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EFFECT OF FORENSIC FRAUD INVESTIGATION ON FINANCIAL PERFORMANCES OF SUGAR PROCESSING FIRMS IN WESTERN KENYA

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Abstract: *According to statistical evidence, global fraud causes the world to lose up to 5% of its annual revenues, which amounts to a loss of $3.7 trillion of Gross World Product. This has exposed the failure of statutory auditors to meet the expectations of users of accounting data combating financial crimes. Kenya's corporations have also been affected by various types of fraud, which has put pressure on the financial and accounting profession. The collapse of well-known organizations due to fraud and financial malpractices has highlighted the importance of financial performance. Previous studies have suggested that Forensic Accounting Techniques can be used to detect and prevent fraud. Therefore, the main objective of this study was to determine the effect of Forensic Accounting Techniques on the financial performance of sugar processing companies in Western Region, Kenya with a specific objective to evaluate the effect of Forensic Fraud Investigation on financial performance of the sugar firms. The target population consisted of 108 members of the management team, finance and account department, and audit department, who were stratified into lower, middle and upper levels. A pilot study was conducted with 10 respondents. A census of the remaining target population was taken for data collection purposes, utilizing questionnaires and descriptive measurements of the mean and standard deviation. Inferential analysis was performed using correlation and multiple regression analysis, and the results were presented in tables and charts. Regression results show that forensic fraud investigation affects financial performance positively and significantly.*

Keywords: *Forensic Accounting Techniques, Forensic Fraud Investigation, Financial Performance*

1. Forensic Accounting Techniques

Statistical evidence suggests that globally, fraud causes a loss of up to 5% of total earned revenues annually, equivalent to a fraud loss of $3.7 trillion of Gross World Product (Ogutu & Ngahu, 2016). Notably, high-profile companies globally such as Enron, WorldCom, Global Crossing in the USA, Parmalat in Italy.

Globally, empirical researchers and practitioners agree on the significance of forensic accountants in the comprehension of the elements of fraud and other economic crimes (Singleton and Singleton, 2010). The fundamental explanation behind this is perpetrators of fraud are becoming smatter and are therefore taking advantage of weak internal controls (Carroll, 2015). As asserted by Bhasin (2013), in order for forensic accountants to be able to identify fraud indicators referred to as red flags, it is necessary that they are trained in areas of investigation, detection and various specialized auditing techniques, tools and skills.

It has been shown in numerous nations that forensic accountants make conclusions, compute values and recognize unpredictable examples or suspicious exchanges by fundamentally breaking down the financial related information. In most European states, Forensic Accounting Techniques gives an accounting assessment to the court for solving disputes in unequivocal cases and it in like way gives the courts with clarification the deception that has been committed (Adrian, 2009). This is the inspiration driving why Forensic Accounting Techniques may assume a crucial role in identifying and decreasing accounting frauds in many European countries.

In Kenya, high-profile economic crimes and fraud such as the Eurobond, NYS, and Afya House scandals have resulted in substantial losses of funds. The PwC's Global Economic Survey (2018) reveals that Kenya has the second-highest reporting rate of economic crimes in Africa and the world after South Africa (75% and 77%, respectively). This highlights the failure of the traditional audit approach to combat fraud, which necessitates a more sophisticated approach to meet curb these vices. However, statutory auditors have been reluctant to take responsibility for deterring fraud and preventing such malpractices. They only claim to be responsible for the reliability of financial information and the preparation of financial statements in compliance with Generally Acceptable Accounting Principles (GAAP), the company's accounting policies, and Auditing Standards.

Studies done in the Kenyan setting additionally report blended discoveries on the role of Forensic Accounting Techniques in organizations. Wanjohi (2011) conducted an investigation on the justification for utilization of Forensic Accounting Techniques in improving operational performances in Kenya and presentation of forensic audit as a system in increasing operational performances. He established that Forensic Accounting Techniques are significant in enhancing operational performances. Kimani (2011) studied misrepresentation risk evaluation plan for Barclays bank of Kenya. He discovered that fraud risk assessment gave an exhaustive orderly model that could be used in counteracting further deceitful exercises. Gakenia (2008) studied the role of Forensic Accounting Techniques in engaging the insufficiency of extortion examiners and observed that learning of Forensic Accounting Techniques in Kenya can lessen corporate distortion and bungle.

But different assessments had been done on the possibility of Forensic Accounting Techniques, most of them by far have not focused on the effect of Forensic Accounting Techniques strategies on distortion recognition explicitly in enterprises in Kenya particularly the sugar firms.

2. Financial Performance

Financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. Financial performance is the company's ability to manage and control its resources (IAI, 2016).

Modern organizations are constantly besieged with fraud from sources both internal and external sources. Even though frauds perpetrated by external sources can be quite serious, however, most notable frauds in organizations are usually the inside job. A chronicle of most fraud cases in organization as explained by Moses (2019). Bringing to the knowledge of the people about financial statement fraud and diversion of resources of enterprise has taken a centre stage by many researchers in the recent past (Aburime, 2012).

Previously, incidence of financial statement frauds have risen greatly, (Rezaee, 2005). In the years past, fraud has gone up systematically both on frequency of occurrence and magnitude of losses. Frauds in financial dealings affect those that own the business, lenders and people that the business owes including the workers of the firm. As a result, those who do business with those enterprises express loss of confidence in financial information (Khanh, 2010).

In the realm of fraud control, Okereke et al., (2011), examined the relationship between Audit Quality practices in Nigerian Deposit Money Banks (DMBs) vis-à-vis their financial performances (2002-06).Utilizing primary data, the use of questionnaire administered to Corporate Affairs Managers in twenty-four Deposit Money Banks (DMBs) and from the Central Bank of Nigeria (CBN) annual report and statement of accounts and Nigeria Stock Exchange (NSE) Fact Books. The data was descriptively and quantitatively analyzed and the hypotheses tested using Statistical Package for Social Sciences (SPSS).The regression result of our analysis and test indicated a significant relationship and positive correlation between Audit Quality and banks" performance.

3. Forensic Fraud Investigation and Financial Performance

Fraud investigations also called fraud examinations refers to processes of resolving allegations of fraud from the time they begin to the point of disposition, they are used to expose fraudulent offences and to punish perpetrators for the deceitful and illegal acts. Fraud investigations are necessary to ensure the right individual is punished for any wrongful act committed, and to ensure that the victim of fraud is get the required justice.

Onuorah and Bimobowei (2015) examined the effect of forensic accounting practices in fraud detection in Nigeria. The data was collected from primary and secondary sources and the primary data were collected with assistance of well-structured questionnaire of three sections administered to twenty-four banks in Port Harcourt the capital rivers state in Nigeria. The data collected from the prepared questionnaire were analyzed with descriptive statistics augmented Dickey-fuller ordinary least square and arranger casualty. The study measures fraudulent activities by looking at the forensic services. The result revealed that the application of forensic account services affects the level of fraudulent activities of banks. Because of this finding, the study concludes that forensic accounting skills such as investigative skills provide banks with the necessary tools to prevent fraudulent activities and improve financial performance.

In another study in Nigeria, Jonathan and Osasumwen (2010) conducted a study on the application of forensic accounting services by cooperate organizations in Nigeria is effective in deterring fraudulent practices and to find out the perception of the users of quality of forensic accounting services in Nigeria. The study objectives were achieved by employing combination of structured interview and tailored questionnaire used as the instrument to collect data from the population of companies quoted on the Nigeria stock exchange. The study group target population into banking, insurance, petroleum food and beverages and brewing where samples were taken using simple random sample. The simple regression model (SRM) was employed as the statistical tool for the testing of the hypothesis. The study revealed that forensic auditing skills such as investigative skills have no significant relationship with financial performance.

Taking a different perspective, Boritz *et al.*, (2008) investigated forensic accountants and auditors in terms of the relative merits of involving fraud specialist during the planning stage in assisting auditors by developing an audit plan that will effectively identify fraud. They found that involving the fraud specialists in the risk assessment process leads to better results than simply consulting with them by providing summery risk assessments and asking for input. The study, examined forensic accounting in the dimension of public acceptance towards occurrence of fraud detection. The study found that the most emphasized subject was that the forensic accounting was conducted to improve the understanding in detecting and reducing accounting fraud. The study found that it has been practiced by audit firm as one of the tools to investigate a company's financial statements for fraudulent activities as requested by certain parties. In conclusion, in terms of their study, they emphasized that the forensic accounting activities such as investigative accounting and litigation support support will enrich the organizational performance.

Koh, Arokiasamy and Suat (2019) studied forensic accounting and public awareness towards fraud detection in Malaysia. This study concentrated on people's awareness, understanding and acceptance on the role of forensic accounting in Malaysia. The study found that unobserved loopholes for accounting is because of the fact that Malaysian organization are novice and inexperience in doing business. Further, the study reported the acknowledgment level by people in general with the act of forensic accounting as the fundamental device in researching organisation's record to recognize fraud in Malaysia. The study concluded that forensic accounting exercises, for instance investigative activities and litigation support are basic for a wide range of organisations for their long-term survival that will eventually improve their hierarchical performance. Additionally, they have urged that all companies must put in practice forensic accounting as a device to improve transparency, credibility and accountability which in turn will have a positive effect on financial performance.

4. State of sugar companies in Kenya

Although only 10% of Kenya's total land receives adequate rain, the agricultural sector remains dominant, contributing 26% of the country's Gross Domestic Product (GDP) and 27% indirectly through linkages with agro-based and associated industries (KESREF, 2019). The service industry is the only sector that contributes more to Kenya's GDP than agriculture. Small-scale farmers, who account for approximately 75% of total agricultural output, dominate the sector, which absorbs over 50% of the labor force. Additionally, the sugar sector in Kenya supports at least 6 million Kenyans directly or indirectly, with over 250,000 small-scale farmers relying on the sub-sector for their livelihoods (KSB, 2020). Therefore, to promote economic growth and development in Kenya, it is crucial to improve agricultural productivity (Nyoro, 2020).

Sugarcane cultivation in Kenya is concentrated in the former western and Nyanza provinces, with additional cultivation taking place in parts of Nandi, Kericho, Narok, Kwale, and Tana-River counties. Small-scale farmers contribute up to 90% of the total cane production in the country, while large-scale farmers and sugar factory-owned farms (known as nucleus estates) account for the remaining 10% (KSB, 2013). This is in contrast to other COMESA countries where sugar firms' plantations (nucleus) account for at least 60% of the total sugarcane production.

There are currently thirteen operational sugar factories in the Kenyan industry, which include Chemelil Sugar Factory, Kibos Sugar and Allied Factories, Muhoroni Sugar Factory (currently in receivership), Mumias Sugar Factory, Nzoia Sugar Factory, Sony Sugar Factory, South Nyanza Sugar Factory, Sukari Industries Limited, Transmara Sugar Factory, West Kenya Sugar Factory, Butali Sugar Factory, Kwale International Sugar Company and the proposed Kisii sugar factory. Despite the industry's critical role in the economy, it has been underperforming, resulting in persistent production deficits. The lack of productivity growth in the industry is due to various factors, including insufficient cane supply, cane poaching, underutilization of factory capacity, lack of technological progress, and poor managerial capacities. (KSB, 2021; Mukolwe, 2015).

The sugarcane yield in the Kenyan sugar industry is currently 65 tonnes per hectare, which is significantly lower than the potential yield of 100 tonnes per hectare in rain-fed conditions (KESREF, 2019). For example, at Mumias Sugar Company (MSC), the yield has decreased from 137 tonnes per hectare in 1973 to an average of 58 tonnes per hectare in 2018 (Mumias Sugar Company, 2019). Research conducted by Wawire et al., (2019) identified that this decline was due to poor strategies between farmers and firms, resulting from negative perceptions among farmers towards contracted sugarcane farming. In contracted sugarcane farming, both the farmer and sugar milling firm have management responsibilities to ensure increased cane production. Due to limited studies, there is still a lack of understanding of the impact of Forensic Accounting Techniques on financial performance, particularly in the Kenyan sugar firms located in Western Kenya.

5. Statement of the Problem

Several studies conducted both locally and globally indicate absence of consistency on the impact of Forensic Accounting Techniques aptitudes on misrepresentation counteractive action. Okoye (2011) in his assessment of Forensic Accounting Techniques as a tool for fraud detection skills and prevention found that Forensic Accounting Techniques aptitudes and explicitly auditing aptitudes do essentially diminish the event of extortion cases in the public sector and thus improving the financial performance of organizations. Across the world management have been put under pressure due to the occurrence of these high-profile financial malpractices in the full glare of the statutory auditors, who give a clean bill of health with the unqualified reports in the organizations, due to these a need has arisen to put in new measures in the form of Forensic Accounting Techniques to support the conventional auditing so as to help reduce fraudulent and financial malpractices.

This need of effective forensic accounting techniques has led to several studies being carried out to determine the effectiveness of Forensic Accounting Techniques. Okunbor and Obaretin (2010) who inspected organizations from Nigerian Stock exchange demonstrated that the use of Forensic Accounting Techniques isn't viable in checking deceitful exercises. Islam, Rahman and Hossan (2011) in their examination in Bangladesh observed that Forensic Accounting Techniques as a fraud detection device has importance to endeavors for fighting misrepresentation and debasement in Bangladesh. Muthusamy (2010) found that auditing aptitudes of the forensic accountants were necessary for Operational performance. Njanike *et al.* (2019) discovered that forensic audit divisions experience various difficulties, among them being absence of materials assets, specialized expertise, obstruction from the executives and misty acknowledgment of profession. Onuorah and Bimobowei (2012) inspected the impact of Forensic Accounting Techniques abilities in extortion discovery in Nigeria. The investigation found that found that Forensic Accounting Techniques abilities such as investigative aptitudes give banks the fundamental instruments to forestall deceitful exercises. In another study in Nigeria, Jonathan and Osasumwen (2010) and Kamau (2013) revealed that forensic auditing skills such as investigative skills have no significant relationship with fraud counteractive action.

Albeit various investigations had been done on the idea of Forensic Accounting Techniques, a large portion of them had not concentrated on the impact of Forensic Accounting Techniques on misrepresentation discovery explicitly in Corporations in Kenya particularly the sugar firms. Along these lines, the present examination seeks to fill this gap by exploring the effect of Forensic Accounting Techniques on operational performance in corporation in Kenya more specifically sugar firms in Western Kenya.

6. Research Hypotheses

H_o1: Forensic Fraud investigation has no significant effect on operational performance in sugar firms in Western Kenya.

7. Study Scope

The scope of this study is evaluated in terms of subject, area and time. In terms of subject, this study is based on the broad subject of accounting and specifically in the sub-branch of Forensic Accounting, which is a sub-field of auditing. The study will be conducted in sugar firms in western Kenya. The firms are chosen because of the high cases of fraud that have been reported in the sugar company, and because of the researcher's familiarity with the area that made data collection easier. The study will be conducted between the months of February and April 2023.

8. Descriptive Statistics

The objective of the study was to determine the effect of forensic fraud investigation on financial performance in sugar processing companies. The descriptive statistics for forensic fraud investigation practice based on the responses received is shown in Table 1 below.

Table 1: Descriptive Statistics on Forensic Fraud Investigation

Statement	N	Min	Max	Mean	Std. Dev
There is use of specialized investigators in investigating economic crimes	78	4	5	4.06	0.891
Expert lawyers are called to advice on the cases	78	2	4	3.48	0.979
Forensic investigators are given space to work on their own	78	2	5	2.94	1.091
Competent investigators are always called for consultation	78	4	4	2.58	0.923
The company has known investigation experts who are always consulted on how to detect fraud	78	1	2	1.94	1.237
Weighted Average				**3.00**	**0.732**

Table 1 above reveals that the respondents agreed that there was use of specialized investigators in investigating economic crimes (M= 4.06, S.D. = 0.891). The respondents neither agreed nor disagreed that expert lawyers are called to advice on the cases (M= 3.48, S.D. = 0.979), and that forensic investigators are given space to work on their own (M= 2.58, S.D. = 0.923). The respondents however disagreed that the sugar companies had known investigation experts who are always consulted on how to detect fraud (M=1.94, S.D. = 1.237).

The weighted average of 3.00 (S.D. = 0.732) shows that the respondents generally neither agree nor disagreed on whether there existed proper fraud investigation or not in the sugar factories.

Descriptive Statistics for Financial Performance

The study's dependent variable was Financial Performance. The results are presented in Table 2.

Table 2: Descriptive Statistics for Financial Performance

Statement	N	Min	Max	Mean	Std. Dev
The sugar firm has continuously reduced costs and subsequent increase in profits.	78	2	3	2.97	0.194
The quality of our operations is improving over time.	78	1	4	2.72	0.626
Our customers are indicating satisfaction with our products over time	78	2	3	1.59	0.431
Over time there has been a sustained increased market share for the company	78	2	4	1.53	0.567
There is an improved cash flow for the company over the time.	78	1	3	1.94	0.797
Weighted Average				**2.42**	**0.831**

Table 2 shows that financial performance in the sugar companies is very low. This is shown by the weighted average mean of 2.42 which indicates that the respondents generally disagree that financial performance is effective in the sugar factories.

9. Correlation Analysis

Correlation analysis shows the direction, strength and significance of the relationships among the variables of study (Sekaran, 2000). To establish whether there was a relationship between the variables, a correlation analysis was conducted. The correlation analysis shows the direction, strength, and significance of the relationships among the variables of the study. A positive correlation indicates that as one variable increases, the other variables will also increase. On the other hand, a negative correlation indicates that as one variable increases the other variable decreases (Sekaran, 2003).

The model that was to be fitted is as follows:

$\boldsymbol{Y = \beta_0 + \beta_1 X_1 + \varepsilon}$

Where: -

Y = Financial performance

$\boldsymbol{X_1}$ = Forensic Fraud Investigation

$\boldsymbol{\beta_0}$ = The Constant Term

$\boldsymbol{\beta}$ = Coefficient of independent variables

$\boldsymbol{\varepsilon}$ = Error term which was assumed to have a mean of zero and a constant variance.

Table 3 shows results of the correlation analysis.

Table 3: Correlation between Study Variables

	Y	X_1
Y	1	
X_1	$.646^{***}$	1

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

From the results in Table 3, several conclusions can be drawn. First, it has been indicated that Forensic Fraud Investigation (X_1) is significantly and positively correlated with financial performance in Sugar factories in western Kenya this is indicated by the correlation coefficient of 0.646 that is significant ($p< 0.01$). This implies that there is a strong and significant positive association between Forensic Fraud Investigation and financial performance in Sugar factories in western Kenya.

10. Regression analysis

The study objective was to determine the effect of forensic fraud investigation on financial performance in Sugar factories in western Kenya Regression results in Table 4 show that forensic fraud investigation affect financial performance positively and significantly ($\beta = 0.391$, $p = 0.038$). This implies that a unit increase in forensic fraud investigation results in a 39.1% increase in financial performance when all factors are held constant. The result is in agreement with those Kamau (2013) who evaluated firm performance with respect to fraud investigation of two selected units firms in India using various ratios as a tool of analysis. From the study, it was concluded that the overall performance regarding fraud investigation was better in terms of efficient utilization of inventories. The results also agree with those of Wanjohi (2016) who studied the effect of fraud investigation on fraud investigation in Saccos in Nairobi.

Sugar factories in western Kenya.

Table 4.10: Regression Coefficients

		Unstandardized Coefficients		Standardized Coefficients		
Model		**Beta**	**Std. Error**	**Beta**	**t-stat**	**Sig.**
1	(Constant)	0.376	0.286		1.315	.002
	X_1	0.391	0.165	0.308	2.370	.038

Dependent Variable: Y

From Table 4 above, several inferences can be derived. The constant term in the regression equation of 0.376 indicates the level of financial performance that is in existence in the organization.

11. Summary

The study objective was to determine the effect of forensic fraud investigation on financial performance of Sugar factories in western Kenya. Regression results show that forensic fraud investigation affects financial performance positively and significantly. This implies that a unit increase in forensic fraud investigation results in a significant increase in financial performance of Sugar companies when all factors are held constant.

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