Moderating Effect of Audit Committees on Forensic Accounting Techniques and Financial Performance of Kenyan Counties

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Abstract

The aim of the study is to assess the moderating effect of audit committees on the relationship between forensic accounting techniques indicated by (audit opinion, red flag index, audit expenditure, fraud rate and cases reported) and financial performance (indicated by own source revenue and absorption rate) of counties in Kenya. The research was based on correlational research design using data from audited financial statements of counties for 9 years from financial year 2014/2015 to 2022/2023. Data was analyzed using R statistical tool and the model was subjected to instrument validity test, autocorrelation and model specification test then a dynamic panel model was fit. The outcome showed that audit committee size has a moderating effect on the linkage between forensic accounting techniques and financial performance of counties in Kenya to some extent at first lag. The study noted that most counties did not have an audit committee or the audit committee was not functioning fully. The study concluded that every county should ensure that they have an audit committee to oversee the financial functions. The study recommends that each county government leadership should ensure that an independent and qualified committee is in place to oversee the financial reporting exercise. Institute of Certified Public Accountants of Kenya should ensure that they monitor the counties have a fully functional audit committee. The senate could penalize counties that do not have an independent and working committee.

Keywords: *audit committee size, absorption rate, own source revenue, forensic accounting techniques*

1. Introduction

Kenyan counties make laws that are vital to guarantee that the county governments perform their duties in accordance with the fourth schedule of the constitution (The Constitution of Kenya, 2010). Kenyan counties provide services to residents, receive and approve plans and policies and perform any other duty as directed by the national government (County Governments Act, 2012). The performance of counties and delivery of services to Kenyan citizens has experienced a slow growth due to failure to abide to rules and guidelines when discharging the county functions (Mbui & Minja, 2023). Daud (2022) stated that Mandera County has faced challenges in delivery of services and overall performance; the challenges include lack of adequate ability to develop and improper use of financial and human resources due to poor leadership and dishonest management of funds in Mandera County. Muthoka and Waswa (2021) noted that the performance of the counties has been on the decline due to poor management of public resources.

Kwale County could not account for sh. 305,958,297, Kilifi County also had expenditures that were not accounted for and projects had stalled including a project they were awarded in 2016 but due to poor performance, the contract was terminated. Tana River had an expenditure of sh. 21,284,138 that they were not able to account for, the auditor general noted that the county had unsupported expenditure; they could not remit Pay as You Earn (P.A.Y.E.) and NHIF deductions (Auditor's Report, 2021/2022).

Ibrahim (2022) highlighted that forensic accounting is very crucial for an organization to find out fraud and present such information as attestation. Forensic accounting is useful in combating graft, help companies solve civil litigation and minimize subsequent occurrence of financial graft. Akinadewo (2023) indicated that if forensic accounting is conducted then firms' financial accountability increases. Forensic accounting might

provide a cure on financial problems faced by counties. From the studies above from Europe, Africa and Kenya, it is clear that the performance of local governments is a big problem. This is majorly due to over reliance on the national government, inability to collect enough revenue internally, lack of financial autonomy, mismanagement of funds, inability to account for expenditure, fraud, and failure to complete long-term projects.

Ahdal et al. (2023) audit committees are a governance tool that in crucial in magnifying the credibility of financial reports and boost institutional performance. Audit committee indicators were audit committee features. Mustapha et al. (2020) audit committees are exploit by institutions in making sure that financial statements are faultless. Daoud (2015) audit committees ensure high financial reports' quality and a firm is accountable, the indicator for audit committee was a binary variable. Audit committees assist management to ensure quality financial reports prepared (Bicer & Feneir, 2019).

Appuhami and Tashakor (2017) audit committees supervise financial reporting process to ensure that management, shareholders and the company share accurate information, audit committee measures were audit committee size, frequency of congregation, independence of members and gender diversity. Isa and Farouk (2015) audit committee ensure that the financial process is free from manipulation; the indicators are formation, size and meeting frequency. Apriyani and Muharam (2021) audit committee significantly influences performance of an institution. Matari (2022) audit committees ensure that financial performance of institutions improves, audit committee's indicators were independence, size, frequency of meeting.

Committee members must meet not less than four times in a financial year; it should compose of at least 5 members both from management and from outside and should act independently (Auditing Standards, 2022; Deloitte, 2023; Financial Reporting Council, 2021; KPMG, 2023). The researcher used audit committee size to measure audit committees, which is the moderating variable.

2. Literature review
2.1 Theoretical Review

Positive Accounting Theory (PAT) was developed by (Watts & Zimmerman, 1978) which helps understand accounting practices and its development over the years. Positive accounting theory explains what accountants should do (Jensen and Meclkling, 1978). Wiratama et al. (2020) PAT is useful to explicate and prognosticate accounting praxis regarding how accountants prepare financial reports. Firmansyah (2020) accounting scandals committed through manipulation of the financial reports has a negative effect on continuity of an entity. Belkaoui (2014) positive accounting theory provides a basis to analyze the costs and benefits for an institution to ensure proper allocation of companies' scarce resources. Setyorin and Ishak (2012) accounting disclosure affects firm performance. Positive accounting theory emphasizes on the importance of the accounting praxis to ensure that an institution sees magnification in their activities and feedback (Deegan, 2011). Waweru et al. (2011) the accounting practices and policies a firm chooses influences the overall performance.

PAT influences the decisions that management will make regarding the accounting policies from which they can be able to benefit (Nasution et. al., 2018). Accountants must present financial reports that are accurate and in compliance with accounting standards, making the theory useful. The financial statements should be accurate, relevant, understandable and comparable. Audit committees oversee the financial function in counties to ensure transparency and accuracy of the statements reported.

2.2 Empirical Review

Al-Ahdal et al. (2023) studied the moderating effect of an audit committee on the relationship between ownership structure and firm performance using 10-year panel data 2012 to 2021. The study focus was listed non-financial firms in Oman and UAE. Findings indicate the moderating effect of audit committees is positive on ownership structure and financial performance. Focus of the current study is on the moderating effect of audit committee on forensic accounting techniques and financial performance of Kenyan counties bridging the conceptual gap.

Shatnawi et al. (2022) studied audit committee impact and financial performance of companies listed in Jordan. Secondary data analyzed from 2009 to 2017 for 92 firms in the service and industrial sector using STATA. Audit committees and financial performance have a statical significant affinity. However, it was conducted in the service and industrial sector in Jordan a different case from Kenyan counties. This study aims at bridging the gap by studying 45 Kenyan counties.

A study by (Dakhlallh et al., 2021) on the moderating effect of audit committee independence on the board structure and real earnings management in listed companies in Jordan. Secondary data from 910 listed institutions between 2009 to 2018 and a fixed effect approach was used. The findings showed that audit committee independence has a moderate effect on board structure and real earnings management. The current study was conducted in Kenya bridging the contextual gaps.

Garba and Mohamed (2020) examined ownership and profitability: The moderating effect of audit committee financial expertise. A sample of 29 listed financial institutions on the Nigerian Stock Exchange was used. The findings showed audit committee statistically moderates the relationship between ownership and profitability. Methodological gap from using a sample existed; the current study will eliminate this by using a census to avoid any sampling errors. The study was not based on any relevant theories; the current study solved the theoretical gap by introducing Positive Accounting Theory. The contextual gap bridged by conducting the study in Kenya.

Mustapha et al. (2020) assessed how the audit committee controls the connection between financial performance and corporate governance. The study did not indicate the sample used, design, analysis, findings and even conclusions. This study aims at filling the methodological gap where a census of 47 counties shall be employed and the contextual gap bridged by focusing on counties in Kenya.

Past studies demonstrate that audit committee has a substantial influence on the efficiency of a firm, they also show that audit committee moderates different relationships, however, the studies had gaps which the current study aims to fill. The null hypothesis is there is no statistically significant moderating effect of audit committee on the relationship between forensic accounting techniques and financial performance.

3. Methodology

The researcher used correlational design to establish if there exists a moderating effect on the link between forensic accounting techniques and financial performance of counties in Kenya. Data was collected from financial statements in the custody of the controller of budgets. Data was collected from 45 counties because financial reports of Meru and Homabay county were missing for 9 years from financial year 2014/2015-2022/2023 and analyzed using R statistical tool. A dynamic panel model was fit for two lag periods because at lag 1 the autocorrelation assumption was violated. Instrument validity test, autocorrelation and model specification test were conducted on each model to ensure it is valid.

Instrument validity is useful in panel dynamic models because it is used to address the problems with endogeneity where biasness can occur when the independent variable is correlated with the error term which can cause the findings to be incorrect (Kovac, 2023). The study used Sargan test since Carrasco & Doukali (2022) and Fan et al. (2024) used the Sargan test in their studies. The null hypothesis is that the instruments are valid, that is, the independent variable is not correlated to the error term. If p value is between 0.25 and 1 then the researcher fails to reject the null hypothesis and concludes that the instrument is valid and that the independent variable is not correlated with the error term which means the estimates are reliable, otherwise, if p value<0.25 then reject the null hypothesis and conclude the instrument is biased which will require further analysis of the model specification.

King (2018) Autocorrelation in a dynamic model refer to correlation of a variable with its lags. Autocorrelation affects accuracy of the model, if autocorrelation is ignored then the model estimators will be biased resulting in the model coefficients to be biased. Autocorrelation in a dynamic model can be corrected by introducing more lagged time periods (Wilkins 2017). The null hypothesis is that there is no autocorrelation which means the error term is not correlated with its lags. Arellano and Bond (1991) was used to check for autocorrelation in the dynamic model. Jung (2005) indicated that Arellano and Bond is the most effective to use when checking autocorrelation in a dynamic panel model. If p value>0.05 for the lags fail to reject the null hypothesis and conclude that there is no autocorrelation suggesting that the model is adequate, otherwise if p value<0.05 then reject the null hypothesis and conclude that autocorrelation exists which might be corrected by introducing more lags.

The model specification test in a dynamic model is important to ensure that the relationship that is lagged is correct without significant incorrect information, that is the overall model valid or not valid. Wald Test for coefficients checks the significance of the model coefficients and if they are different from zero (Khan et. al. 2021). The null hypothesis states that the coefficients are equal values typically zero i.e. the values have no significant effect on the dependent variable. If p value < 0.05 the researcher rejects the null hypothesis which means that at least one of the coefficients is not equal to 0 and thus the overall model is valid. If p value >0.05

then fail to reject the null hypothesis and conclude the overall model is invalid and conclude that the coefficients do not differ from 0.

To establish the moderating effect of audit committee size two steps were followed; included the moderating variable as a predictor and thereafter check for interaction (Whisman & McClelland, 2005; Keppel & Zeddek, 2000). The first step is to include audit committee size as a predictor.

$$A.R_{it} = \alpha_1 A.R_{it-1} + \alpha_2 A.R_{it-2} + \beta_1 RFI_{it-1} + \beta_2 RFI_{it-2} + \beta_3 A.O_{it-1} + \beta_4 A.O_{it-2} + \beta_5 A.E_{it-1} +$$
$$\beta_6 A.E_{it-2} + \beta_7 F.R_{it-1} + \beta_8 F.R_{it-2} + \beta_9 C.R_{it-1} + \beta_{10} C.R_{it-2} + \beta_{11} A.C.S_{it-1} + \beta_{12} A.C.S_{it-2} + \varepsilon_{it} \quad \ldots\ldots$$
$$\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.3.1$$

$$O.S.R_{it} = \alpha_1 O.S.R_{it-1} + \alpha_2 O.S.R_{it-2} + \beta_1 RFI_{it-1} + \beta_2 RFI_{it-2} + \beta_3 A.O_{it-1} + \beta_4 A.O_{it-2} +$$
$$\beta_5 A.E_{it-1} + \beta_6 A.E_{it-2} + \beta_7 F.R_{it-1} + \beta_8 F.R_{it-2} + \beta_9 C.R_{it-1} + \beta_{10} C.R_{it-2} + \beta_{11} A.C.S_{it-1} +$$
$$\beta_{12} A.C.S_{it-2} + \varepsilon_{it} \quad \ldots\ldots$$
$$\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.\ldots 3.2$$

Secondly, determine the moderating effect by interacting audit committees' size with forensic accounting indicators for one lag to rate the influence of forensic accounting on financial performance of counties:

$$A.R_{it} = \alpha_1 A.R_{it-1} + \alpha_2 A.R_{it-2} + \beta_1 RFI_{it-1} + \beta_2 RFI_{it-2} + \beta_3 A.O_{it-1} + \beta_4 A.O_{it-2} + \beta_5 A.E_{it-1} +$$
$$\beta_6 A.E_{it-2} + \beta_7 F.R_{it-1} + \beta_8 F.R_{it-2} + \beta_9 C.R_{it-1} + \beta_{10} C.R_{it-2} + \beta_{11} RFI_{it-1} * A.C.S_{it-1} + \beta_{12} A.O_{it-1} *$$
$$A.C.S_{it-1} + \beta_{13} A.E_{it-1} * A.C.S_{it-1} + \beta_{14} F.R_{it-1} * A.C.S_{it-1} + \beta_{15} C.R_{it-1} * A.C.S_{it-1} + \varepsilon_{it} \quad \ldots\ldots$$
$$\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..\ldots 3.3$$

$$O.S.R_{it} = \alpha_1 O.S.R_{it-1} + \alpha_2 O.S.R_{it-2} + \beta_1 RFI_{it-1} + \beta_2 RFI_{it-2} + \beta_3 A.O_{it-1} + \beta_4 A.O_{it-2} +$$
$$\beta_5 A.E_{it-1} + \beta_6 A.E_{it-2} + \beta_7 F.R_{it-1} + \beta_8 F.R_{it-2} + \beta_9 C.R_{it-1} + \beta_{10} C.R_{it-2} + \beta_{11} RFI_{it-1} * A.C.S_{it-1} +$$
$$\beta_{12} A.O_{it-1} * A.C.S_{it-1} + \beta_{13} A.E_{it-1} * A.C.S_{it-1} + \beta_{14} F.R_{it-1} * A.C.S_{it-1} + \beta_{15} C.R_{it-1} * A.C.S_{it-1} +$$
$$\varepsilon_{it} \quad \ldots\ldots$$
$$\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 3.4$$

Where:

$A.R_{it}$, $A.R_{it-1}$ & $A.R_{it-2}$ = Absorption rate in county i at time t, t-1 and t-2

$O.S.R_{it}$, $O.S.R_{it-1}$ & $O.S.R_{it-2}$ = Own source revenue measured by the ratio of revenue collected/budgeted revenue in county i at time t, t-1 and t-2

β_1- β_{12}- Coefficients of the independent variable lagged for time period 1 and 2

α_1 & α_2 = Coefficients of lagged dependent variable for time period 1 and 2

i- County

t- time

RFI_{it-1} & RFI_{it-2} = Red flag index for county i at time t-1 & t-2

$A.O_{it-1}$ & $A.O_{it-2}$ = Audit Opinion for county i at time t-1 & t-2

$A.E_{it-1}$ & $A.E_{it-2}$ = Audit expenditures for county i at time t-1 & t-2

$F.R_{it-1}$ & $F.R_{it-2}$ = Fraud Rate for county i at time t-1 & t-2

$C.R_{it-1}$ & $C.R_{it-2}$ = Cases Reported for county i at time t-1 & t-2

$A.C.S_{it-1}$ & $A.C.S_{it-1}$ = is the moderating variable audit committee size in county i at time t-1 and t-2

According to MacKinnon et al. (2002) moderation criteria: If β_{11} to β_{15} is not significant in equation 3.3 and 3.4 but β_{11} or β_{12} is significant in equation 3.1 and 3.2 then audit committee size is an independent variable, however, if any of β_{11} to β_{15} is significant in equation 3.3 and 3.4 then audit committee size is considered a moderating variable to some extent, however, if all the interaction is significant then the moderation is full. The researcher concluded existence of moderation to some extend if any of the interaction is significant.

4. Results
4.1 Descriptive Statistics
The study collected data on forensic accounting techniques, financial performance and audit committee size of counties in Kenya for a period of 9 years from financial year 2014/2015 to financial year 2022/2023. The data was obtained from 45 out of 47 counties in Kenya which excluded Homabay and Meru County because the financial statements were not available at the office of controller of budgets. Outcome depicted in table 1

Table 1: Descriptive Statistics

Indicator	Number of observations	Mean	Standard deviation	Minimum	Maximum
Red Flag Index	405	0.14	0.10	-0.05	0.62
Audit Opinion	405	0.03	0.18	0.00	1.00
Audit expenditure	405	0.03	0.03	0.00	0.19
Fraud Rate	405	0.06	0.07	0.00	0.74
Number of fraud cases reported	405	5.1	3.95	0.00	22.00
Audit committee size	405	2	2	0	7
Absorption Rate	405	0.89	0.19	0.04	3.02
Own Source Revenue	405	0.70	0.24	0.19	2.05

(Researcher, 2024)

Based on results in table 1 it was observed that the average red flag index was 0.14 with a standard deviation of 0.1. This indicates majority of the counties were not able to finance their expenditure because a county should have an RFI of at least 0.25 for it to be able to finance its expenditures (Government Finance Officers Association, 2023). During the entire financial period between financial year 2014/2015 and 2022/2023 the minimum recorded RFI was -0.05 in Nairobi County for the financial year 2014/2015 while the maximum reported RFI was 0.62 in Vihiga county for financial year 2017/2018. For Nairobi County the lowest RFI of - 0.05 was a result of negative reserves at the end of the financial year while the highest RFI of 0.62 for Vihiga county was because they had a low expenditure of (sh. 3,631,863,365) compared to a revenue of (sh. 5,455,871,916).

The average audit opinion was 0.03 with a standard deviation of 0.18. This indicates that most of the audited financial statements showed a qualified, adverse or disclaimer opinion meaning the auditor general was not satisfied that the financial statements showed a true and fair view position.

The average audit expenditure was 0.03 with a standard deviation of 0.03. This indicates that some of the counties did not have an independent internal audit team and audit committees as stipulated in the county act across the 9-year period, this therefore made the audit function to be ineffective or non-existent at all. The lowest recorded audit expenditure was 0.00 for Lamu county in the financial year 2022/2023 because the internal audit department was ineffective and so was the audit committee. The highest audit expenditure was 0.19 for Nairobi County in the financial year 2019/2020 which was at the height of COVID 19 in Kenya which forced the county to have more audit staff because the county was having financial issues, the audit committee was also constituted properly with a number above the required 5 members at 6 members.

The average fraud rate was reported at 0.06 with a standard deviation of 0.07. This indicated the fraud rate across the 45 counties for the 9-year period was averagely at 6% which significant. The outcome showed a minimum of 0.00 for Embu for financial year 2014/2015, Kericho county 2014/2015, Kericho county 2017/2018, Makueni 2014/2015, Mandera 2020/2021 and Tharaka Nithi 2019/2020 meaning the financial statements satisfied the auditor and there was no material evidence that some amount was over stated or understated. The highest fraud rate of 0.74 was reported by Nyeri county in the financial year 2017/2018 because out of the revenue of sh. 6,404,065,401 the auditor noted majority of the amount could not be accounted for on how it was spent for both routine and development projects.

The average reported number of fraud cases at 5.1 with a standard deviation of 3.95. This indicate across the 45 counties over the 9-year period averagely 5.1 fraud cases are reported. This average shows in counties the money that comes in (revenue) and money that goes out (expenditure) cannot be accurately accounted for and properly utilized. The lowest number of cases reported were 0 for Bomet 2018/2019 and Kericho 2014/2015 which indicated the county did not have any financial cases. While the highest number of cases 22 were reported by Machakos county in the financial year 2017/2018 this might be because it was the year the country conducted an election to elect county leadership.

The average number of audits committee size was 2 with a standard deviation of 2. This shows that across the 9-year period most counties did not have at least 3 audit committee members that are active and at most 5 committee members (Public Sector Accounting Standards Board, 2016 and Kirui, 2022). The minimum number of audit committee members was 0 for majority of the counties across the periods especially for the first four financial periods counties did not compose audit committees. The highest number was 7 for Makueni county between financial year 2016/2017 to 2018/2019 which was above the required number of a maximum of 5 members.

Own source revenue reported had a mean of 0.7 and a standard deviation of 0.24. This means that on average a county is able to collect revenue of 0.7 in relation to their budget for the 9-year period. Counties should aim to collect at least 0.8 of their revenue so as to have financial freedom in exercising their duty, a high Own source revenue ensures that the counties have financial independence and freedom (The Kenya Institute for Public Policy Research and Authority, 2024). Garissa county for the financial year 2014/2015 had a minimum OSR of 0.19 which showed that the county was not able to collect enough revenue from their internal sources possibly because counties were still new and they were trying to come up with mechanisms to collect revenue. Marsabit had the highest OSR of 2.05 for the financial year 2014/2015 this could be because it is a has a small population but with more revenue collection avenues.

The average absorption rate index was 0.81 with a standard deviation of 0.19. A high absorption rate is better because it means that counties are close to achieving the targets they set in terms of expenditure (Economic Affairs, 2016 and Ngai, 2022). The minimum absorption rate was 0.04 for Wajir county in the financial year 2015/2016 indicating that the county was not able to utilize their expenditure this might be because of the commencement of the county assembly headquarters which stalled and thus funds were not properly utilized. The county with the highest absorption rate of 3.02 was Vihiga county in the financial year 2014/2015 this might be because the county spent on unplanned projects.

4.2 Moderating effect of audit committee size on forensic accounting techniques
4.2.1 Moderating effect of audit committee size on OSR
Two dynamic panel models were fitted for the own source revenue for each of the 45 counties with two lags for the dependent variable and each of the independent variable. In the first model the lagged values of audit committee size were used as an independent variable to assess if audit committee was an independent variable for OSR. In the second model the interaction comes between audit committee size and other independent variables at first lag were used as independent variable so as to as to assess if audit committee size was a moderating variable. In both models the lagged values of OSR from the 3rd to 405th lag was used as the instruments for the models. The results of the fitted models were as shown in table 2
Table 2: OSR Moderating Model Results

```
## ===============================================================
##                                           Dependent variable:
##                               ---------------------------------------------------
##                                                  OSR
##                               Model Step 1          Model Step 2
##                                   (1)                   (2)
## ---------------------------------------------------------------
## lag(OSR, 1:2)1                 -0.1311               -0.0599
##                               (0.1620)              (0.1925)
## lag(OSR, 1:2)2                 -0.1898*              -0.2088**
##                               (0.0978)              (0.1041)
## lag(RFI, 1:2)1                 0.2729*                0.1766
##                               (0.1496)              (0.1999)
## lag(RFI, 1:2)2                 -0.0080               -0.0370
##                               (0.1240)              (0.1256)
## lag(AO, 1:2)1                  -0.0484               -0.3650***
##                               (0.1004)              (0.1326)
## lag(AO, 1:2)2                  -0.0524               -0.0922
##                               (0.0416)              (0.0611)
## lag(AE, 1:2)1                  0.2566                -0.8719
##                               (0.5791)              (1.6196)
## lag(AE, 1:2)2                  0.8146                 0.1716
##                               (0.6122)              (0.6712)
## lag(FR, 1:2)1                  -0.0899               -0.0014
##                               (0.1559)              (0.2184)
## lag(FR, 1:2)2                  -0.3916               -0.3552
##                               (0.2730)              (0.3113)
## lag(NC, 1:2)1                  0.0058                 0.0035
##                               (0.0038)              (0.0055)
## lag(NC, 1:2)2                  0.0102*                0.0102
##                               (0.0061)              (0.0068)
## lag(Committee, 1:2)1          0.0215*
##                               (0.0127)
## lag(Committee, 1:2)2          -0.0160*
##                               (0.0095)
## lag(RFI_Committee, 1)                                0.0578
##                                                     (0.0378)
## lag(AO_Committee, 1)                                 0.0853**
##                                                     (0.0365)
## lag(AE_Committee, 1)                                 0.2936
##                                                     (0.2929)
## lag(FR_Committee, 1)                                 -0.1105
##                                                     (0.0988)
## lag(NC_Committee, 1)                                 0.0026
##                                                     (0.0017)
## ---------------------------------------------------------------
## Sargan                         19.545                19.7917
## Sargan (p-value)               0.4224                0.4072
## AR(1)                          -1.26                 -1.25
## AR(1) p-value                  0.2068                0.2114
```

(Researcher, 2024)

Based on results in table 2, for the case of model 1 at 95% confidence level, the results showed that the instrument used in the dynamic panel model was valid based on the sargan test (sargan = 19.5450, p = 0.4224). This indicate that the valid instrument assumption in the model was well satisfied. The test for no autocorrelation in the first and second lags showed that there was no sufficient evidence at 95% confidence level to suggest

presence of autocorrelation in the first lag (p = 0.2068) and second lag (p = 0.5952). The autocorrelation assumption at both first and second lag was properly satisfied. The model satisfied the assumption for autocorrelation and valid instrument. At 95% confidence level the results showed that the joint significant effect of the variables on OSR at time t (χ^2(14) = 80.15, p <0.05). This showed that the model was valid and that model coefficients are different from 0. There was no significant persistent effect exhibited by OSR in both lag 1 ($\alpha_1 = -0.1311, p = 0.4183$) and lag 2 ($\alpha_1 = -0.1898, p = 0.05215$). From table 4.4 the following model was extracted:

$$\widehat{O.S.R}_{it} = -0.1311 O.S.R_{it-1} - 0.1898 O.S.R_{it-2} + 0.2729 RFI_{it-1} - 0.008 RFI_{it-2} - 0.0484 A.O_{it-1}$$
$$- 0.0524 A.O_{it-2} + 0.2566 A.E_{it-1} + 0.8146 A.E_{it-2} - 0.0899 F.R_{it-1}$$
$$- 0.3916 F.R_{it-2} + 0.0058 C.R_{it-1} + 0.0102 C.R_{it-2} + 0.0215 A.C.S_{it-1}$$
$$- 0.016 A.C.S_{it-2}$$

At 95% confidence level the results indicated that the coefficients of audit committee size are not significant at both lag 1 ($\beta = 0.0215, p = 0.0903$) and lag 2 ($\beta = -0.016, p = 0.09$). This showed that audit committee size for the two previous financial years had no significant effect on OSR for the present financial year and thus it indicated that it was not an independent variable.

Having confirmed that audit committee size was not an independent variable. The study proceeded to confirm whether it was a moderating variable for OSR based on the second model. For model 2 at 95% confidence level, the results showed that the instrument used in the dynamic panel model was valid based on the sargan test (sargan = 19.7917, p = 0.4072). This indicated that the valid instrument assumption in the model was satisfied. The test for no autocorrelation in the first and second lags showed that there was no sufficient evidence at 95% confidence level to suggest presence of autocorrelation in the first lag (p = 0.2114) and second lag (p = 0.712). The autocorrelation assumption at both the first and second lag was properly satisfied. At 95% confidence level the results showed that there was a joint significant effect of the variables on OSR at time t (χ^2(17) = 90.37, p <0.05). This showed that the model was valid and that model coefficients are different from 0. There was no significant persistent effect exhibited by lag 1 ($\alpha_1 = -0.0599, p = 0.7558$) however, lag 2 had a negative persistent effect ($\alpha_1 = -2088, p = 0.0448$). From table 2 the following model was extracted:

$$\widehat{O.S.R}_{it} = -0.0599 O.S.R_{it-1} - 0.2088 O.S.R_{it-2} + 0.1766 RFI_{it-1} - 0.037 RFI_{it-2} - 0.365 A.O_{it-1}$$
$$- 0.0922 A.O_{it-2} - 0.8719 A.E_{it-1} + 0.1716 A.E_{it-2} - 0.0014 F.R_{it-1}$$
$$- 0.3552 F.R_{it-2} + 0.0035 C.R_{it-1} + 0.0102 C.R_{it-2}$$
$$+ 0.0578 RFI_{it-1} * A.C.S_{it-1} + 0.0853 A.O_{it-1} * A.C.S_{it-1} + 0.2936 A.E_{it-1}$$
$$* A.C.S_{it-1} - 0.1105 F.R_{it-1} * A.C.S_{it-1} + 0.0026 C.R_{it-1} * A.C.S_{it-1}$$

At 95% confidence level, the coefficient of the interaction between RFI and audit committee size at first lag was not significant ($\beta - 0.0578, p - 0.1263$). This showed that the interaction between RFI and audit committee in the previous financial year had no significant effect on OSR in the present financial year. The coefficient of the interaction between AO and audit committee size at first lag was significant ($\beta = 0.0853, p = 0.0196$). This showed that the interaction between AO and audit committee in the last financial year had a positive significant effect on OSR in the current financial year. The coefficient of the interaction between AE and audit committee size at first lag was not significant ($\beta = 0.2936, p = 0.3162$). This showed that the interaction between AE and audit committee in the previous financial year had no significant effect on OSR in the present financial year. The coefficient of the interaction between FR and audit committee size at first lag was not significant ($\beta = -0.1105, p = 0.2632$). This showed that the interaction between FR and audit committee in the last financial year had no significant effect on OSR in the present financial year. The coefficient of the interaction between CR and audit committee size at first lag was not significant ($\beta = 0.0026, p = 0.1192$). This showed that the interaction between CR and audit committee in the previous financial year had no significant effect on OSR in the current financial year. Given that the coefficient of audit committee size and AO had a significant effect on OSR then we concluded that audit committee has a minimal effect on the relationship between forensic accounting techniques and financial performance of counties in Kenya.

4.2.2 Moderating effect of audit committee size on AR
Two dynamic panel models were fitted for absorption rate for each of the 45 counties with two lags for the dependent variable and each of the independent variable. In the first model the lagged values of audit committee

size were used as an independent variable to assess if audit committee was an independent variable for AR. In the second model the interaction comes between audit committee size and other independent variables at first lag. In both models the lagged values of AR from the 3rd to 405th lag was used as the instruments for the models. The results of the fitted models were as shown in table 3

Table 3: Absorption rate Moderating Model Results

```
## =========================================================================
##                                       Dependent variable:
##                         ----------------------------------------------
##                                         ABSORPTION_RAT
##                            Model Step 1      Model Step 2
##                               (1)               (2)
## -------------------------------------------------------------------------
## lag(ABSORPTION_RAT, 1:2)1   -0.4436**        -0.3570**
##                             (0.1963)          (0.1757)
## lag(ABSORPTION_RAT, 1:2)2    0.1963***        0.1962***
##                             (0.0410)          (0.0422)
## lag(RFI, 1:2)1              -0.2328**         -0.2390*
##                             (0.0916)          (0.1389)
## lag(RFI, 1:2)2               0.0297            0.0405
##                             (0.0655)          (0.0725)
## lag(AO, 1:2)1              -0.0217           -0.0117
##                             (0.0378)          (0.0559)
## lag(AO, 1:2)2              -0.0081            0.0143
##                             (0.0494)          (0.0510)
## lag(AE, 1:2)1              -0.4262            0.7231
##                             (0.3289)          (0.4652)
## lag(AE, 1:2)2              -0.1408            0.1986
##                             (0.1965)          (0.1504)
## lag(FR, 1:2)1               0.1108            0.1574
##                             (0.1329)          (0.1764)
## lag(FR, 1:2)2               0.0388            0.0669
##                             (0.0753)          (0.0927)
## lag(NC, 1:2)1               0.0013           -0.0003
##                             (0.0026)          (0.0027)
## lag(NC, 1:2)2               0.0012            0.0002
##                             (0.0027)          (0.0028)
## lag(Committee, 1:2)1        0.0071
##                             (0.0058)
## lag(Committee, 1:2)2        0.0057
##                             (0.0050)
## lag(RFI_Committee, 1)                         0.0139
##                                               (0.0288)
## lag(AO_Committee, 1)                          0.0019
##                                               (0.0100)
## lag(AE_Committee, 1)                         -0.2203***
##                                               (0.0819)
## lag(FR_Committee, 1)                         -0.0245
##                                               (0.0462)
## lag(NC_Committee, 1)                          0.0009
##                                               (0.0010)
## -------------------------------------------------------------------------
## Sargan                     20.3394           20.921
## Sargan (p-value)            0.3744            0.3412
## AR(1)                      -1.04             -1.31
## AR(1) p-value               0.3005            0.1917
```

(Researcher, 2024)

Based on results in table 3, in the case of model one at 95% confidence level, the results indicated that the instrument used in the dynamic panel model was valid based on the sargan test (sargan = 20.3394, p = 0.3744). This showed that the valid instrument assumption in the model was well satisfied which signified that the instruments were exogenous. The test for absence of autocorrelation in the first and second lags showed that there was no enough evidence at 95% confidence level to suggest presence of autocorrelation in the first lag (p = 0.3005) and second lag (p = 0.1131). The autocorrelation assumption at both the first and second lag was properly fulfilled. At 95% confidence level the results showed that there was a joint significant effect of the variables on AR at time t ($\chi^2(14)$ = 179.64, p <0.05). This showed that the model was valid and that model coefficients are different from 0. There was a negative persistent significant effect exhibited by lag 1 ($\alpha_1 = -0.4436, p = 0.0238$) while lag 2 exhibited a positive persistent significant effect ($\alpha_1 = 0.1963, p < 0.05$). However, persistent effect in lag 1 was higher than that of lag 2. Due to significance of both lag 1 and lag 2 of AR in the model it shows that the persistent effect did not end on lag 1 but was transferred further to the second lag of AR. This means that the autocorrelation effect could only be corrected with both lags being included in the model. From table 3 the following model was extracted:

$$\widehat{A.R_{it}} - -0.4436 O.S.R_{it-1} + 0.1963 O.S.R_{it-2} - 0.2328 RFI_{it-1} + 0.0297 RFI_{it-2} - 0.0217 A.O_{it-1}$$
$$- 0.0081 A.O_{it-2} - 0.4262 A.E_{it-1} - 0.1408 A.E_{it-2} + 0.1108 F.R_{it-1}$$
$$+ 0.0388 F.R_{it-2} + 0.0013 C.R_{it-1} + 0.0012 C.R_{it-2} + 0.0071 A.C.S_{it-1}$$
$$+ 0.0057 A.C.S_{it-2}$$

At 95% confidence level the results indicated that the coefficients of audit committee size are not significant at both lag 1 ($\beta = 0.0071, p = 0.2184$) and lag 2 ($\beta = 0.0057, p = 0.2554$). This showed that audit committee size for the two previous financial years had no significant effect on AR for the present financial year and thus it showed that it was not an independent variable.

Having confirmed that audit committee size was not an independent variable. The study moved to confirm whether it was a moderating variable for AR based on model 2. For model 2 at 95% confidence level, the results showed that the instrument used in the dynamic panel model was valid based on the sargan test (sargan = 20.921, p = 0.3412). This indicated that the valid instrument assumption in the model was fulfilled. The test for lack of autocorrelation in the first and second lags showed that there was no sufficient evidence at 95% confidence level to suggest presence of autocorrelation in the first lag (p = 0.1917) and second lag (p = 0.1113). The autocorrelation assumption at both the first and second lag was properly satisfied. At 95% confidence level the results showed that there was joint significant effect of the variables on AR at time t ($\chi^2(17)$ = 192.3032, p <0.05). This showed that the model was valid and that model coefficients are different from 0. There was negative persistent significant effect exhibited by lag 1 ($\alpha_1 = -0.3570, p = 0.0422$) while lag 2 exhibited a positive persistent significant effect ($\alpha_1 = 0.1962, p < 0.05$). However, persistent effect in lag 1 was higher than that of lag 2. Due to the significance of both lag 1 and lag 2 of AR in the model it shows that the persistent effect did not end on lag 1 but was transferred further to the second lag. From table 3 the following model was extracted:

$$\widehat{A.R_{it}} = -0.3570 O.S.R_{it-1} + 0.1962 O.S.R_{it-2} - 0.2390 RFI_{it-1} + 0.0405 RFI_{it-2} - 0.0117 A.O_{it-1}$$
$$+ 0.0143 A.O_{it-2} + 0.7231 A.E_{it-1} + 0.1986 A.E_{it-2} + 0.1574 F.R_{it-1}$$
$$+ 0.0669 F.R_{it-2} - 0.0003 C.R_{it-1} + 0.0002 C.R_{it-2}$$
$$+ 0.0139 RFI_{it-1} * A.C.S_{it-1} + 0.0019 A.O_{it-1} * A.C.S_{it-1} - 0.2203 A.E_{it-1}$$
$$* A.C.S_{it-1} - 0.0245 F.R_{it-1} * A.C.S_{it-1} + 0.0009 C.R_{it-1} * A.C.S_{it-1}$$

At 95% confidence level, the coefficient of the interaction between RFI and audit committee size at first lag was not significant ($\beta = 0.0139, p = 0.6293$). This showed that the interaction between RFI and audit committee in the previous financial year had no significant effect on AR in the present financial year. The coefficient of the interaction between AO and audit committee size at first lag was not significant ($\beta = 0.0019, p = 0.8488$). This showed that the interaction between AO and audit committee in the last financial year had no significant effect on AR in the current financial year. The coefficient of the interaction between AE and audit committee size at first lag was significant ($\beta = -0.2203, p = 0.0072$). This showed that the interaction between AE and audit committee in the previous financial year had a negative significant effect on AR in the present financial year.

The coefficient of the interaction between FR and audit committee size at first lag was not significant ($\beta = -0.0245, p = 0.5962$). This showed that the interaction between FR and audit committee in the last financial year had no significant effect on AR in the present financial year. The coefficient of the interaction between CR and audit committee size at first lag was not significant ($\beta = 0.0009, p = 0.3570$). This showed that the interaction between CR and audit committee in the previous financial year had no significant effect on AR in the current financial year. Given that the coefficient of audit committee size and AE had a significant effect on AR it indicated that audit committee size had a minimal moderating effect on the relationship between forensic accounting techniques and financial performance of counties in Kenya.

5. Conclusion

The study concluded that counties should adhere to the public sector accounting standards. The counties should put in place an efficient and qualified independent audit committee that will oversee financial processes. This will ensure that financial records are checked by an independent body to ensure that information provided is accurate, this will minimize financial crimes and improve the performance of counties. This was clear as the study found audit committee size moderates the relationship between forensic accounting techniques and financial performance of counties in Kenya. The members should be at least three and a maximum of 5 members that meet regularly at least 4 times in each financial year.

6. Recommendation

The study recommends to county leadership through the governor, senators, members of county assembly should ensure that each county has a fully functional audit committee that is independent. An audit committee that is fully functional will ensure financial irregularities are flagged on time to ensure that counties are financially healthy. The counties will then be able to perform its duties well and ensure citizens receive good services.

Institute of Certified Public Accountants of Kenya should also ensure that they sensitive the counties in Kenya to put in place a fully functional audit committee in compliance with the county acts, the members should be independent and well equipped. They should be mandated to attend ICPAK trainings to improve their knowledge The senate should issue tough penalties to counties that do not comply. Given senate is the major oversight body of the counties they should come up with mechanisms to ensure each county has an audit committee. It had been 9 years since counties became effective at the time the study was conducted but still most counties still did not have a well constituted and fully functioning audit committee.

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