y = \beta_0 + \beta_3 X_3$  shows a relationship between the dependent variable (Kenya's public sector performance) and independent variable (Transparency). The coefficient of determination ( $R^2$ ) shows the degree of association between Transparency and performance in Kenya's public sector. The results of the linear regression indicate that transparency ( $X_3$ ) is a significant predictor of Y ( $F(1,311) = 109, p < 0.001$  (Table 4.3(b) with  $R^2 = 0.260$  (Table 4.3(a)). Under this model, the influence of transparency index ( $X_3$ ) on performance index (Y) is significant and positive ( $\beta = 0.461, t = 10.440, p < 0.001$ ) Table 4.3(c).

This Implies that for one unit increase in transparency index would lead to a 0.461 increase in public sector performance index. The study thus rejects the null hypothesis at 5% level of significance and states that there is a positive relationship between transparency and performance in Kenya's public sector. The result supports the observations made by Okpara

(2011), who conducted a similar research on effectiveness of corporate governance practices in Nigeria and found that lack of transparency is a major hindrance to the implementation and promotion of corporate governance in Nigeria.

#### **4.2.4 Hypothesis 4; Influence of Accountability and performance in Kenya's public sector.**

The model shows that accountability ( $X_4$ ) is a significant predictor of performance (Y) ( $F(1,312) = 93.147, p < 0.001$ ) as shown in Table 4.4(b) with  $R^2 = 0.230$  (Table 4.4(a)). This implies that accountability ( $X_4$ ) on its own explains 23% of the variation in performance (Y) while 77% is explained by other variables not fitted in this model. Under this model, the influence of accountability on performance is significant and positive  $\beta = 0.466, t = 9.651, p < 0.001$ ). The summary results are stated in table 4.4 (a, b and c)

The results of the linear regression indicate that a unit increase in accountability index would result in a 0.466 increment of public sector performance index. The study finding rejects the null hypothesis at 5% level of significance and reveals that there is a positive significant relationship between accountability and public sector performance in Kenya. Since the coefficient of accountability is positive and significant, it can be stated that accountability has a positive effect on performance in Kenya's public sector. The finding supports a research done by Mensah et al, (2010) who found a close relationship of accountability and quality of governance in the performance of Ghana's public sector. Similar report was issued by the United Nations in 1996.

#### **4.3 Combined influence of the variables on public sector performance**

**The findings in Table 4.5 show that the predictor variables (leadership skills, risk management, transparency and accountability are significant predictors of performance (Y)  $F(4,308) = 40.785, p < 0.001$  as shown in Table 4.5(b) with  $R^2 = 0.346$  (Table 4.5a). This implies that all the independent variables studied jointly explain 34.6% variations in the dependent variable (performance). The rest (65.4%) can be explained by other variables not included in this study (error term).**

The findings were based on the assumption that other variables remain constant. It can also be observed that among the predictor variables, leadership skills had the highest beta value ( $\beta = 0.254$ ,  $t = 4.199$ ,  $p$ -value,  $< 0.001$ ) followed by transparency ( $\beta = 0.225$ ,  $t = 3.767$ ,  $p$ -value  $< 0.001$ ). Accountability had the third highest beta value ( $\beta = 0.159$ ,  $t = 2.548$ ,  $p$ -value  $< 0.001$ ). The predictor variable with the least beta value was risk management ( $\beta = 0.024$ ,  $t = 0.370$ ,  $p$ -value  $< 0.001$ ). The significant variables were extracted by applying the t-test and beta values to the independent variables at 0.01% level of significance and the results of the test were as depicted in Table 4.5(c).

#### **4.4 Moderating effect**

Each variable was centered to address the problem of multicollinearity (Centering = variable - mean of the variable). Centering predictor means subtracting a constant from every value of a variable. Its role is to redefine the 0 point for the predictor to be whatever value is subtracted (Richard Williams, university of Notre Dame, <http://www3.nd.edu/stats2/153> dated 20.2.2015). The model  $Y = \beta_0 + \beta_1 X_1 + \beta_2 Z + \beta_{1Z} X_1 Z + \epsilon$  was fitted to the data in which each term was included hierarchically. The three models are presented in Table 4.6(a).

From Table 4.6(b), it is clear that the three models were significant, where in each case,  $p < 0.001$ . From Table 4.6(a), it was noted that the change in R squared was significant from model 1 to model 2 (change = 0.071,  $P < 0.001$ ) but not in model 3 (change = 0.003,  $p = 0.231$ ). This implies that Z is a significant predictor of Y in presence of leadership character  $X_1$  but since the interaction term is not significant in the model, work environment (Z) is not a significant moderator of the relationship between leadership character ( $X_1$ ) and performance (Y).

Table 4.6(c) gives the details of the individual coefficients and it is evidence that all coefficients are significantly different from zero except the coefficient of the interaction term and this shows

that work environment (interaction) is not a significant moderator between the predictor and the dependent variables of this study. This study therefore fails to reject the null hypothesis (H<sub>0</sub>).

Results from table 4.7(b), reveal that all the three models were significant at 0.01 level of significance. Further, as presented in table 4.7(a), at 0.01 level of significance, it was established that R square change from model 1 to model 2 was significant (change = .080,  $P < 0.01$ ) but not in model 3 (change = .014,  $p = .013$ ). This is of the implication that Z is a significant predictor of Y in presence of Risk Management X<sub>2</sub>. The interaction term is however not significant in the model, therefore work environment (Z) is not a significant moderator of the relationship between Risk Management (X<sub>2</sub>) and performance(Y).

It is further evident in table 4.7(c) that except the coefficient of the interaction term, all coefficients are significantly different from zero. This further indicates that work environment (interaction) is not a significant moderator between the predictor and the dependent variables of this study. This study therefore fails to reject the null hypothesis (H<sub>0</sub>).

As presented in table 4.8(b), all the three models were significant at 0.01 level of significance. It is also further revealed in table 4.8(a), that there was a statistically significant R square change from model 1 to model 2 (change = .068,  $P < 0.01$ ) but not in model 3 (change = .007,  $p = .081$ ), indicating that Z is a significant predictor of Y in presence of Transparency X<sub>3</sub>. As the interaction term is however not significant in the model, it is deduced that work environment (Z) is not a significant moderator of the relationship between Transparency (X<sub>3</sub>) and performance(Y).

**Also evidenced in table 4.8(c) the coefficient of the interaction term was not significantly different from zero, as opposed to all the other coefficients. This further shows that work environment (interaction) is not a significant moderator between the predictor and the dependent variables of this study. This study therefore fails to reject the null hypothesis (H<sub>0</sub>).**

**All the three models presented in table 4.9(b) were significant at 0.01 level of significance. There was also a statistically significant R square change from model 1 to model 2 (change**

**=.055,  $P < 0.01$ ) but not in model 3 (change = .004,  $p = .193$ ) as shown in table 4.9(a). This indicates that Z is a significant predictor of Y in presence of Accountability  $X_4$ . The interaction term is however not significant in the model, revealing that work environment (Z) is not a significant moderator of the relationship between Accountability ( $X_4$ ) and performance(Y).**

**As also evidently shown in table 4.9 (c) except the coefficient of the interaction term, all the other coefficients were significantly different from zero, further showing that work environment (interaction) is not a significant moderator between the predictor and the dependent variables of this study. This study therefore fails to reject the null hypothesis (H0).**

## **5. CONCLUSIONS**

This study makes an original contribution to the literature since it is the first comprehensive investigation on corporate governance in Kenya's National government ministries. Past researchers have only studied governance mechanisms in private sector organizations. This is the first study that investigated how corporate governance practices influence performance of Kenya's National government ministries. The study is important as it provides new insights into governance and performance of public sector as a service sector organization. Furthermore, propositions relevant to the factors affecting the performance of public sector are discussed.

The findings of this research study show that corporate governance practices namely leadership skills, risk management, transparency and accountability have a direct effect on organizational performance. This is a lesson that should be learned by top government organs in Kenya that as they strive to archive the 2030 strategic vision, they should lay more emphasis on the principles and practices of corporate governance.

## **6. RECOMMENDATIONS**

In the light of this study, a number of policy implications can be drawn in order to enhance performance in Kenya's public sector by applying corporate governance practices. The government should formulate and implement a legal framework to ensure effective and functional internal control mechanisms in place in all its institutions.

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**APPENDICES**

**Table 3.1 Distribution of the Target Population**

| Category per | Job Group                  | No. of employees | Percentage |
|--------------|----------------------------|------------------|------------|
|              | Top Management (T U&V)     | 55               | 0.7        |
|              | Upper middle mgt( Q,R & S) | 1,053            | 13.6       |
|              | Lower middle mgt( N&P)     | 6,642            | 85.7       |
| <b>Total</b> |                            | <b>7,750</b>     | <b>100</b> |

Source; GOK (2011)

**Table 3.2: Sample Units from Each Staff Category**

| Category                      | Population  | Sample             |
|-------------------------------|-------------|--------------------|
| Top management                | 155         | 2                  |
| Upper middle level management | 1053        | 44                 |
| Lower middle level management | 6642        | 274                |
| <b>Total</b>                  | <b>7750</b> | <b>320 offices</b> |

**Source: (GOK, 2011)**

**Table 3.3: Reliability Statistics Results**

| Independent variables             | No. of questionnaire<br>Items | Alpha score | Comment  |
|-----------------------------------|-------------------------------|-------------|----------|
| Leadership (X <sub>1</sub> )      | 14                            | 0.864       | Reliable |
| Risk Management (X <sub>2</sub> ) | 11                            | 0.876       | Reliable |
| Transparency (X <sub>3</sub> )    | 20                            | 0.877       | Reliable |
| Accountability (X <sub>4</sub> )  | 7                             | 0.827       | Reliable |

**Source: (Survey data, 2015), n=25**

**Table 3.4 Summary of Data Analysis Techniques**

| Research objectives  | Hypothesis   | Statistical Model   | Hypothesis test  |
|--|--|---|--|
| <p>Research objective 1;<br/>To determine the relationship between leadership character and performance in Kenya's public sector</p> | <p>Hypothesis 1;<br/>H<sub>01</sub>; There is no significant relationship between leadership character and performance</p> | <p><math>Y = \beta_0 + \beta_1 X_1 + \varepsilon</math><br/>where:<br/>Y= performance<br/><math>\beta_0</math>=constant<br/><math>\beta_1</math>=Coefficient of X<sub>1</sub><br/>X<sub>1</sub>=Leadership<br/><math>\varepsilon</math> =Error term</p>   | <p>H<sub>0</sub> =0<br/>H<sub>a</sub> ≠0<br/>Reject H<sub>0</sub> if p&lt;0.05,<br/>Otherwise fail to reject the H<sub>0</sub></p> |
| <p>Research objective 2;<br/>To establish the relationship between risk management and performance in Kenya's public sector.</p>     | <p>Hypothesis 2;<br/>H<sub>02</sub>; There is no significant relationship between risk management and performance.</p>     | <p><math>Y = \beta_0 + \beta_2 X_2 + \varepsilon</math><br/>Where:<br/>Y=Organization performance<br/><math>\beta_0</math> = constant<br/><math>\beta_2</math>=Coefficient of X<sub>2</sub>(Risk management)<br/><math>\varepsilon</math> =Error term</p> | <p>H<sub>0</sub>=0<br/>H<sub>a</sub>≠0<br/>Reject H<sub>0</sub> if p&lt;0.05,<br/>Otherwise fail to reject the H<sub>0</sub></p>   |
| <p>Research objective 3;<br/>To determine the relationship between transparency and performance in Kenya's public sector.</p>        | <p>Hypothesis 3;<br/>H<sub>03</sub>; There is no significant relationship between transparency and performance.</p>        | <p><math>Y = \beta_0 + \beta_3 X_3 + \varepsilon</math><br/>Where:<br/>Y=Organization performance<br/><math>\beta_0</math> = constant<br/><math>\beta_3</math>=Coefficient of X<sub>3</sub>(Transparency)<br/><math>\varepsilon</math> =Error term</p>    | <p>H<sub>0</sub>=0<br/>H<sub>1</sub>≠0<br/>Reject H<sub>0</sub> if p&lt;0.05,<br/>Otherwise fail to reject the H<sub>0</sub></p>   |
| <p>Research objective 4;<br/>To establish the relationship between accountability and performance in Kenya's public sector.</p>      | <p>Hypothesis 4;<br/>H<sub>04</sub>; There is no significant relationship between accountability and performance</p>       | <p><math>Y = \beta_0 + \beta_4 X_4 + \varepsilon</math><br/>Where:<br/>Y=Organizational performance<br/><math>\beta_0</math>= constant<br/><math>\beta_4</math>=Coefficient of X<sub>4</sub>(Accountability)<br/><math>\varepsilon</math> =Error term</p> | <p>H<sub>0</sub>=0<br/>H<sub>a</sub>≠0<br/>Reject H<sub>0</sub> if p&lt;0.05,<br/>Otherwise fail to reject the H<sub>0</sub></p>   |

|  |  |   |   |
|--|--|---|---|
| Research objective 5;<br>To examine the extent<br>to which work<br>environment moderates<br>the relationship<br>between corporate<br>governance practices<br>and performance in<br>Kenya's public sector | Hypothesis 5;<br>H <sub>05</sub> ; Work environment<br>is not a significant<br>moderator of<br>relationship between<br>corporate governance<br>practices and<br>performance. | i) $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 Z + \epsilon$<br>Where:<br>Y=Organizational performance<br>$\beta_0$ = constant<br>$\beta_1 - \beta_4$ =Coefficient of X <sub>1</sub> -X <sub>4</sub><br>$\beta_5$ =coefficient of Z<br>(X <sub>1</sub> -X <sub>4</sub> Corporate governance<br>practices).<br>Z=Work environment<br>$\epsilon$ =Error term | H <sub>0</sub> =0<br>H <sub>a</sub> ≠0<br>Reject H <sub>0</sub> if p<0.05,<br>Otherwise fail to reject<br>the H <sub>0</sub> .<br>If there is significant<br>change in R-squared<br>after adding the<br>moderating variable,<br>the moderator is being<br>taken to have a<br>predictive role. |
|--|--|---|---|

In each case the joint effect of the independent variables was tested.

**Table 4.1 Test results of leadership**

**(a): Model Summary**

| Model | R                 | R Squared | Adjusted R Squared | Std. Error of the Estimate |
|-------|-------------------|-----------|--------------------|----------------------------|
| 1     | .500 <sup>a</sup> | .250      | .248               | .40653                     |

- a. Predictors: (Constant), X1
- b. Source:(Survey data,2015)

**(b): Analysis of variance (ANOVA) statistics of leadership skills and performance**

| Model |            | Sum of Squares | Df  | Mean Squared | F       | Sig.              |
|-------|------------|----------------|-----|--------------|---------|-------------------|
| 1     | Regression | 17.220         | 1   | 17.220       | 104.195 | .000 <sup>b</sup> |
|       | Residual   | 51.563         | 312 | .165         |         |                   |
|       | Total      | 68.782         | 313 |              |         |                   |

- a. Dependent Variable: Y
- b. Predictors: (Constant), X1

**(c): Coefficient of leadership skills and performance.**

| Model |                | Unstandardized |            | Standardized | T      | Sig. |
|-------|----------------|----------------|------------|--------------|--------|------|
|       |                | Coefficients   |            | Coefficients |        |      |
|       |                | $\beta$        | Std. Error | Beta         |        |      |
| 1     | (Constant)     | 2.077          | .184       |              | 11.275 | .000 |
|       | X <sub>1</sub> | .492           | .048       | .500         | 10.208 | .000 |

**a. Dependent Variable: Y**

**Table 4.2 Test results of risk management and performance  
(a): Model of fit Summary**

| Model | R                 | R Square | Adjusted R Square | Std. error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .455 <sup>a</sup> | .207     | .204              | .41812                     |

**a. Predictors: (Constant), X<sub>2</sub>**

**(b): ANOVA<sup>a</sup>**

| Model |            | Sum of Squares | Df  | Mean Square | F      | Sig.              |
|-------|------------|----------------|-----|-------------|--------|-------------------|
| 1     | Regression | 14.239         | 1   | 14.239      | 81.447 | .000 <sup>b</sup> |
|       | Residual   | 54.544         | 312 | .175        |        |                   |
|       | Total      | 68.782         | 313 |             |        |                   |

- a. Dependent Variable: Y
- b. Predictors: (Constant), X<sub>2</sub>

**(c): Coefficient**

| Model |  | Unstandardized | Standardized | T | Sig. |
|-------|--|----------------|--------------|---|------|
|-------|--|----------------|--------------|---|------|

|   |                | Coefficients |            | Coefficients |        |      |
|---|----------------|--------------|------------|--------------|--------|------|
|   |                | $\beta$      | Std. Error | Beta         |        |      |
| 1 | (Constant)     | 2.412        | .171       |              | 14.090 | .000 |
|   | X <sub>2</sub> | .422         | .047       | .455         | 9.025  | .000 |

**a. Dependent Variable: Y**

**Table 4.3 Test results of transparency and Performance.**

**(a) Model summary**

| Model | R                 | R Square | Adjusted R Square | Std. error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .509 <sup>a</sup> | .260     | .257              | .40192                     |

a. Predictors: (Constant), X<sub>3</sub>

**( b) ANOVA<sup>a</sup>**

| Model |            | Sum of Squares | Df  | Mean Square | F       | Sig.              |
|-------|------------|----------------|-----|-------------|---------|-------------------|
| 1     | Regression | 17.607         | 1   | 17.607      | 108.998 | .000 <sup>b</sup> |
|       | Residual   | 50.238         | 311 | .162        |         |                   |
|       | Total      | 67.845         | 312 |             |         |                   |

(a) Dependent Variable: Y

(b) Predictors: (Constant),

**(c) Coefficient**

| Model |                | Unstandardized Coefficients | Std. Error | Standardized Coefficients | T      | Sig. |
|-------|----------------|-----------------------------|------------|---------------------------|--------|------|
|       |                | B                           |            | Beta                      |        |      |
| 1     | (Constant)     | 2.209                       | .167       |                           | 13.209 | .000 |
|       | X <sub>3</sub> | .461                        | .044       | .509                      | 10.440 | .000 |

(c) Dependent Variable: Y

**Table 4.4 Regression results of Accountability on performance.**

**(a) Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .479 <sup>a</sup> | .230     | .227              | .41203                     |

a. Predictors: (Constant), X4

**(b) ANOVA**

| Model |            | Sum of Squares | df  | Mean Square | F      | Sig.              |
|-------|------------|----------------|-----|-------------|--------|-------------------|
| 1     | Regression | 15.814         | 1   | 15.814      | 93.147 | .000 <sup>b</sup> |
|       | Residual   | 52.969         | 312 | .170        |        |                   |
|       | Total      | 68.782         | 313 |             |        |                   |

a. Dependent Variable: Y

b. Predictors: (Constant), X4

**(c) Coefficient**

| Model |                | Unstandardized Coefficients |            | Standardized Coefficients | T      | Sig. |
|-------|----------------|-----------------------------|------------|---------------------------|--------|------|
|       |                | B                           | Std. Error | Beta                      |        |      |
| 1     | (Constant)     | 2.217                       | .180       |                           | 12.298 | .000 |
|       | X <sub>4</sub> | .466                        | .048       | .479                      | 9.651  | .000 |

a. Dependent Variable: Y

**Table 4.5: Regression Analysis Results of the combined variables on performance**

**(a): Model Summary**

| Model | R    | R Squared | Adjusted R Squared | Std. Error of the Estimate |
|-------|------|-----------|--------------------|----------------------------|
| 1     | .588 | .346      | .338               | .37948                     |

a. Predictors (Constant), X4, X1, X3, X2

b. Predictors; public sector performance

**(b): ANOVA**

| Model |            | Sum of Squares | Df  | Mean Square | F      | Sig.              |
|-------|------------|----------------|-----|-------------|--------|-------------------|
| 1     | Regression | 23.493         | 4   | 5.873       | 40.785 | .000 <sup>b</sup> |
|       | Residual   | 44.353         | 308 | .144        |        |                   |
|       | Total      | 67.845         | 312 |             |        |                   |

**(c): Coefficients of the predictor variables and public sector performance**

| Model |                                    | Unstandardized coefficients |            | Standardized coefficients | T     | Sig. |
|-------|------------------------------------|-----------------------------|------------|---------------------------|-------|------|
|       |                                    | $\beta$                     | Std. Error | Beta                      |       |      |
| 1     | (Constant)                         | 1.459                       | .197       |                           | 7.402 | .000 |
|       | Leadership skills(X <sub>1</sub> ) | .254                        | .061       | .260                      | 4.199 | .000 |
|       | Risk management(X <sub>2</sub> )   | .024                        | .064       | .026                      | .370  | .000 |
|       | Transparency(X <sub>3</sub> )      | .225                        | .060       | .248                      | 3.767 | .000 |
|       | Accountability(X <sub>4</sub> )    | .159                        | .062       | .165                      | 2.548 | .011 |

Dependent variable: public sector performance

**Table 4.6 Regression results on moderating relationships with leadership character X<sub>1</sub>**

**(a): Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error      |                 | Change Statistics |     |     | Sig. F Change |
|-------|-------------------|----------|-------------------|-----------------|-----------------|-------------------|-----|-----|---------------|
|       |                   |          |                   | of the Estimate | R Square Change | F Change          | df1 | df2 |               |
| 1     | .500 <sup>a</sup> | .250     | .248              | .40653          | .250            | 104.195           | 1   | 312 | .000          |
| 2     | .567 <sup>b</sup> | .321     | .317              | .38744          | .071            | 32.506            | 1   | 311 | .000          |
| 3     | .570 <sup>c</sup> | .324     | .318              | .38716          | .003            | 1.440             | 1   | 310 | .231          |

**(b): ANOVA<sup>a</sup>**



|   |            | Sum of Squares | Df         | Mean Square | F       | Sig               |
|---|------------|----------------|------------|-------------|---------|-------------------|
| 1 | Regression | 17.220         | 1          | 17.220      | 104.195 | .000 <sup>b</sup> |
|   | Residual   | 51.563         | 312        | .165        |         |                   |
|   | Total      | 68.782         | 313        |             |         |                   |
| 2 | Regression | 22.099         | 2          | 11.050      | 73.611  | .000 <sup>c</sup> |
|   | Residual   | 46.683         | 311        | .150        |         |                   |
|   | Total      | 68.782         | 313        |             |         |                   |
| 3 | Regression | 22.315         | 3          | 7.438       | 49.624  | .000 <sup>d</sup> |
|   | Residual   | 46.467         | 310        | .150        |         |                   |
|   | Total      | <b>68.782</b>  | <b>313</b> |             |         |                   |

**(c): Coefficients**

|   |          | Unstandardized Coefficients | Standardized Coefficients | T       | Sig   |
|---|----------|-----------------------------|---------------------------|---------|-------|
|   |          | B                           | Beta                      |         |       |
| 1 | constant | 3.943                       |                           | 171.876 | 0.000 |
|   | X1c      | 0.492                       | 0.500                     | 10.208  | 0.000 |
| 2 | constant | 3.943                       |                           | 180.342 | 0.000 |
|   | X1c      | 0.338                       | 0.344                     | 6.336   | 0.000 |
|   | Zc       | 0.293                       | 0.309                     | 5.701   | 0.000 |
| 3 | constant | 3.956                       |                           | 161.403 | 0.000 |
|   | X1c      | 0.348                       | 0.354                     | 6.451   | 0.000 |
|   | Zc       | 0.292                       | 0.308                     | 5.689   | 0.000 |
|   | XIZ      | -0.112                      | -0.057                    | -1.200  | 0.231 |

**Table 4.7 Regression results on moderating relationships with Risk Management X<sub>2</sub>**

**(a): Model Summary**

| Model | R                 | Adjusted R Square | Std. Error      |                 | Change Statistics |     |     | Sig. F Change |
|-------|-------------------|-------------------|-----------------|-----------------|-------------------|-----|-----|---------------|
|       |                   |                   | of the Estimate | R Square Change | F Change          | df1 | df2 |               |
| 1     | .455 <sup>a</sup> | .207              | .41812          | .207            | 81.447            | 1   | 312 | .000          |
| 2     | .536 <sup>b</sup> | .287              | .39711          | .080            | 34.886            | 1   | 311 | .000          |
| 3     | .549 <sup>c</sup> | .301              | .39379          | .014            | 6.261             | 1   | 310 | .013          |

**(b): ANOVA<sup>a</sup>**

| Model |            | Sum of Squares | df         | Mean Square | F      | Sig.              |
|-------|------------|----------------|------------|-------------|--------|-------------------|
| 1     | Regression | 14.239         | 1          | 14.239      | 81.447 | .000 <sup>b</sup> |
|       | Residual   | 54.544         | 312        | .175        |        |                   |
|       | Total      | 68.782         | 313        |             |        |                   |
| 2     | Regression | 19.740         | 2          | 9.870       | 62.590 | .000 <sup>c</sup> |
|       | Residual   | 49.043         | 311        | .158        |        |                   |
|       | Total      | 68.782         | 313        |             |        |                   |
| 3     | Regression | 20.711         | 3          | 6.904       | 44.519 | .000 <sup>d</sup> |
|       | Residual   | 48.072         | 310        | .155        |        |                   |
|       | Total      | <b>68.782</b>  | <b>313</b> |             |        |                   |

**(c): Coefficients<sup>a</sup>**

| Model |            | Unstandardized |            | Standardized |         | Collinearity |           |       |
|-------|------------|----------------|------------|--------------|---------|--------------|-----------|-------|
|       |            | Coefficients   |            | Coefficients |         | Statistics   |           |       |
|       |            | B              | Std. Error | Beta         | t       | Sig.         | Tolerance | VIF   |
| 1     | (Constant) | 3.945          | .024       |              | 167.178 | .000         |           |       |
|       | X2c        | .422           | .047       | .455         | 9.025   | .000         | 1.000     | 1.000 |
| 2     | (Constant) | 3.944          | .022       |              | 175.984 | 0.000        |           |       |
|       | X2c        | .254           | .053       | .274         | 4.822   | .000         | .710      | 1.409 |
|       | Zc         | .319           | .054       | .336         | 5.906   | .000         | .710      | 1.409 |
| 3     | (Constant) | 3.971          | .025       |              | 161.253 | .000         |           |       |
|       | X2c        | .290           | .054       | .313         | 5.352   | .000         | .660      | 1.516 |
|       | Zc         | .307           | .054       | .323         | 5.713   | .000         | .704      | 1.420 |
|       | X2Z        | -.196          | .078       | -.124        | -2.502  | .013         | .925      | 1.081 |

**Table 4.8 Regression results on moderating relationships with Transparency X<sub>3</sub>  
(a): Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate | R Square Change | Change Statistics |     |     |               |
|-------|-------------------|----------|-------------------|----------------------------|-----------------|-------------------|-----|-----|---------------|
|       |                   |          |                   |                            |                 | F Change          | df1 | df2 | Sig. F Change |
| 1     | .509 <sup>a</sup> | .260     | .257              | .40192                     | .260            | 108.998           | 1   | 311 | .000          |
| 2     | .572 <sup>b</sup> | .327     | .323              | .38377                     | .068            | 31.105            | 1   | 310 | .000          |
| 3     | .578 <sup>c</sup> | .334     | .327              | .38250                     | .007            | 3.067             | 1   | 309 | .081          |

**(b): ANOVA<sup>a</sup>**

| Model        | Sum of        |            |             |         |                   |
|--------------|---------------|------------|-------------|---------|-------------------|
|              | Squares       | df         | Mean Square | F       | Sig.              |
| 1 Regression | 17.607        | 1          | 17.607      | 108.998 | .000 <sup>b</sup> |
| Residual     | 50.238        | 311        | .162        |         |                   |
| Total        | 67.845        | 312        |             |         |                   |
| 2 Regression | 22.188        | 2          | 11.094      | 75.327  | .000 <sup>c</sup> |
| Residual     | 45.657        | 310        | .147        |         |                   |
| Total        | 67.845        | 312        |             |         |                   |
| 3 Regression | 22.637        | 3          | 7.546       | 51.575  | .000 <sup>d</sup> |
| Residual     | 45.208        | 309        | .146        |         |                   |
| Total        | <b>67.845</b> | <b>312</b> |             |         |                   |

**(c): Coefficients<sup>a</sup>**

| Model        | Unstandardized Coefficients |            | Standardized Coefficients | t       | Sig.  | Collinearity Statistics |       |
|--------------|-----------------------------|------------|---------------------------|---------|-------|-------------------------|-------|
|              | B                           | Std. Error | Beta                      |         |       | Tolerance               | VIF   |
| 1 (Constant) | 3.940                       | .023       |                           | 173.446 | 0.000 |                         |       |
| X3c          | .461                        | .044       | .509                      | 10.440  | .000  | 1.000                   | 1.000 |
| 2 (Constant) | 3.940                       | .022       |                           | 181.640 | 0.000 |                         |       |
| X3c          | .319                        | .049       | .352                      | 6.456   | .000  | .731                    | 1.368 |
| Zc           | .286                        | .051       | .304                      | 5.577   | .000  | .731                    | 1.368 |
| 3 (Constant) | 3.959                       | .024       |                           | 163.959 | .000  |                         |       |
| X3c          | .341                        | .051       | .376                      | 6.710   | .000  | .686                    | 1.458 |
| Zc           | .273                        | .052       | .290                      | 5.271   | .000  | .715                    | 1.399 |
| X3Z          | -.143                       | .082       | -.084                     | -1.751  | .081  | .938                    | 1.067 |

**Table 4.9 Regression results on moderating relationships with Accountability X<sub>4</sub>**

**(a): Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate | R Square Change | Change Statistics |     |     |               |
|-------|-------------------|----------|-------------------|----------------------------|-----------------|-------------------|-----|-----|---------------|
|       |                   |          |                   |                            |                 | F Change          | df1 | df2 | Sig. F Change |
| 1     | .479 <sup>a</sup> | .230     | .227              | .41203                     | .230            | 93.147            | 1   | 312 | .000          |
| 2     | .534 <sup>b</sup> | .285     | .280              | .39770                     | .055            | 23.896            | 1   | 311 | .000          |
| 3     | .537 <sup>c</sup> | .289     | .282              | .39725                     | .004            | 1.699             | 1   | 310 | .193          |

  

**(b): ANOVA<sup>a</sup>**

| Model        | Sum of Squares | df         | Mean Square | F      | Sig.              |
|--------------|----------------|------------|-------------|--------|-------------------|
| 1 Regression | 15.814         | 1          | 15.814      | 93.147 | .000 <sup>b</sup> |
| Residual     | 52.969         | 312        | .170        |        |                   |
| Total        | 68.782         | 313        |             |        |                   |
| 2 Regression | 19.593         | 2          | 9.797       | 61.940 | .000 <sup>c</sup> |
| Residual     | 49.189         | 311        | .158        |        |                   |
| Total        | 68.782         | 313        |             |        |                   |
| 3 Regression | 19.861         | 3          | 6.620       | 41.952 | .000 <sup>d</sup> |
| Residual     | 48.921         | 310        | .158        |        |                   |
| Total        | <b>68.782</b>  | <b>313</b> |             |        |                   |

**(c): Coefficients<sup>a</sup>**

| Model        | Unstandardized Coefficients |            | Standardized Coefficients |         |       | Collinearity Statistics |       |
|--------------|-----------------------------|------------|---------------------------|---------|-------|-------------------------|-------|
|              | B                           | Std. Error | Beta                      | t       | Sig.  | Tolerance               | VIF   |
| 1 (Constant) | 3.943                       | .023       |                           | 169.565 | 0.000 |                         |       |
| X4c          | .466                        | .048       | .479                      | 9.651   | .000  | 1.000                   | 1.000 |
| 2 (Constant) | 3.943                       | .022       |                           | 175.678 | 0.000 |                         |       |
| X4c          | .282                        | .060       | .291                      | 4.718   | .000  | .606                    | 1.650 |
| Zc           | .286                        | .058       | .301                      | 4.888   | .000  | .606                    | 1.650 |
| 3 (Constant) | 3.961                       | .026       |                           | 150.249 | .000  |                         |       |
| X4c          | .288                        | .060       | .297                      | 4.808   | .000  | .603                    | 1.659 |
| Zc           | .288                        | .058       | .303                      | 4.926   | .000  | .606                    | 1.651 |
| X4Z          | -.121                       | .093       | -.063                     | -1.304  | .193  | .986                    | 1.015 |