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Influence of Board Characteristics on Financial Performance of Deposit Taking Savings and Credit Cooperative Societies in Western Kenya

By Victor Mogusu Nyangau & Dr. Josephat Oluoch Oluoch

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Abstract- Deposit taking Savings and Credit Cooperatives form an integral part of Kenya’s economy by mobilizing savings and promoting credit creation. Statistics indicate that DT-Saccos contribute up to 23% to Kenya’s GDP, both directly and indirectly. However, the performance of a number of these DT-SACCOs in the western part of Kenya have shown to be reporting reduced profits indicating challenges with their financial performance. Prior studies on the performance of these SACCOs have not focused on the role of board characteristic on financial performance of these SACCOs. The purpose of this research was to examine influence of board characteristics on financial performance of deposit taking SACCOs in the country. Specifically, this study examined board accountability, corporate size and board independence and how they affect the performance. The study was anchored on the Agency theory and the Stakeholder theory. The study adopted a descriptive survey design to address the research problem. The target population consisted of 19 deposit taking Saccos licensed Saccos by SASRA and operating in Western Kenya.

Influence of Board Characteristics on Financial Performance of Deposit Taking Savings and Credit Cooperative Societies in Western Kenya

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Influence of Board Characteristics on Financial Performance of Deposit Taking Savings and Credit Cooperative Societies in Western Kenya

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Abstract: Deposit taking Savings and Credit Cooperatives form an integral part of Kenya’s economy by mobilizing savings and promoting credit creation. Statistics indicate that DT-Saccos contribute up to 23% to Kenya’s GDP, both directly and indirectly. However, the performance of a number of these DT-SACCOs in the western part of Kenya have shown to be reporting reduced profits indicating challenges with their financial performance. Prior studies on the performance of these SACCOs have not focused on the role of board characteristic on financial performance of these SACCOs. The purpose of this research was to examine influence of board characteristics on financial performance of deposit taking SACCOs in the country. Specifically, this study examined board accountability, corporate size and board independence and how they affect the performance. The study was anchored on the Agency theory and the Stakeholder theory. The study adopted a descriptive survey design to address the research problem. The target population consisted of 19 deposit taking Saccos licensed Saccos by SASRA and operating in Western Kenya. The data was collected by content analysis and recorded in a data collection sheet, from the annual financial statements that are filed with the SASRA every year for a period of 5 years, from 2015 to 2019. This gave 95 data points. Reliability and Validity was conducted using research experts. The data was analyzed using descriptive statistics such mean, standard deviations. Regression analysis was used in a regression model by t-test and f-test to test the relationship of the independent variable with the dependent variables. The study found that board accountability had a positive significant effect on financial performance as $\beta = 0.320, p = 0.021, t = 2.078$. This implies that a unit increase in board accountability leads to a 32.0% significant increase in financial performance in the DT-SACCOs. Board size was found to have a positive significant effect on financial performance as indicated $\beta = 0.101, p = 0.01, t = 5.941$. This implies that a unit increase in board size led to a 30.2% increase in financial performance. The study found that board independence had a positive significant effect on financial performance as $\beta = 0.308, p = 0.06, t = 3.020$. This implies that a unit increase in board independent leads to a 10.1% significant increase in financial performance in the DT-SACCOs. It is concluded that board accountability is a significant variable in influencing financial performance of the DT-SACCOs in Western Kenya; board size is an important aspect in influencing the financial performance of the DT-SACCOs; DT-SACCOs’ financial performance is influenced significantly by board independence. The study recommends; DT-SACCOs make their boards more accountable if they seek to improve their financial performance; DT-SACCOs increase their board size to harness the advantages of larger board sizes if they seek to improve their financial performance; board independence be improved in order to improve the financial performance of the DT-SACCOs.

I. Introduction

a) Background of the Study

Corporate governance dictates that board characteristics should govern the corporation with the focus of maximizing the wealth of the shareholders and in the best interest of the society (Vafaei, Mather & Ahmed, 2012). The board characteristics are well enshrined in the corporate governance structures of SASRA’s corporate governance guideline that specifies the distribution of rights and responsibilities among different sub committees of the board of directors. The board of directors of savings and credit cooperative societies are required to govern these entities in such a way as to ensure that their growth and sustainability is achieved and that members’ funds are secure. Corporate governance evolved as result of emergence of large corporations. Earlier the business entity and the owners where the same, the problem raised as a result of large firms’ owners lacked the time to manage their business operations thus had to hire managers to manage the activities of the corporation, this necessitates the separation of ownership from control and management of corporation hence development of agency theory (Wanyoike, 2013).

Corporate governance involves the relationship of shareholders and other stakeholders (Yazdanfar, 2013). It is instrumental in setting business goals and provides tools to attain its objectives and monitor performance. Financial performance is key monetary distress in firms. Choices are made within and the organization this helping selecting investment opportunities and management decisions which are supported by performance (Vafaei, 2012). The activities of any organization depend on accounting perspectives without considering the time and efficient elements which is inherent in financial performance (Bryson, 2018). Therefore, business should be accountable to a wider audience than simply its shareholders. Urged that performance is attained when indicator such profitability,
return on assets (RAO), return on equity (ROE) and return on sales (ROS) are realized in the firm.

Financial performance focuses on constructing a community in which an appropriate equilibrium is brought about between financial, social and ecological targets. A firm that is well managed, helps the organization to build reputation and create growth in financial operation, new markets and products to meet stakeholder’s expectations. Furthermore, performance is about creating a real value which is measured by profitability, liquidity, solvency, efficiency and effectiveness over time frame (Kolk, 2017). However, little is known on the influence of board characteristics on financial performance of deposit taking savings and credit co-operative societies in western Kenya.

The debate of some of the world’s leading corporations over the past decade and more is raising concerns over the way business performance is being conducted and its sustainability (Burritt & Schaltegger, 2010). The failed corporations reflect a trend of eroding business values that is heavily inclined towards short term gains, unmindful of long term impacts a trend wherein the concerns of shareholders are overlooked to increase the business profitability (Burritt & chaltegger, 2010).

It is essential for the company to develop a code of accountability and dependability towards their stakeholders and the society at large (Ioannou & Serafeim, 2017). Businesses are required to demonstrate a high level of ethics in their decision-making and actions, thus moving beyond the core objective of profit maximization, this is extremely important in order to ensure continuous support and confidence of the stakeholders and consequently, the performance in the organization.

It is worthwhile to note that factors that affect financial performance are country specific. It depends on the factors like corporate governance practices, law and regulations, development of the capital market among others (Cornelius and Bruce, 2017). These practices encourage investors to gain confidence and ease decision making in the organization resulting to a balance and competitive advantages for firms to survive as well as to obtain an acceptable profitability rate and economic equilibrium (Cornelius & Bruce, 2017).

Board characteristics are enhanced by corporate governance in the manner in which organization are directed, controlled and to account for the running of the organizational activities (Anand, 2008). Governance practices entail policies; authority, accountability and leadership are exercised in a corporation. Organization’s governance is of great importance for large public firms, where the separation of ownership from management is wider than for private companies. In public companies raises capital through stock markets and institutional investors hold vast portfolio of shares and other investments. Therefore, there is need to develop policies and guidelines to safeguard shareholders interest hence management should adhere with policies and systems such as accountability, transparency and independency of the board (UK Corporate governance code 2010).

The matters of governance practices happen to be important issue in several countries and the reaction has varied from a legislative response like the Sarbannes-Oxley Act in the USA (Wintoki, 2014), to an adoption of best practice principles in countries like the UK and Australia. Research has shown that companies or organizations are the most effective framework for mobilization of financial resources for investment and wealth creation endeavors.

In Nigeria, the Securities and Exchange Commission (SEC), the apex capital market regulator has implemented a new policy directing all quoted companies to release their financial results simultaneously to all stock market operators including the financial press in order to be transparent and discourage abuses of the system in terms of access to market information in the past (Okeahalam & Akinboade, 2017). Zimbabwe, Ghana, Uganda and South Africa have put in place standard guidelines to promote good corporate governance practices. Training, technical and awareness raising support has been extended by the World Bank and the commonwealth Secretariat to various African countries such as Botswana, Senegal, Tunisia, Mali, Mauritania, Cameroon, Gambia, Mozambique, Mauritius, Sierra Leone and Zambia to help them put in place appropriate mechanisms to promote good corporate governance practices (Kaufmann and Bellver, 2016). However, in Kenya such programs is still limited and it need to be explored.

Kenyan government has stepped up the pressure on corporations to measure the impact of their operations on monetary and non-financial reporting. This will enable the management to be responsible to their stakeholders. The most notable shift has been the Constitution of Kenya 2010, The Capital Markets Act, the Central Bank of Kenya Act, among other acts is which promote the interest of those who have direct control over a firm and other stakeholder.

Corporate governance enhances the performance and ensures the conformance of organization by creating and maintaining a business environment that motivates managers and entrepreneurs to maximize firms’ operational and long-term productivity growth (Hussain et al., 2018). According to Baumgartner and Rauter, (2017) measures derived from adopting ethical codes such as corporate accountability, corporate transparency and board independence are usually considered as good strategies that lead to better management, and increase utility maximization (Orlitzky et al., 2017). Governance practices measures are very limited in Kenyan’s market.
The market demand for ethical investment has increased and suggesting that investment decisions are influenced by both financial and moral consideration for business entity to endeavor.

i. Board Characteristics

Board characteristics include issues related to board independence, diversity of board members and CEO duality (Jones, 2006). The relationship between board characteristics and financial performance has for long been a subject of significant debate in the corporate finance literature (Boubaker, Nguyen & Nguyen, 2012). Since the introduction of SASRA in 2010 there has been a great difference in financial performance of the Saccos registered and the ones not registered as deposit taking Saccos and are under regulation this is because SASRA has put in place some specific board characteristics that the members of the board should possess. As a result, many scholars and policy makers believe that attributes of board of directors have influence in strategic decision making and subsequently Sacco performance. In this instance, the different attributes of the board of directors’ impact organizational performance differently owing to their different orientations. This study aimed at examining the influence of board characteristics on the financial performance of the deposit taking Saccos in western Kenya.

Board structure functions play major role in any business entity to perform and maintain the firm’s integrity, reputation, accountability of the firm operation. Good board characteristic protects the investors rights and enhances financial, capital formation and maximization of shareholders wealth which create greater investors’ confidence. Furthermore, governance promote self-regulation and build corporate image which boost greater access to financial markets for capital formation.

ii. Financial Performance

Financial performance is a tool of measuring accountability of a firm’s policies and operational activities over an identified period in financial terms. In listed firms’ financial performance is a tool for financial management, which serves as a major objective (ROA) and also is a mechanism for motivation and control within the organization according to Adams (2017). Many perspectives of financial performance are considered to provide a comprehensive image of firm operations in relation to multiple expected returns. Therefore, measure of how well a firm performs is indicated by its profits, asset utilization, liquidity and leverage of the firm over a given period of time.

Financial performance also measures corporation’s general fiscal strength for a particular period and implement it to make appraisal with other companies on how they performed during the previous years. Therefore, all measures of financial performance should take in aggregation (Mwangi, 2013). Performance is used to indicate firm’s success, conditions and compliance of accounting policies and standards.

iii. Board Characteristics and Financial Performance

In May 2016 SACCOS made arrangements to launch its first sustainability index, which prompted Saccos to practice corporate board characteristics standards. This was set in order to measure SACCOS’s financial performance, in line with board characteristics to enhance transparency and accountability of the management that will attract more investors to exercise their business in Kenya.

iv. SACCOS in Kenya

In Kenya, firms particularly deposit taking Saccoshave portrayed quality of board characteristic especially saccos like teachers and farmers Saccos which have shown and reported performance growth in their business activities. SASRA in 2017 issued guidelines and regulation framework to ensure that all Saccos conform to these standards.

In an effort to promote governance in SACCOS, capital markets issued guidelines and principle to all SACCOS to shows that, management should be responsible to its shareholders and other stakeholders to promote companies’ performance. Ameer and Othman, (2012) argued that financial presentation of firms can be assessed to reveal much concerning board characteristics guide and regulate the firms regarding the performance. Ameer and Othman, (2012) argued that financial presentation of firms can be assessed to reveal much concerning board characteristics guide and regulate the firms regarding the performance. Ameer and Othman, (2012) argued that financial presentation of firms can be assessed to reveal much concerning board characteristics guide and regulate the firms regarding the performance. Ameer and Othman, (2012) argued that financial presentation of firms can be assessed to reveal much concerning board characteristics guide and regulate the firms regarding the performance. Ameer and Othman, (2012) argued that financial presentation of firms can be assessed to reveal much concerning board characteristics guide and regulate the firms regarding the performance.

b) Statement of the Problem

Board characteristics of SACCOS are expected to manage and maintain improved financial performance. In practice, financial performance of SACCOS is decreasing even though board characteristics are in operation. Board characteristic is a worldwide discourse due to the fact that financial constraints have taken Centre stage in the world (Council, 2017). Most practical research has been done on other effects of firms’ performance (Bhagat and that Bolton, 2008; Brown and Caylor, 2014). A few researches for firms on developed and developing market have explored this area in Saccos (Abor, 2013). No such study has been conducted to look into board characteristics and financial performance for SACCOS.

Therefore, it is noted that the stability and cooperation between shareholders and managers of an organization is fundamental to the success of an organization. Board characteristics have become of great importance recently due to the development brought about globalization concerning the harmonization of procedures and structures and with the emergence of global norms of board characteristics (Cytonn investment, 2017). Despite the reviews of these
reports, it is observed that Saccos lack board characteristics policies which are associated with fall of revenue. Therefore, this research seeks to find out whether board characteristics influence financial performance of deposit taking Saccos in Western Kenya.

The target population of this study was 19 DT-SACCOs in western Kenya region. The study was conducted on DT-SACCOs in western Kenya due to the fact that, of the twelve DT-SACCOs that operated on half-year restricted licenses, which expired in June, 2017 and were thereafter renewed for another half-year to the period December 2017, two of them operate in Western Kenya and they had the same challenge in 2016. A DT-SACCO is given a restricted license if it has liquidity challenges, high non-performing loans ratio and if it is undercapitalized.

The DT-SACCOs was studied because of the important role they play in enhancing the livelihoods of the people in western Kenya region. Statistical information shows that SACCOs averagely control 30% of Kenya’s Gross Domestic Product (GDP) and accounts for 80% of the total accumulated savings (Ayieko, 2016). Additionally, the DT-SACCOs are selected since their financial data which was used in the present study is clearly determined.

c) Objectives of the Study
The following objectives of the study were used;
1. To determine the influence of board accountability on financial performance of deposit taking Saccos in Western Kenya.
2. To assess influence of board size on financial performance of deposit taking Saccos in Western Kenya.
3. To determine the influence of board independence on financial performance of deposit taking Saccos in Western Kenya.

II. Literature Review

a) Introduction
This chapter is organized into three main parts. Section 2.2 discusses the theoretical literature specifically discussing the theories the study is based on. Section 2.3 discusses determinants of financial performance and 2.4 details empirical literature on the board characteristics and seeks to establish the effect of board characteristics on financial performance of deposit taking Saccos in Western Kenya.

b) Review of Theories
This study will review stakeholder theory and agency theory with their concepts.

i. Stakeholder Theory
Stakeholder theory was proposed by Donaldson and Preston (1984), it states that stakeholder theory is a principle that ensures firms are accountable to their owners, and balance different interests between stakeholders. It explained three aspects of the theory: instrumental power, descriptive accuracy and normative validity (Parmar, et al., 2010).

It was based on the first propositions that organization is a structure for checking the relationships between the practice of stakeholder management and the achievement of a firms’ performance. The second aspect of the theory is used to explain particular business entity character. The normative validity is a basis of the theory used to understand the purpose of companies. Because the goal of corporation is key issue of corporate governance’s practices, the normative validity is the vital core of the model. Therefore, the aspect instrumental and normative aspects are the main fields to evaluate in the stakeholder’s theory (Ackermann & Eden, 2011).

It assumes that stakeholders are from shareholders, customers, suppliers, investors, and government with common objectives upon with the firm depends for the achievement of its goals. The stakeholder theory stated that the outcome produced by the directors and the management of organization will contribute and check balance of power between the interests of all constituents of companies in addition the stakeholders should behave in a socially and responsible manner by developing a conducive business environment to gather the interest of all the stakeholders. It argued that present theories are contradictory with both the quantity and kinds of change that are happening in the business surroundings. A new theoretical framework is required. The stakeholder theory, according to Freeman referred stakeholder as “any group or person who is affected by the achievement of an organization’s objectives. (Friedman & Miles, 2006). While the definition of stakeholders is quite wide, there are five types of stakeholders that have been accepted widely, namely, shareholders, customers, employees, suppliers and the public.

It is criticized that that stakeholders have different interest between each other, not always positive to the organization and its partners. This theory is also focusing on the interests of all legitimate stakeholders. Individuals, groups and organizations are easily defined as stakeholders because of their involvement in the value producing processes of the firm. They include employees and managers, shareholders, financiers, customers and suppliers. These stakeholders may be referred to as primary stakeholders or legitimate stakeholders (Phillips, 2017). Important aspect of stakeholder theory is that it is comprehensive in its approach.

The model requires that stakeholders should be treated with fairness, honesty, and even generosity. Other business disciplines tend to focus on one or a subset of stakeholder groups: human resource theory focuses on employees, marketing theory focuses on
customers, financial theory focuses on shareholders and financiers. The theory advocate treating all stakeholders well will creates synergy (Tantalo and Priem, 2016). The aim of this theory is for the organizations to consider and acknowledge their features individually which affects their performance in relationship to external factors, and information on what improves the financial performance in an organization.

It characterized is based on the believe that firms cannot survive and endeavor if it has only shareholders’ capital contribution and does not have any participation from other stakeholders such as employees, creditors, suppliers and customers, etc. Hence, it is necessary for companies to take into consideration the interests of stakeholders in their investment activities that affect performance and prosperity directly. Since the theory asserts that if the interests of stakeholders are concerned by directors, not only stakeholders’ value will be increased but also the social wealth will be enhanced ultimately (Mallin et al., 2015).

Unlike the stakeholder theory, the shareholder primacy does not take non-shareholder interests as a component of directors’ duties to operate the business, so the social wealth increases only depend on maximizing owners’ interests. The idea is criticized that the shareholder primacy cannot enhance the social wealth, for the reason that this theory merely produces provisional earnings performance, and discourages other stakeholders’ work incentives by ignoring their assistance to corporations. as a result, it is argued that the stakeholder theory is a more reasonable and beneficial theory. In other words, the stakeholder theory acknowledges that in order to assist corporations with succeeding in efficiency productiveness and success, of stakeholders are recognized as a key instrument to make firms objectives come true in the organization. Stakeholder theory is a superior theory of the corporate objective (Poole & Van de Ven, 2014).

This theory has contributed to the research objectives since its alleged two main purposes: first is to tie up the economics and ethics together; second is to ensure that directors consider all stakeholders interests when making corporation decision. It has been emphasized specially that the increase of stakeholders’ interests is the final goal of operating companies; directors cannot use their interests for maximizing shareholders’ interests (Van den Berghe and Levrau, 2014).

The importance of stakeholder theory in every corporation falls under three categories. The first explains maps and to the ways business entities actually carry their financial social and environmental activities putting consideration of the input and output while safeguarding the interest of all stakeholders. Furthermore, the theory suggested most management believes a singular focus on shareholder interests is unethical and hinder firm’s performance. Secondly a good association between a company and its stakeholders is seen as essential frame to increased efficiency and effectiveness for better business performance and eventually higher profits. Finally, the moral or ethical issue is observed frame usually that each stakeholder group has essential value, and that no group’s interests are more or less important than any other, and this suggested by fairness in the organization(Ackermann & Eden, 2011).

ii. Agency theory
The theory was proposed by Jensen and Meckling (1976) states that management has no direct or significant ownership without agents in making decisions. The agency relationship came into existence due to large numbers of shareholders to manage the activity of a single firm, also the owners lacked technical skills to and experience in their capacity in addition most of the shareholders are geographically isolated and may not have time to effectively run the business operations (Clarke, 2014).

It is characterized by the deviation pertaining interests would sustain residual costs, resulting in suboptimal performance (Fama, 1980). The form is normally adopted when defining the relationship between principal the shareholders and agents who are employed by the principal who delegate the running of the business operations. The agents mainly constitute directors’ managers and other employees (Van den Berghe and Levrau, 2014). The theory suggests that the agents in a firm can be self-interested and pay less concentration to the interests of the owners of the company. The owners anticipate the agents to a make decision which are fruitful of their firm contrary the agent may not make decision in the best interest of the shareholders, this situation it is likely to observe differences emerging from the shareholders and the management. When the agent has privilege power to make decisions, managers act out of the interest of the principal (Means, 2017). In trying to achieve their own gains, firms will therefore raise in such areas as structuring contracts, managing the behavior of supervisors may lead to losses of occasioned by suboptimal decisions.

Top management act as boundary that ensures the finances used are secured and also helps in giving that enhance firm’s performance. Such acts include: prompt payment of workers, managing the behaviors’ of those in charge, remuneration and the fulfillment of its roles (Mallin et al., 2015). Such setbacks, agency theory were introduced mainly as separation of ownership and control (Bhimani, 2008); the agents are guided and controlled by principal –made rules with aim of maximizing the shareholders’ value.

According to (Clarke, 2014) urged that agency theory is of importance to firms since it shows the
correlation between the owners and the organization structure. Finally, the model portrays the management has more of a self–interested, individualistic and also bound by rational that rewards and punishment appear to be priority (Jensenn and Meckling, 1976). Jensenn and Meckling (1976) argued that the agency problem characterizes the board characteristics choices of firms (principals) and the resulting behavior of CEOs (agents). This is because CEOs seek to raise their service at the saccos of firms by withholding effort or increasing their own compensation through self-dealing (Hendry, 2016). When owners do not have perfect information about CEO behavior, self-interested CEOs conceal selfish actions, and firms bear the cost.

The theory is relevant in identifying situations in which the principal and agent are likely to have conflicting goals and then describing the governance mechanisms that limit the agent’s self-serving behavior. Positivist research is less mathematical than principal agent research. Also, positivist researchers have focused almost exclusively on the special case of the principal-agent (Berle & Means, 2013). It is argued that agency theory establishes the importance of incentives and self- interest in organization thinking, and reminds us that much of organizational life, whether is based on self-interest (Perrow, 2016).

The hypothesis is premised on the initiative that in a present business, there is a separation of ownership and management. Within this corporate structure, it is likely that the interests of the owners and the management will diverge. When they have the privileged power to make decisions, managers act out of self–interest and pay less attention to the interests of the owners. This chase of self-interest increases in such areas as structuring contracts, monitoring and in scheming the performance of agents, which may lead to incentive problems occasioned by sub-optimal decisions. The fiduciary role board’s is monitoring the CEO, setting reward levels for top management, approving major strategic decisions and monitoring the implementation of strategies on behalf of the shareholders (Boyd et al., 2011).

c) Conceptual Frameworks

The conceptual framework of the study is depicted by board characteristics as independent and financial performances depicted as a dependent variable.

**Independent variable**

- **Board Accountability**
  - Board members accountability
  - Accounting procedures
  - Number of board meetings

- **Board Size:**
  - Number of directors in the board
  - Board diversification

- **Board Independence**
  - Ratio of Independent directors to total number of directors

**Dependent variable**

- **Financial performance**
  - Profitability
  - Return on assets

![Figure 2.1: Conceptual Framework](image-url)

i. **Corporate Accountability and Financial Performance**

Friends of the Earth (2016) discusses corporate accountability as those practices that affected the activities such as board accountability, accounting procedures and board meetings that are carried out by the Sacco management and hold them to account for their operations. This concept demands fundamental changes to the legal framework in which companies operate. These include placing environmental and social duties on directors to complement existing duties on financial matters, and legal rights for local communities to seek compensation when they have suffered as a result of directors failing to uphold those duties.

ii. **Board Size**

The size of the board is measured by the number of directors serving on such boards. There is a point of view that larger boards are appropriate for corporate execution since they have a scope of ability to enable settle on to better choices, and are more difficult for an efficient CEO to rule. Be that as it may, late intuition has inclined towards minor boards (Khaled, 2014).
iii. **Board Independence**

The board of directors is a group body that act in the best interest of shareholders. The board requires the combination of executive and non-executive directors to pursue the shareholders’ interest. The non-executive directors on the board will not be able to exercise their duties effectively, unless they are independent in terms of board composition, performance and be able to supervise the audit report and provides unbiased business opinion (Gray et al., 2001).

d) **Empirical review**

i. **Corporate Accountability and Financial Performance**

The conception of corporate accountability refers to the legal obligation of a company to do the right thing. The goal of corporate accountability is to assure that company’s products and operations are serving the interests of society and are not detrimental in any way. This thought addresses the dilemma of those companies which repudiate to act responsibly; it also addresses the situations in which companies and employees are held guilty by the competitive demands of the economic system and forced to choose the end result (Vintila & Gherghina, 2012).

Luo (2016) observed that corporate accountability is the degree to which a corporation is transparent in its company actions and responsibility to those it serves. Generally, corporate accountability entails financial reporting standards, principles and guidelines which create significant effects or implications of the wellbeing of shareholders and other major stakeholders.

Bovens and Schillemans, (2014) argued that corporate accountability is a concept that explains accounting standard and policies that regulate the aspect of financial reporting in the books of accounts of any firm’s operation According to Bovens (2015) firms are answerable not only to owners but also to all stakeholders a business functions most successfully when all stakeholders’ providers of resources and skills, work together toward the long-term mission. A central obligation for corporate accountability is the firm’s ability to indicate or provide relevant and accurately information to the shareholders, and other stakeholders.

Butler, Frost and Macey (2012) in their study on board accountability argued that companies should volunteered to give account of their activities and impacts to improve their social and environmental practice, the corporate accountability conception believes that corporations must be held to account implying enforceability. If we, the citizens as the prime stakeholders are still not serious about sustainable development, social and environmental justice, there can’t be anything more compelling to the corporations to take seriously this issue. The time has now come to cumulate the efforts of strict governmental legislations that would facilitate people to hold corporations accountable for their social and environmental performance and to compel them to work to attain good financial reports.

Robert M. Bushman (2017) conducted a study on board accountability in the USA and argued that in United States good financial accounting information is obtained through corporate accounting and external reporting systems that measure and routinely disclose audited, quantitative data concerning the financial position and performance of publicly held firms. Audited balance sheets, income statements, and cash-flow statements, along with supporting disclosures, form the sophisticated financial disclosure regime is not cheap. Countries with highly developed securities markets allocate significant resources to produce and adapt the use of extensive accounting and disclosure rules that firms must follow. funds expended are not only monetary, but also include opportunity costs connected with use of highly educated individual capital, include accountants, lawyers, academicians, and politician to achieve firm objectives set available to investors and regulators.

In general, country’s accounting systems are created on the basis of financial system, legal system, taxation system and professional system, societal culture and external relations. These factors mutually choose a national accounting framework that includes accounting objectives, regulation mode and regulation strictness; this structure in turn affects firm decisions on a diversity of issues such as expenditures, fixed assets, inventory valuation, accounting for income taxes and foreign currency translation. The more diverse intercontinental stakeholders a firm has, the greater the differences in standards of corporate accountability (Murthy & Mouritsen, 2011).

Various scholars acknowledge the number of duties done within an organization that affects its roles within the firm which benefits the customers than then owners (Crane & Matten 2016) argued that organizations are not tools for the owners instead they are there to serve the needs of the public and therefore responsible for to the management and the customers. This depends on structure and system established by the organization. Management has responsibility to run the organization but also create awareness of its products and services.

Moreover, various owners know more about the duties and the effects of those roles to the organization. Such owners aim to improve the needs of the organization and to be responsible to their roles. Gray et al., (2001) questioned financial performance functions by bringing the results instead of management responsibility, the management considers the stakeholders in organization Agrawal and Knoeber
(2016) started with the aim of creating a contract between a company and its stakeholders.

Financial growth has become a perception of commercial and investment SACCOS, shows lacks of adequate corporate governance practices attentions portrait in accounting references such as durability seems to be more disputable with several meaning (Aras & Crowther, 2008). Corporate accountability plays a significant role in the provision of basic needs of every business activity, the quality and level of trust in businesses and the creation of a Sacco’s of shared value. The perspective of corporate accountability has changed dramatically in the last 20 years while the societal construct of the corporation has not transformed because the creation of the Limited Liability Company. It trusted financial institutions failed us, our governments have less fiscal and social capital to fix problems and traditional macro-economic solutions of consumption-led growth seem less plausible.

Utting and Clapp (2008) in their study on board accountability stated that corporate accountability encourages independent monitoring in complaints dealings and compliance with local international law and other agreed standards, mandatory reporting and redress for malpractice. Companies have enormous impact on people’s lives and the environment in which they operate. At times the impact is positive in the economy due to jobs creations, technology improvements, amenity enhancements and investment in the community benefits gives huge positive enhancement for the people who live there. But there are numerous instances of corporations exploiting weak and feebly enforced domestic regulation with shocking effects on people and communities.

Stenberg (1997) urged that neoclassical vision of corporate accountability sees companies as accountable only to shareholders since they are the legitimate owners of the firm instead of entreating firms to be accountable of their activities and impacts, and willingly improve their social and environmental performance the corporate accountability movement believes business must be entrusted to their activities (Bendell, 2003).

Strict liability rules should be made and imposed on to companies for their decisions and actions extend to each and every country in which they invest or operate for health hazards or loss of life, property damage, and environmental damage, for holding them responsible. Corporate environmental polluters must be held liable for environmental degradation and pollution beyond national boundaries even that may be a result from carelessness. Corporations accountable of precedent damage, even for some decades back, should also be held legally responsible for their actions (Rhoades, Rechner & Sundaramurthy, 2000). Public and communities should be given the proper backup of legal resources where those are need the efficiency of corporate accountability progression depends on the stakeholders’ expectations and how successful the organization communicated adequately and turn the stakeholders’ expectations into business goals, objectives and management plans, to improve the firm’s performance outcome and provide for measures that generate and motivate a commitment management team.

ii. Board Size and Financial Performance

As indicated by Manafi, et al. (2015), Transaction Cost Economics (TCE) hypothesis sees the firm as a governance structure. The hypothesis contends that specific economic benefits to the firm leaves when a firm embraces exchanges inside as opposed to external. Manafi et al. (2015) additionally expresses that as the firm winds up noticeably bigger, the more exchanges it embraces and it extends up to the point where it ends up noticeably less expensive or more effective for the exchange to be attempted externally. Stiles and Taylor (2011) bring up that this hypothesis is worried about managerial discretion and it accept that directors are given to self-interest seeking and moral hazard and that they operate under bounded rationality. The hypothesis views the boards of directors as an instrument of control consequently, administrators tend to sacrifice rather than maximize fully proceeds (Mullins, 2014).

The size of the board is measured by the number of directors serving on such boards. There is a point of view that larger boards are appropriate for corporate execution since they have a scope of ability to enable settle on to better choices, and are more difficult for an efficient CEO to rule. Be that as it may, late intuition has inclined towards minor boards (Khaled, 2014).

Porta, Lopez- de-Silanes and Shleifer (2010) contend that substantial boards are less powerful and are simpler for a CEO to control. At the point when a board gets too huge, it winds up plainly hard to coordinate and process issues. Minor boards additionally decrease the likelihood of free riding by individual directors, and increment their basic leadership forms. Exact research underpins this. As indicated by Hambrick and Jackson (2000), among the substantial U.S. industrial corporations, the market value firms with littler boards more highly Ren, (2014) additionally discover negative connection between board sizes and benefit when using sample of small and mid sized Finnish firms. In Ghana, it has been distinguished that little board sizes improve the execution of microfinance institutions (Dalton & Dalton, 2013).

Chirchir (2014) aired the above discoveries in firms recorded in Kenya, Singapore and Malaysia. In their investigation, they found that firm valuation is most astounding when board has five directors, a number considered moderately minor in those business sectors.
In a report, Adams and Mehran (2015) found that, firm execution is decidedly related with little board measure rather than large boards. Jensen and Macklin (2016) demonstrated that an esteem significant trait of corporate boards is its size. Organizational theory surmises that bigger gatherings set aside generally longer opportunity to settle on choices and, accordingly, more input time (Kajola, 2013).

Peace (2011) recommend an ideal board size in the vicinity of seven and nine executives. In this regard, exact examinations have demonstrated that the market value firms with generally little board sizes (Francis, 2016 and Leighton, 2010). Consequently, as board size builds board action is required to increment to make up for increasing process losses. The contention is that large boards are less powerful and are less demanding for a CEO to control. The cost of coordination and handling issues is likewise high in large boards and this settles on basic leadership troublesome. Then again, littler boards diminish the likelihood of free-riding and consequently have the inclination of improving firm execution (La Porta, 2012).

At the point when the idea of board is acknowledged, it can be naturally accepted that a bigger board is ideal, as this empowers the consideration of more various board individuals bringing diverse areas of expertise, expanded board measure causes expanded issues of coordination and correspondence, undermining board viability in monitoring agents (Enobakhare, 2010). Moreover, bigger sheets have been observed to be portrayed by diminished capacity of executives to censure top directors and to dissect and talk about firm execution truly (Lipton and Lorsch, 2012).

Xiang (2010) contended that extensive board will probably confront high expenses to monitor the firm and they are more averse to have viable capacity when the extent of the board is more than seven or eight individuals. The agency model recommends that as board size turns out to be substantial, the agency problem related to director free riding increases and the board becomes more symbolic and less a part of the management process (Hermalin & Weisbach, 2011). Substantial boards will probably be controlled by the CEO as opposed to the board monitoring and controlling the administration. This will give the directors the spaces to seek after their own interest as opposed to adjusting to the interests of the investors and administrators prompting increment in the agency problems and thereby lower companies’ performance execution (Hambrick and Jackson, 2000).

Kajola (2013) contends that as board size winds up noticeably bigger it will be more troublesome for board individuals to achieve consensus because of the more assorted opinions and decisions. In this manner, large boards are slower and less proficient in settling on choice. These activities may expand the agency conflict, in light of the fact that with less coordination and correspondence this will prompt decline the board individuals’ capacity to control and monitor management which may bring about more regrettable firm execution.

Ahmed (2016) contend that detailing and receiving new thoughts and concurring on various feelings are more averse to occur in large boards, which will bring about less change of the board function to furnish the directors with smart thoughts and contributions. In this manner, the contention in the board implies that board individuals are more averse to work in light of a legitimate concern for the investors therefore agency problem increase. Laing & Weir (2012) presumed that to-date there is as yet a level headed discussion about the ideal size of the board. At the end of the day, there is no particular formula that ought to be embraced or taken after to characterize the number of executives inside the board. Yermack (2016) detailed that large boards are described by less soundness and poorer correspondence which may diminish the board individuals’ capacity to monitor the administration effectively. This cause greater agency problem and costs resulting in lower firm performance. In this manner, identified to the agency problem, large boards result to numerous directors’ free-riding problems, increment in the sharing costs and internal conflicts among executives. Therefore, these hazards will impact in increasing the agency problem and thereby minimizing returns and worse firm performance.

Be that as it may, CEO control is normal for smaller boards, as the all the more capable position of CEOs in such boards empowers them to abrogate choices made by the board as per their own advantages, expanding agency problems and correspondingly undermining the execution of the firm (Miller and Matsa, 2013). This outcome additionally affirms resources reliance hypothesis’ recommendation, inferring that large boards, due to some degree to their viable linkage (Pfeffer, 2012) and assorted variety (Goodstein, 2014), improve the probability of organization’s execution by enhancing organization’s capacity to co-opt the turbulent condition (Hambrick and Jackson, 2000). This is as per the part of resource dependency hypothesis that attests that the decent variety and more compelling union of large boards boosts firm execution by transcending challenging market conditions (Goodstein, 2014 and Pfeffer, 2012); the shortage in linkage among smaller boards can deny undermine their entrance to credit. Also, large boards mitigate the agency problem by playing out their strategic function all the more successfully, which is fundamental amid times of financial turbulence or distress to reduce agency problems (Mintzberg, 2013). Under such conditions, the absence of decent variety in littler sheets expands vulnerability concerning vital improvement (Goodstein, 2014; Mintzberg, 2013; Pearce and Zahra, 2012). This at last expands the office
issue and undermines execution in firms with smaller boards. The top managerial staff assumes an essential part in corporate governance, such as hiring, firing, and assessment of management, or assessment and project selection (Adams, Hermalin, & Weisbach, 2010).

Kiel and Nicholson (2013) research the connections between board structure and corporate execution in 348 of Australia's biggest publicly recorded organizations. They locate a positive connection between board size and firm execution for vast firms. Adams and Mehran (2015) locate a positive connection between board size and execution in the US saving money industry. Fama and Jensen (2013) look at the impact of corporate governance mechanisms, for example, board size, on firm execution from 2005 to 2010 in Pakistan, and they likewise locate a critical positive connection between firm execution and board size. These outcomes bolster Zahra and Pearce's (2013) decision that there is a connection between board size and firm execution.

In any case, Aljifri and Moustafa (2012) ponder the impact of some interior and outer corporate governance mechanisms on firm execution (Tobin's Q) in an example of 51 firms in 2004. The exploration demonstrates that board size has a non-critical impact on execution. Lawal (2012) analyzes the significance of one corporate governance viewpoint in particular, board size of organizations recorded on Bursa Malaysia and applies linear multiple regression as the underlying statistical test. The author does not locate a huge connection between board size and firm execution in a sample of chose recorded organizations in Malaysia. This outcome is bolstered by Kajola (2013) who contemplates the relationship between the corporate governance systems and firm execution of a sample of 20 Nigerian recorded firms in the vicinity of 2000 and 2006. He doesn't locate a noteworthy connection between the board size and firm execution of the recorded organizations in the Nigerian Stock Exchange. This backing other research, which finds that a huge board size can prompt the free-rider issue (Loderer and Peyer, 2012).

The two most imperative elements of the top managerial staff are those of advising and monitoring (Raheja, 2015). Consequently, the top managerial staff has been viewed as an essential corporate governance mechanism for adjusting the interests amongst directors and all stakeholders in a firm (Heenetigala and Armstrong, 2011). Zahra and Pearce (2013) characterized two principle parts of the board: it should control the operations of the firm and the exercises of the CEO; and it should improve the image of the firm and support a decent connection between the partners and firm management to encourage the organization culture. This demonstrates these board functions could build up the execution of a firm. Small board size was favored to advance basic, certified and scholarly consideration and inclusion among individuals, which apparently may prompt successful corporate decision-making, monitoring and enhanced execution (Lawal, 2012).

iii. Board Independence and Financial Performance

Huafang and Jianguo (2014) affirmed that the proportion of board independence was associated with performance. This is further supported by some other studies reported that voluntary disclosure increases with the number of independent non-executive directors. However, the relationship between independent directors and corporate governance remains unexplored in Kenya.

Matengo (2008) did a study on the relationship between Corporate Governance practices and performance in relationship with board composition: the case of banking industries in Kenya. Whereas there has been renewed interest in Corporate Governance, relevant data from empirical studies are still few. There are therefore limitations in the depth of our understanding of corporate governance issues. With such an environment in the background, together with the week judicial system, the interest of both minority shareholders and creditors could be compromised hence no research has been carried out on all sectors of the firms as the previous researchers has been only concentrating in financial and service sectors thereby ignoring other sectors like motor industries i.e., the recent CMC motors and Nyagah stock brokers.

Shah et al., (2011) in their study on board independence observe that boards mostly compose of executive and non-executive directors. Executive directors refer to dependent directors and non-Executive directors to independent directors at least one third of independent directors are preferred in board, for effective working of board and for unbiased monitoring. Dependent directors are also important because they have insider knowledge of the organization which is not available to outside directors, but they can misuse this knowledge by transferring wealth of other stockholders to themselves.

Bonn, Yokishawa and Phan (2014) found that board size and performance (measured by market-to-book ratio and return on assets) was negatively correlated for Japanese firms but found no relationship between the two variables for its Australian counterpart. However, contrary to the Japanese firms the ratios of outside directors and female directors to total board numbers have a positive impact in the Australian sample (Bonn, 2014). Contrary to the above findings, a positive impact on performance was recorded with larger board size.

Beiner, Drobetz, Schmid and Zimmerman (2014) studied the Corporate Governance and firm valuation by using a broad Corporate Governance index and additional variables related to ownership structure,
board characteristics, and leverage to provide a comprehensive description of firm-level Corporate Governance for a broad sample. Corporate Governance index by one point caused an increase of the market capitalization by roughly 8.6%, on average, of a company’s book asset value.

Zheka (2014) studied the effect Corporate Governance on performance by constructing an overall index of Corporate Governance and shows that it predicts firm level productivity in Ukraine. The results imply that a one-point-increase in the index results in around 0.4%-1.9% increase in performance; and a worst to best change predicts a 40% increase in company’s performance. Using data on companies in many African countries, including Ghana, South Africa, Nigeria and Kenya, Kyereboah-Coleman (2014) shows that better governance practices like board independence are associated with higher valuations and better operating performance.

Baker, Godridge, Gateman and Morey (2014) using a different data set from Alliance Bernstein, an international asset management company, with monthly firm-level and country-level rated board composition from emerging markets countries over a five-year period, reported a significantly positive relation between firm-level (and country-level) Corporate Governance practices suggested lower cost of equity for better governed firms in Kenya.

Wanjiku et al. (2011) researched out a study to establish the Corporate Governance practices on non-executive board and its composition in their firms to relationship with the growth of Companies listed at the Nairobi Securities Exchange using a causal comparative research design. The study focused on corporate communication, leadership and technology application. The study found a positive linear dependence of growth and Corporate Governance.

Ongore and K’Obonyo (2011) conducted a related study in Kenya to examine the interrelations among ownership, board and manager characteristics and firm performance in a sample of 54 firms listed at the Nairobi Securities Exchange. The findings from this study show a positive relationship between managerial discretion and performance. However, the relationship between ownership concentration and government on firm performance was significantly negative.

Mang’unyi (2011) carried out a study to explore the ownership structure and Corporate Governance and its effects on performance of firms. His study focused on selected financial institution in Kenya. His study discovered that there was significant different between Corporate Governance and financial performance of banks. The study suggested that business entities should encourage Corporate Governance to drive positive results to their potential investors and regulatory agencies as well as the government should encourage Corporate Governance to increase firm performance and create good relationship across all stakeholders.

Miring’u and Muoria (2011) urged that the effects of Corporate Governance on performance of profit-making corporations in Kenya. Using a descriptive study design, the study sampled 30 SCs out of 41 listed firms in Kenya and found that the relationship between financial performance, board composition and size. The study found a positive relationship between Return on Equity (ROE) and board compositions of all firms.

### III. Research Methodology

The descriptive research design was adapted. The target population in this study consisted of 19 deposit taking Saccos licensed Saccos by SASRA and operating in Western Kenya (SASRA, 2019). The data was collected from the annual financial statements that are filed with the SASRA every year for a period of 5 years, from 2015 to 2019. This gave 95 data points. The study used secondary data.

### IV. Results and Discussions

a) Descriptive Statistics

The data was first tested descriptively. Table 4.1 shows the results of the descriptive statistics. For each observation, $Y$ is the Dependent Variable (Financial Performance measured by Return on Assets), $X_1$ is Board Accountability measured by number of board meetings during the year, $X_2$ is the Board Size measured by the number of board members attending meetings during the year and $X_3$ is Board Independence measured by the ratio between independent directors and the total number of directors.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Y$</td>
<td>95</td>
<td>0.376</td>
<td>0.205</td>
<td>0.017</td>
<td>0.875</td>
<td>0.052</td>
<td>2.226</td>
</tr>
<tr>
<td>$X_1$</td>
<td>95</td>
<td>2</td>
<td>0.014</td>
<td>1</td>
<td>4</td>
<td>3.646</td>
<td>18.380</td>
</tr>
<tr>
<td>$X_2$</td>
<td>95</td>
<td>8</td>
<td>1.243</td>
<td>6</td>
<td>14</td>
<td>1.102</td>
<td>3.798</td>
</tr>
<tr>
<td>$X_3$</td>
<td>95</td>
<td>0.193</td>
<td>1.798</td>
<td>0.202</td>
<td>0.567</td>
<td>0.725</td>
<td>3.038</td>
</tr>
</tbody>
</table>

Source: Research Data (2020)
The results in Table 4.1 revealed that the mean financial performance measured by ROA for the 19 DT-SACCOs in western region was 0.375. The minimum reported Return on Assets was 0.017 while the maximum was 0.875. The Return on Assets was spread within a standard deviation of 0.20520 implying that there was a narrow deviation of the Return on Assets from the mean financial performance. This seems to imply that the average return for the assets used by the SACCOs was 0.375. This is low considering that the average ROA for SACCOs in Kenya is 0.5 (SASRA, 2019).

Likewise, the mean Board Accountability was 2. Board accountability was measured by the number of board meeting in the year. This implies that on average, the number of meetings in an average DT-SACCO operating in Western Kenya was 2. The minimum reported Board Accountability was 1 while the maximum was 4. The Board Accountability was spread within a standard deviation of 0.014 from the mean Board Accountability. This implies that the boards in the DT-SACCOs in the area don't have many board meetings. This implies that they may not be accountable.

The mean for Board Size was 8. The minimum reported Board Size was 6 while the maximum was 14. The Board Size was spread within a standard deviation of 1.243. The average board size for SACCOs according to SASRA report is 6. This implies that these SACCOs have a board size higher than the average board size among SACCOs in Kenya.

The mean Board Independence on the other hand was 0.193 with a minimum of 0.202 and a maximum of 0.567. This implies that for every board that was studied, 19.3% of the board directors were independent directors. The mean board independence for all SACCOs in Kenya is 25%. This implies that the average board independence for DT-SACCOs in Western Kenya is below that in SACCOs operating in Kenya. This may imply that the boards are not independent.

### Table 4.2: Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>X_1</th>
<th>X_2</th>
<th>X_3</th>
</tr>
</thead>
<tbody>
<tr>
<td>X_1</td>
<td>Pearson Correlation: .521**&lt;br&gt;Sig. (2-tailed): .000&lt;br&gt;N: 95</td>
<td>.521**&lt;br&gt;Sig. (2-tailed): .000&lt;br&gt;N: 95</td>
<td>.354*&lt;br&gt;Sig. (2-tailed): .023&lt;br&gt;N: 95</td>
</tr>
<tr>
<td>X_2</td>
<td>Pearson Correlation: .354*&lt;br&gt;Sig. (2-tailed): .023&lt;br&gt;N: 95</td>
<td>.224</td>
<td></td>
</tr>
<tr>
<td>X_3</td>
<td>Pearson Correlation: .658*&lt;br&gt;Sig. (2-tailed): .156&lt;br&gt;N: 95</td>
<td>.204</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Pearson Correlation: .489</td>
<td>.329</td>
<td>.201</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation results showed that: Board accountability at \( r = .521^* p = .000 < .05 \) had a strong, positive and significant relationship with financial performance. This implies that a unit increase in board accountability leads to a .521 significant increase in financial performance in the DT-SACCOS. The study agreed with Conyon and Schwalnach (2016) who found that there was a significant variation in the board transparency and performance evaluation of firm’s accountability.

Board Size had correlation coefficient value of \( r = .354, p = .023 < .05, \) but the relationship was weak with financial performance. Larcker, Richardson and Tuna (2014) also indicated that there was a statistically significant effect of Board independence on the performance of firms. The relationship between board
independence and financial performance was also found to be positive and significant with \( r = 0.658 \), \( \rho = 0.023 < 0.05 \).

The Table 4.3 presents the regression coefficients to test statistical significance of the independent variables in the model. This gives the estimates of independent variables, their standard error and t values. Table 4.5 summarized the testing of hypothesis on financial performance.

### Table 4.3: Regressions Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.432</td>
<td>.620</td>
<td>6.014</td>
<td>.000</td>
</tr>
<tr>
<td>1</td>
<td>( X_1 )</td>
<td>.320</td>
<td>.154</td>
<td>.042</td>
</tr>
<tr>
<td></td>
<td>( X_2 )</td>
<td>.308</td>
<td>.102</td>
<td>.277</td>
</tr>
<tr>
<td></td>
<td>( X_3 )</td>
<td>.101</td>
<td>.048</td>
<td>.170</td>
</tr>
</tbody>
</table>

Dependent Variable: Financial performance

The study found that board accountability had a positive significant effect on financial performance as \( \beta = 0.320, \rho = 0.021, t = 2.078 \). This implies that a unit increase in board accountability leads to a 32.0% significant increase in financial performance in the DT-SACCOs. This implies that the null hypothesis was rejected and the alternative hypothesis adopted. These results agree with those of Luo (2016) who observed that corporate accountability has a positive significant influence on performance of firms. Similarly, Bovens and Schillemans (2014) established that board accountability has a positive significant effect on firm performance.

Board size had positive significant effect on financial performance as indicated \( \beta = 0.308, \rho = 0.06, t = 3.020 \). This implies that a unit increase in board size led to a 30.2% increase in financial performance. This is in line with findings by Butler, Frost and Macve (2012) in their study on board size who argued that companies should volunteered to have higher board sizes which impacts to improve their social and environmental practice, the corporate accountability conception believes that corporations must be held to account implying enforceability.

The study found that board independence had a positive significant effect on financial performance as \( \beta = 0.101, \rho = 0.01, t = 2.104 \). This implies that a unit increase in board independence leads to a 10.1% significant increase in financial performance in the DT-SACCOs. This implies that the null hypothesis was rejected and the alternative hypothesis adopted. These results agree with those of Utting and Clapp (2008) who in their study on board accountability stated that corporate accountability encourages independent monitoring in complaints dealings and compliance with local international law and other agreed standards, mandatory reporting and redress for malpractice.

The resultant regression model took the form of \( Y = 0.432 + 0.320X_1 + 0.308X_2 + 0.101X_3 \). The study indicated that financial performance of SACCOs was given at 0.432 for board characteristics when the constant probability value was calculated at zero.

### V. Conclusion and Recommendation

a) Conclusion of Study

The study found that board accountability had a positive significant effect on financial performance. It is concluded that board accountability is a significant variable in influencing financial performance of the DT-SACCOs in Western Kenya.

Board size was found to have a positive significant effect on financial performance. It is concluded that board size is an important aspect in influencing the financial performance of the DT-SACCOs.

Likewise, the study found that board independence had a positive significant effect on financial performance. It is concluded that DT-SACCOs’ financial performance is influenced significantly by board independence.

b) Recommendation of Study

Based on the conclusions from the study, the following recommendations are made. The study found that board accountability had a positive significant effect on financial performance and is concluded that board accountability is a significant variable in influencing financial performance of the DT-SACCOs in Western Kenya. The study recommends that DT-SACCOs make their boards more accountable if they seek to improve their financial performance.

Based on the finding that Board size has a positive significant effect on financial performance and the conclusion that that board size is an important aspect in influencing the financial performance of the DT-SACCOs, it is recommended that the DT-SACCOs increase their board size to harness the advantages of larger board sizes if they seek to improve their financial performance.
Likewise, the study found that board independence had a positive significant effect on financial performance. It was concluded that DT-SACCOs financial performance is influenced significantly by board independence. It is recommended that board independence be improved in order to improve the financial performance of the DT-SACCOs.

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An Appraisal of Inventory Control and Management in Manufacturing Industries: Nigerian Experience

By Muhammad Usaini & Hassan Abdulrahman

Federal University Gusau

Abstract - This research was undertaken to explore the nature of efficient inventory control and management, focusing on Hamdala Sweet factory Ltd., for manufacturing industries. The study aims to examine and recognize the areas of the company's lapses and provide successful ways and strategies in which the manufacturing company can explore the inventory management service to achieve its goals. Adopted used different research instruments such as questionnaires and oral interviews in the conduct of this study to collect data from respondents, and a simple random sampling to select a sample size of 50. For this work, the statistical instrument used is chi-square. Based on the study, it found that inventory management in the manufacturing company plays a vital role. Well-functional inventory management following the recommendations will lead to proper management, thereby improving appropriate and productive production and ensuring equally effective, efficient and sufficient use of the manufacturing company's materials and resources.

Keywords: inventory, control, management, manufacturing industries.

GJMBR-D Classification: JEL Code: M41, F65

Strictly as per the compliance and regulations of:
An Appraisal of Inventory Control and Management in Manufacturing Industries: Nigerian Experience

Muhammad Usaini & Hassan Abdulrahman

Abstract: This research was undertaken to explore the nature of efficient inventory control and management, focusing on Hamdala Sweet factory Ltd., for manufacturing industries. The study aims to examine and recognize the areas of the company's lapses and provide successful ways and strategies in which the manufacturing company can explore the inventory management service to achieve its goals. Adopted used different research instruments such as questionnaires and oral interviews in the conduct of this study to collect data from respondents, and a simple random sampling to select a sample size of 50. For this work, the statistical instrument used is chi-square. Based on the study, it found that inventory management in the manufacturing company plays a vital role. Well-functional inventory management following the recommendations will lead to proper management, thereby improving appropriate and productive production and ensuring equally effective, efficient and sufficient use of the manufacturing company's materials and resources.

Keywords: inventory, control, management, manufacturing industries.

1. Introduction

Inventory is one of the critical assets of any industry. It accounts for a large proportion of overall investment in any business, including production, retail, wholesale, import, export, extraction, and mining. Inventories are the main must-business controllable (current) properties. It usually reflects the direct material used in manufacturing and, as a consequence, accounts for over fifty per cent of the overall cost of production in most industries. Instead of being invested in other company sectors, vast quantities of capital are typically locked up in raw material stocks. Therefore, one must pay a lot of attention to the company's inventory to prevent mismanagement of the fund. Inventory adjustments or changes are announced at the end of each year. Due to this renewable nature, inventory managers, especially those in the account section, should therefore strive as best as possible to monitor and regulate the inventory by paying constant and careful attention to it, unlike fixed assets that last in a business for years and are converted within days, weeks or months into goods. Inventories were then re-assessed weekly or monthly, depending on the type of business concerned. The exercised stock-taking is carried out to assess the stock amount at each specific moment. Many companies do not know that the equal amount of money and reckless handling, pilferage and degradation of such in-store products result in significant losses. Therefore, the store should be better run and more economically prepared. To realize the full advantage of the expensive benefit scheme, one can accomplish this by maintaining effective and reliable inventory management and control strategies that follow excellent and effective inventory management techniques; if the operations of the department of stores were ignored, mismanagement of such stock results in a significant loss of the company and even in the long-term liquidation. A well-managed inventory and control system means that the business is not in such a problem as under stocked if it has less stock as requested, resulting in loss of reputation and loss of profit in the long run, overstocking, on the other hand, as the company has more items than customers want. As far as warehousing costs, insurance costs, capital costs, pilferage, degradation and obsolescence are concerned, this would increase costs.

At this point, the need for inventory control and management in the manufacturing industries is critical. There is an issue in the manufacturing industries; i) Inadequate inventory control in the manufacturing industries. (ii) Reduction of a company's revenue or business due to inadequate inventories of finished products. (iii) Low manufacturing productivity is a result of the inadequate inventory used by the company. iv) Bad inventory management and control in the producing business.

The research work's key goals and objectives are to analyze the issue and future of manufacturing industries' inventory control and management. This study's primary goals are in line with this; i) To provide an overview of the issue affecting manufacturing industries in the field of inventory control and management. (ii) Investigate to what degree the finished product's inadequate inventory causes the loss of revenue to the company. (iii) To determine whether the company has suffered from poor inventory management
and control. (iv) To analyze, at the end of the period, the firm's approach in the valuation of its material goods.

II. Review

a) Introduction

A genuinely efficient inventory management system can minimize the dynamic inventory crucial to business success in preparing, implementing and managing a supply chain network. The incentive created by improving an organization's inventory management will dramatically enhance button lines' business performance. This chapter aims to analyze the definition of inventory, inventory forms, inventory classification, inventory purpose, inventory control, and also applies to inventory, inventory model, and inventory level related costs. The theoretical and methodological context is also part of it.

b) Concept of Inventory

For the effective functioning of manufacturing and retailing organizations, inventories are necessary. This is because, as part of their corporate activities, many businesses retain inventories. The most important part of the current assets of most companies, particularly manufacturing companies, are inventories. It is not necessary to overemphasize the need for management to maintain inventory control if adequately handled. A company that neglects inventory management may jeopardize its long-term profitability; its business will end up failing. Many professional bodies and academics have defined the concept of inventory in various ways. It was described as the quality of products and materials on hand by the Microsoft Encarta premium. The inventory of a manufacturer reflects those products which are ready and available for sale. According to Morse (2011), inventory is a general term that describes items stored in the storehouse and stockyards, which is typically intended to be connected to manufacturing or operating activities and the finished product waiting for customers to be dispatched. According to Nwaorgu (2005), inventory may be defined as a tangible asset kept for resale in the ordinary course of business or sale to produce goods and services. Inventory is the sum of these things, according to Jain (2008), to intangible property held for sale in the ordinary cause of business, held in the course of manufacturing goods and making service available for purchase. According to Ama (2000), however, inventory is the stock of items a business manufactures for sale and the components that make up the products. How much inventory level is calculated is crucial in manufacturing and retail, being an essential contribution to the budgeting system.

Management control is an operation to assess if resources have been given and development has been carried out according to the plan. If this is not the case, corrective action is taken. Control is the process of instituting and receiving input where appropriate to ensure that all parts of the organization operate successfully and progress towards the overall business's goals. Inventory management can be seen as an inventory strategy to secure the correct raw material quantity and quality in the right place. It can also be defined as the method used to monitor a company's stock investment in companies. This involves stock level recording and tracking, predicting potential demand and determining when and how many to order. Silver et al. (2011) described inventory control as the means to ensure that an organization's actual inventory flow conforms to the plan. According to Ezeani (2008), stock management is described as the store manager's technique to ensure that materials are made available without the risk of stocking out and overstocking when they are required at quantity, quality, and price. However, for inventory management to be successful, there must be a strategy to formulate targets in a company and prepare different budgets to achieve those goals. In an enterprise, inventory preparation is essential. A company should be able to assess the desired level of stock investment.

This condition will only be possible if the company ensures that supplies are adequate to fulfill production and distribution needs. The company must avoid keeping excessive excess inventories because they raise the risk of obsolescence. Against this, because of inadequate inventories, a business cannot afford the loss of revenue, and, at the same time, it is costly to have more lists on hand. Within the same organization, various divisions follow distinct views and attitudes towards inventories. For example, a company's sales department may want large stocks in reserve to satisfy practically any demand that comes. Similarly, the same organization's manufacturing department will need a large inventory of products to disrupt the production method. On the other hand, a minimum expenditure in stocks will often be required by the finance department so that the fund could be located elsewhere for another reason. Inventory management thus involves tracking and monitoring inventory levels, determining the optimum level and predicting future demand and decision-making. Inventory control's fundamental goal is to minimize stock-related costs.

c) Inventory Model

Attempts have been made to use analytical approaches to research inventory issues. Industries, where goods were made in lots and stored at a factory warehouse, acknowledged the research's absolute need. The method, known as the simple lot size formula, was obtained and further developed by the dependent author. Still, the most commonly accepted procedure is the fixed order quantity system known as the Wilson formula. It was derived from many organizations as an integral part of the inventory management system sold
by him. The recorder is put for quantity in this device whenever the inventory drops manually to the reorder stage. Another model was implemented later and is referred to as the "replenishment system." The reorder date is set in this method, and the reorder quality varies according to the inventory on hand.

d) Economic Order Quantity

The costs influenced by either the number of stocks kept or the number of orders placed will decide the optimum charge. There is a problem of minimizing the cost of maintaining inventories and the cost of ordering inventories at the same time since would need the few orders within the same period if more units are rated at a time, and this would mean a decrease in the cost of ordering. However, extensive average inventories must be retained when few orders are made, which will mean a rise in the keeping cost. Inventory planning aims to evaluate the most appropriate way to reduce the overall cost of ordering and keep costs. The model that minimizes the combined price is the quantity of economic order originally developed by F.W. in 1915. From Harris. The quantity of economic order can be defined as the ideal order size, which is the size of an order for goods that minimizes the cost of shipping, handling, and transport. Ezeani (2008) describes quantity in economic order as the quantity of material to be ordered simultaneously. It is known as the stock item's quantity to call to reduce inventory costs over the planning period for companies. Horngren (2007) wrote that the quantity model of economic order is a decision model that determines the optimal inventory quantity of products ordered under a specific set of assumptions.

e) Replenishment Model

In this model, inventory costs are not expressly considered, and there is no fixed reorder quantity. Still, inventory is reviewed at periodic intervals, and an order is imposed if there have been any sales since the last review. The replenishment level aims to maintain the list at a minimum level, maintaining some basic stock-out security and a specific periodic order review schedule.

f) Inventory Level

Re-order level: The reorder level is when a stock item arrives and will place a replenishment order. There will be a certain amount at which the stock goods will drop, and a new order will be needed to be issued. Pandey (2008) describes the reorder level as the level at which should put an order to refill the inventory. Before deciding the reorder stage, he enumerated some of the points that should be considered, including lead time, economic quantity, and average time. Lead time is the time taken after the order has been put in to obtain product delivery.

Maximum stock level: The ultimate stock level is set after considering the available stock of capital and its cost, the availability of money, the probability of depreciation and obsolescence, and the number of economic purchases.

Minimum stock level: Since each stock item has a minimum level of operations that are not interrupted, the actual stock held should not be below this level. The minimum stock level is the smallest amount below which a given product should be allowed to drop if the distribution is to be sustained and the factor to be considered when arriving at this is: the length of time needed by the supplier for delivery and the probability of late delivery or abnormal use. It is also hard to reliably predict the service and the lead time or delivery time. Product demand can fluctuate from day to day or from week to week. The actual delivery time can also vary from the expected lead time in a scenario where the actual use rises, or inventory delivery is delayed; the company will have a stock-out issue that would be very costly. A security stock for the company or company to protect it from stock-out.

Average stock level: The average stock level is the stock level between the maximum stock level and the minimum stock level that is either too high or too small. A company's stock amount depends on the existence and the volume of the service. Therefore, the stage that makes use of the storeroom power is sitting.

III. Empirical Framework

Ronald et al. (2004) reveal that inventories constitute unproduced goods, supplies, and parts that ensure that stock appears in the formation and measured channel of a company in various concentrations. Possession of available inventories will produce somewhere around 20 and 40 per cent of their appreciation per year. In connection with the company association's execution, closely supervising the stock level bodes well along these lines, despite several steps taken by Just In Time to decrease inventories, time pressure and rapid reaction buys. Bere (2015) argued that cycle inventories arise due to the option of administration to purchase, produce or sell units or ceaselessly in parts rather than individuals. In working systems, cycle inventories accumulate at various focus points. The parcel scope is a tradeoff between the cost of taking care of stock and the price of making more constant requests and sets-ups. The monetary request sum is highly imperative, a numerical reflection of this relationship. In JIT, the cycle stock requirement is lowered by reducing costs and time. Goyal et al. (2016) postulate that if the company still has stock-outs, lack of proper warehousing plans, distribution of the wrong items to customers, and the lack of appropriate documentation for procured goods, inventory management will cause unnecessary losses. To ensure that the company gets value for its money, the workers must understand and apply inventory management techniques. Hall et al. (2003) point out that ten to thirty
per cent (10-30 per cent) of extra stock is superfluous for wholesalers. These result in high transmission costs, loss of customers, loss of deals and loss of profit due to messy and inefficient stock administration. He supports the need to set out strategies for managing physical inventory to assess stock supervision’s considerable cost. Chopra et al. (2014) explained that, as a result of the jumble between free market activity, stocks occur in a reliable operation. Stock parts along these lines are intended to maximize the measure of interest obtained by making the item or company prepared and available when needed by the consumer.

Cheruiyot (2018) postulates that businesses should follow promising stock control approaches, a professional and fair stock information system so that they can modify stock control costs and risks against the desirable circumstances of making stock immediately open for smooth operations. Cutting down the stock level is unwanted in the same way as it interferes with production, loss of goodwill and high costs, especially when asking for a visit. Given transferring consumers to other capable suppliers as a delayed consequence of operational interruptions, the shortage of stock levels leads to a market conclusion (Oni, 2019). There are four aims of the stock organization that joins the accompanying Fatuma (2015). First, in terms of sum and demand rate filling, it provides both internal and external customers with the appropriate organizational level; second, it serves to assess current and potential requirements for a wide range of stocks to prevent over-stock while preserving a crucial distinction from “bottleneck” in growth. Finally, by grouping decreasing, calm bundle sizes and analyzing the cost generated to help get and transmit inventories and give organizational stock detectable quality in the stock system, the stock is critical in holding costs to a base.

IV. Theoretical Framework

Different theories are used to convey the investigation of the role of inventory control and management. The study draws from the idea of constraint, learn theory and stochastic theory to establish the vital concern of significant manufacturing firms about inventory management approaches to profitability.

Theory of Constraints: The theory of constraints is administrative reasoning that aims to maximize production throughput skills assessed based on identifiable evidence of specific mechanisms that compel the industrial system. In applying the principle of constraint, there are different difficulties. For example, there is a long lead time, a large number of unsatisfied requests, an unusual state of meaningless inventories or the absence of acceptable lists, an incorrect item request, a vast number of crisis requests and levels of endeavour, lack of customer engagement, non-

Lean Theory: The Lean Theory is an improvement in Just In Time thinking. The principle removes buffer stocks and minimizes waste in the manufacturing process (Inman et al., 2018). Inventory leanness certainly affects a business firm’s competitiveness and is the most robust method for inventory management. For the most part, businesses that are leaner than the market average have good returns (Eroglu et al., 2011). The theory examines how producers’ adaptability in their requesting choices reduces stock suppliers aimed at reducing transport inventory costs. Feedback raised against the idea suggests that when dealing with long-term collaboration constituting data and knowledge sharing and exchanging accomplices between businesses, materials must be available.

Stochastic Inventory Theory: As described by Lu et al. (2002), the stochastic model that indicates the request as a stochastic procedure is regularly more accurate than its deterministic partner, the EOQ model, for most request quantity/reorder point inventory systems. However, due to the non-appearance of a wise scientific result on the model, the stochastic model’s use was limited. The stochastic request number reorder point model in this paper breakdown is compared with a comparative deterministic EOQ model. Given the required optimal condition for the control variables inferred in the paper, and the analysis is carried out, and the ideal control parameters are set up for different fundamental subjective characteristics (Louly et al., 2013). The key outcomes are the following: First, the controllable costs of the stochastic model, as opposed to the deterministic EOQ model, because of the option of the sum requested (accepting the reorder point is picked ideally for each requested amount). The aggregate costs are, therefore, obviously higher; the sum of the ideal request is greater. However, when the sum is significant, the difference is slight; the execution of costs is much less touchy to determining the amount required. Secondly, the relative increase in the expenses purchased using the sum determined by the EOQ rather than the stochastic model ideal is similar to 1/8. It disappears when the requesting costs are critical about other expenses (Donaldson, 2001).

V. Methodology

In a more specialized context, Magaji (2006) describes a population that includes not only individuals
but also events, animals and artefacts, who are or are members of the target of the study as specified by the researchers' goals and objectives, but in most cases, it may be tough to cover the whole population. The Hamdala Sweet Factory sample population consists of 105 workers from various departments, including the production department, the marketing sales department and the finance department. The sample size specification is the decision to choose the number of findings or replicates to be included in a statistical sample. The sample size is an integral feature of any empirical analysis aimed at inferencing a population from the model. Thus, the population was drawn from a survey of 50 respondents. Using simple random sampling, samples are drawn since this method gives everyone in the entire population an equal chance of being picked.

a) Data collection

The investigator used both primary and secondary methods of data collection to collect data and to gain relevant information for decision-making. Primary sources. The primary refers to data collected from the authorities, including the researcher's different methods to collect the preliminary data. Questionnaire. The researcher would like to frame a question requiring an answer, such as "yes or no" in this process. This is a simple query asking for a direct response. I will share the questionnaire among the employees. Personal internal. This is a technique implemented that involves direct face-to-face information from the individuals (responding). It is intended to collect accurate and reliable information through the answers obtained from the questions planned. Observation. This is one of the methods used to supplement the researcher's interview. In the course of the researcher's statement, the number of items, workers and vision were vividly observed. Primary sources. In the field of literature review, secondary sources of knowledge have been used. This means they are compiled from the following places using articles from different journals, magazines, newspapers, textbooks, e.t.c: i. Gusau State Library, The State of Zamfara, ii. Library of Gusau Federal University, iii. Gusau Technical Library of the Federal College of Education.

b) Data analysis

The investigator used basic percentages to interpret the gathered data. The outcome of the 0f questionnaire was evaluated using tables. It calculated the introductory rates used and introduced, discussed and analyzed the results. In assessing the hypotheses, chi-square ($\chi^2$) is used. One of the standardized statistical distributions used for hypothesis research is the chi-square ($\chi^2$). Karl Person developed it in 1930. This helps one consider whether the difference between the actual results and the predicted results can be reasonably observed. This is to determine whether improvements can be related to the observed effects. For chi-square, the formula is represented as:

$$X^2 = \frac{(O - E)^2}{E}$$

Where

- $X^2$ = Chi-square
- E = Expected value
- O = Observed Value

The degree of freedom is obtained from the rows and column of a contingency table. It is given by the number of rows minus one, multiplied by the number of columns minus one.

DF = (R-1)(C-1) or n-1 as case may be.

The hypothesis will be at the 95% level of confidence that is 5% error limit which is 0.05

c) Decision rule

If the calculated chi-square value ($X^2$) is greater than the value gotten from the chi-square distribution table ($X^2$), then reject Ho, which is the null hypothesis and accept the H1 alternative idea. But if the chi-square table value is greater than the calculated value, then reject H1, which is the alternative hypothesis and take Ho, which is the null hypotheses.

VI. Analysis and Discussion

The presentation and review of data collected from the Hamdala sweet factory are discussed in this section. A total of 50 questionnaires, of which 40 were completed and returned, were distributed. In the presentation and interpretation of data obtained from the questionnaire, we will use applicable mathematical and statistical methods.

The primary objective is to evaluate the collected data to help achieve the study's goal. The researchers followed the simple percentage to analyze the data in the table. The chi-square is the statistical instrument used in testing the hypotheses, and a simple ratio is also used in testing the results.

Question 1: What is your work experience?

<table>
<thead>
<tr>
<th>Table 1: Work experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Options</td>
</tr>
<tr>
<td>1 – 5 Years</td>
</tr>
<tr>
<td>6 – 10 Years</td>
</tr>
<tr>
<td>11 – 15 Years</td>
</tr>
<tr>
<td>16 Years &amp; Above</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Source: Questionnaire administered 2018.

Table 1 above indicate that 18(45%) of respondents have work experience of 6-10 years. 11(27.5%) have an experience of 1-5years while 2(5%) have experience of 16years and above, and 9(22.5%) respondents have work experience of 11-15years.
Question 2: Which of the following types of inventory does your company maintain?

Table 2: Types of Inventory Company maintain

<table>
<thead>
<tr>
<th>Options</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finished Goods</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Work Progress</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Raw Materials</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>All of the above</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Questionnaire administered 2018.

Table 2 above shows that there are three types of inventory used and maintained by the company. This is because all respondents agreed to this.

Question 3: Does your company make formal inventory policies?

Table 3: Making formal inventory policies

<table>
<thead>
<tr>
<th>Options</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>No</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Questionnaire administered 2018.

Table 3 above indicate that the company make a formal inventory policies and this is because all 40 (100%) of the respondents unanimously agreed to this.

Question 4: Is there any committee assigned with the function of making policy decision about the inventory management?

Table 4: Committee assigned with inventory management

<table>
<thead>
<tr>
<th>Options</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Questionnaire administered 2018.

Table 4, shows that there is no committee assigned with the function of making policy decision about the inventory management. This is as a result of the fact that these policies are made by the management themselves.

Question 5: Does your company adhere strictly to her inventory management policies?

Table 5: Adherence to company inventory management policy

<table>
<thead>
<tr>
<th>Options</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>15</td>
<td>37.5</td>
</tr>
<tr>
<td>No</td>
<td>25</td>
<td>62.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Questionnaire administered 2018.

Table 5 shows that 15(37.5%) are of the opinion that the company adhere strictly to her inventory management policies, while 25(62.5%) disagree that the management adhere strictly to her inventory management policies.

Question 6: Does the inventory policies made in your company affect productivity?

Table 6: Inventory policy made on productivity

<table>
<thead>
<tr>
<th>Options</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>35</td>
<td>87.5</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>12.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Questionnaire administered 2018.

Table 6 above shows that 35(87.5%) of respondents agree that inventory policies made in the company affect productivity, while 5(12.5%) of the respondents disagrees.

Question 7: Does your company maintain minimum stock?

Table 7: Maintainance of minimum stock

<table>
<thead>
<tr>
<th>Options</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>30</td>
<td>75</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Questionnaire administered 2018.

Table 7 above shows that 30(75%) of the respondents agree that the company maintain minimum stock, while 10(25%) of the respondents disagrees with this fact.

Question 8: Does your company maintain perpetual stock records?

Table 8: Maintainance of perpetual stock record

<table>
<thead>
<tr>
<th>Options</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>No</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Questionnaire administered 2018.

Table 8 shows that the company maintain perpetual stock records, because all the 40(100%) of the respondents agreed to this fact.

Question 9: Does your company experience low productivity?

Table 9: Experience of low productivity

<table>
<thead>
<tr>
<th>Options</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>No</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Questionnaire administered 2018.
From table 9 above, it can be seen that the company experience low productivity because all the respondents agree to this fact.

**Question 10:** If Yes, do you think that low productivity is caused by poor inventory management?

<table>
<thead>
<tr>
<th>Options</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>30</td>
<td>75</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: Questionnaire administered 2018.*

From the table above, it can be seen that 30(75%) of the respondents agree that low productivity are caused by poor inventory management, while 10(25%) disagree with the fact.

**Question 11:** How does your company know when to reorder?

<table>
<thead>
<tr>
<th>Options</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before inventory fall to minimum stock</td>
<td>29</td>
<td>72.5</td>
</tr>
<tr>
<td>When inventory fall to minimum stock</td>
<td>9</td>
<td>22.5</td>
</tr>
<tr>
<td>After inventory to minimum stock</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: Questionnaire administered 2018.*

From table 11 above, it was shows that 29(72.5%) of the respondents agreed that company re-order before the inventory fall into minimum level, 9(22.5%) agreed that when the inventory is at minimum level, and 2(5%) of the respondents agreed that when it fall after beyond the minimum level.

**Question 12:** Does your company run out of stock from time to time?

<table>
<thead>
<tr>
<th>Options</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>No</td>
<td>5</td>
<td>12.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: Questionnaire administered 2018.*

From the table above, it can be observed that 35(87.5%) of the respondents agreed that the company runs out of stock from time to time, while 5(12.5%) disagrees with the fact.

**Question 13:** Does your company have loss of sale as a result of stock out?

<table>
<thead>
<tr>
<th>Options</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>No</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: Questionnaire administered 2018.*

Table 13 above shows that the company has loss of sale as a result of stock out because all the respondents agreed to this.

**Question 14:** What is your opinion of the company's storage cost?

<table>
<thead>
<tr>
<th>Options</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Low</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Moderate</td>
<td>25</td>
<td>62.5</td>
</tr>
<tr>
<td>Low</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>High</td>
<td>15</td>
<td>37.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: Questionnaire administered 2018.*

Table 14 above, it indicate that 25(62.5%) of the respondents were of the opinion that the company's storage cost is moderate, while 15(37.5%) of the respondents were of the opinion that the company storage cost is high. It should be noted that storage cost is a function of the level of average inventory held, while on the other hand, the level of average inventory held affect the frequency of ordering.

**Question 15:** Is there any control access to inventories?

<table>
<thead>
<tr>
<th>Options</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>30</td>
<td>75</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: Questionnaire administered 2018.*

Table 15 shows that 30(75%) of the respondents are of the opinion that there are control access of inventories while 10(25%) disagreed.

**Question 16:** From your work experience, what factors constrain effective management of inventories?

**Answer:** It was pointed out that the factors that militate against effective management of inventories are:
1. Lack of free flow of information within the company.
2. Inflation pressures
3. Scarcity of materials

**Test of Hypotheses**

Based on the problem and objectives of this study, the hypotheses stated will be tested below.
Hypotheses One

**Ho:** There is no significant relationship between low productivity and proper inventories management.

**Hi:** There is significant relationship between low productivity and proper inventories management.

**Decision Rule**

Reject **H₀:** If calculated value is greater than table value otherwise accept **H₀**.

**Test Techniques**

Chi-square (X²)

\[ X^2 = (O - E) \]

Where:

- **X²** = Chi-square
- **O** = Observed value
- **E** = Expected frequency
- **F** = Degree of freedom
- **Level of significance** = 5%

**Table 1b:** Contingency table

<table>
<thead>
<tr>
<th>Options</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>30</td>
<td>75</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: Questionnaire administered 2018.*

**Table 2b:** Computation of X² for hypotheses one

<table>
<thead>
<tr>
<th>Response</th>
<th>Observed</th>
<th>Expected</th>
<th>( \frac{O - E}{E} )</th>
<th>( \frac{(O - E)^2}{E} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>30</td>
<td>20</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>20</td>
<td>-10</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>40</td>
<td>0</td>
<td>10</td>
</tr>
</tbody>
</table>

Therefore calculated \( X^2 = 10 \)

\[ DF = (R-1)(C-1) \]
\[ = (2-1)(2-1) \]
\[ = 1 \times 1 \]
\[ = 1 \]

Critical \( X^2 = 3.841 \) at 0.05 error limit less than the calculated value of 10 therefore, we reject the Null hypotheses (H₀) and accept the alternative (H₁) hypotheses which state that there is a significant relationship between low productivity and proper inventory management.

**Hypotheses Two**

**Ho:** There is no significant relationship between effective inventory policies and productivity in a manufacturing company.

**Hi:** There is significant relationship between effective inventory policies and productivity in a manufacturing company.

**Table 3b:** Contingency Table

<table>
<thead>
<tr>
<th>Options</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>35</td>
<td>87.5</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>12.5</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: Questionnaire administered 2018.*

**Table 4b:** Computation of X² for hypotheses two

<table>
<thead>
<tr>
<th>Response</th>
<th>Observed</th>
<th>Expected</th>
<th>( \frac{O - E}{E} )</th>
<th>( \frac{(O - E)^2}{E} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>35</td>
<td>20</td>
<td>15</td>
<td>11.25</td>
</tr>
<tr>
<td>No</td>
<td>15</td>
<td>20</td>
<td>-15</td>
<td>11.25</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>40</td>
<td>0</td>
<td>22.50</td>
</tr>
</tbody>
</table>

Therefore, calculated \( X^2 = 22.50 \)

\[ DF = (R-1)(C-1) \]
\[ = (2-1)(2-1) \]
\[ = 1 \times 1 \]
\[ = 1 \]

Critical \( X^2 = 3.841 \) at 0.05 error limit less than calculated value of 22.50. Therefore, we reject the Null hypotheses (H₀) and accept the alternative hypotheses (H₂) which state that there is a significant relationship between effective inventory policies and productivity in a manufacturing company.

**Hypotheses Three**

**Ho:** There is no significant relationship between inventory control and the performance in manufacturing company.

**Hi:** There is significant relationship between inventory control and the performance in manufacturing company.

**Table 5b:** Contingency table

<table>
<thead>
<tr>
<th>Options</th>
<th>Respondent</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>32</td>
<td>80</td>
</tr>
<tr>
<td>No</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

*Source: Questionnaire administered 2018.*

**Table 6b:** Computation of X² for hypotheses three

<table>
<thead>
<tr>
<th>Response</th>
<th>Observed</th>
<th>Expected</th>
<th>( \frac{O - E}{E} )</th>
<th>( \frac{(O - E)^2}{E} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>32</td>
<td>20</td>
<td>12</td>
<td>7.2</td>
</tr>
<tr>
<td>No</td>
<td>8</td>
<td>20</td>
<td>-12</td>
<td>7.5</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>40</td>
<td>0</td>
<td>14.4</td>
</tr>
</tbody>
</table>
Therefore, calculated $X^2 = 14.4$
\[
DF = \frac{(R-1)(C-1)}{(2-1)(2-1)}
\]
\[
1x1
\]
\[
= 1
\]

Critical $X^2 = 3.841$ at 0.05 error limit less than the calculated value of 14.4 therefore, we reject the null hypotheses $H_0$ and accept the alternative hypotheses $H_3$ which state that there is significant relationship between inventory control and the performance in manufacturing company.

VII. Conclusion and Recommendation

Under this report, there is a difference between policies and the practice of such policies since not noted that the company does not strictly adhere to its inventory policies. This was supported by the questionnaire's reaction in Table 6, where 25 of the respondents decided that the organization did not strictly adhere to its inventory policies. In other words, the organization makes policy decisions, but often it fails to obey specific protocols or policies.

I also found that the business runs out of stock from time to time. When asked why the researcher understood that the store's explanation was due to unforeseen delivery delays or unusually high usage during the lead time while minimum stock is kept.

VIII. Conclusion

In the course of the study on the assessment of inventory control and management in a manufacturing business, it found that inventory is the cornerstone of every manufacturing company's life, and successful inventory management would contribute to the organization's effective control. However, it must be channeled to reduce stock to the nearest minimum, regardless of the method or technique of inventory management. To ensure their effectiveness, should track these inventory strategies. Therefore, it is correct to infer from the data review results that the organization makes structured inventory policies, and there is no committee appointed to make policy decisions on inventory management. However, considering the company's inventory policies, the outcome also indicates that the company's inventory management policies are not strictly adhered to. Therefore, to improve this current situation, all efforts are required by management. Thus, the researcher highlights some recommendations that, if implemented, Hamdala Sweet Factory would have enhanced its profitability due to cost reductions that will enable it to reduce prices and increase its turnover, thereby speeding up overhead costs over increased output, resulting in lower production costs.

IX. Recommendations

Having conducted a manufacturing company inventory management report focusing primarily on Hamdala Sweet Factory Ltd. The following are some suggestions given by the researcher that will increase its profitability if implemented as a result of cost reduction to enable the company's broader gross margin:

The organization should strive to adhere to inventory policies by all means. This means that the internal monitoring is lax in a situation where material or objects are permitted to leave the store without proper requisition. To ensure that the organization adheres to inventory regulations, inventory products should be allowed to leave stores without appropriate plea under any circumstances.

When placing orders, the company can use the economic order quantity process. The model of economic order quantity takes into account the related costs associated with ordering and inventory carrying. Each business enterprise strives to minimize costs to the lowest minimum and how the economic order quantity method of placing an order could be accomplished.

To prevent stock out, ample inventory should be kept such that there will be enough stock to be shipped when the ordering level is high.

To facilitate sufficient updates of inventory data, the flow of information should be improved and properly distributed.

To prevent stock-out that could lead to high usage or delay in delivery, the organization could also invest technology to quick-track and promote the free flow of knowledge about the shop.

Authors Contributions: M.U. and H.A. have both equally contributed in estimating and writing the original draft of this paper, they both revised the paper individually and collectively, while M. U. upgraded the study to an article.

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Conflicts of Interest: Both authors declare there is no conflict of interests.

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By Md. Rezaul Karim

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Keywords: fraud, fraudulent financial reporting, artificial neural network (ANN).

GJMBR-D Classification: JEL Code: M40

Strictly as per the compliance and regulations of:

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Keywords: fraud, fraudulent financial reporting, artificial neural network (ANN).

1. Introduction

Banking sector has a remarkable contribution to any economy. A transparent, efficient and accountable banking system is necessary for risk absorbent money market and smooth economic growth. With 56 scheduled banks Bangladesh is progressing with the objectives of developing economy, employment and efficient money market. Total bank deposit stood at BDT. 10441.5 million as at of June 2018 (Bangladesh Bank). The country has adopted financial inclusion program, rural banking, microcredit program for the development of the financial sector. Recently the country has also adopted BASEL III for the banking sector of the country. But it is a dismal fact that the country’s banking sector is facing some serious challenges due to poor governance, default loan and noncompliance. The sector is already facing scam, heist and fraud cases. Amount of Non-Performing Loan (NPL) is increasing and ROA and ROE of the banks are decreasing (Bangladesh Bank, 2018). Bangladesh ranked 130th among 141 countries with a score of 38.3 on the scale of 100 in the soundness of banking (Global Competitiveness Report, 2019).

Financial statements reflect the performance of an organization. Creditors, investors and other users use these statements to make decision on investing in the organization. Cost of debt, financial distress, ease of lending, financing decision depend upon the accuracy and completeness of these statements. Therefore, many professional, national, international and governing bodies have lined out the guidelines for the importance, requirements and inclusion of crucial information in the financial statements of the organization. On the dark side, illegal advantages can be pursued through fraudulent reporting. False information is incorporated in or at worst omitted from the statements to mislead the users while the statements were supposed to provide with objective, timely and true information. Misappropriation and misleading disclosures are also considered and fraudulent reporting. FFR is aimed at seizing the assets to defraud the investor (Financial Express, 2019). Bangladesh ranked at 126th position with a score of 43.7 at strength of accountancy and auditing standards (Global Competitiveness Report 2019).

Fraud is the intentional act to obtain illegal advantage committed by those inside or outside of the organization (ISA 240). Theft, bribery, false accounting, corruption, collusion and deception are considered as fraudulent acts (Bangladesh Fraud Audit Manual). Global fraud cases are on the rise and banks are increasing their investment in deterring fraud (KPMG, 2019). Forensic Accounting is in the place to detect, investigate and fraud related issues. It uses theories and principles of accounting with the investigative skill and auditing techniques to sort out white collar crimes and financial disputes. But FD is not an easy task. Painstaking efforts are needed due to the magnitude and types of fraud to unveil them. Detecting, sorting out and explaining the fraud is have always been ambiguous and tedious task. That’s why auditors use techniques in their investigation. RFs are therefore very helpful and handy in uncovering and signaling the fraud in the financial reporting. RFs have varying weights that pose conspicuous significance (Gullkvist & Jokipi, 2013). But auditors apply RFs rarely as symptoms of fraud (Yucel, 2013). Financial Ratios can be used as proxies of RF. They are easy to use for measuring and analyzing the financial performance (Delen, Kuzey, & Uyar, 2013) of companies with varying sizes and heterogeneous industries. Data mining is a more rigorous process that provide more accuracy in uncovering the fraudulent areas (Chen, 2016). ANN is the tool that can be reliably used as an alternative of regression analysis for fraud detection purposes.

Author: e-mail: reza ais@du.ac.bd
a) **Objective of the Study**

The main objective of this study is the detection of fraudulent reporting in the banking sector of Bangladesh. The specific objectives are:

- To note the role of Forensic Accounting in Fraud Detection and tools used to detect fraudulent areas.
- To find out the areas more prone to fraudulent reporting.

b) **Scope for further Study**

ANN has been used solely for detection purpose. Support Vector Machine (SVM), Decision Tree (DT), Chi-Square Automatic Interaction Detector (CHAID), Classification and Regression Tree (CART), Gini Index, Classification Tree C5.0, Quick Unbiased Efficient Statistical Tree (QUEST) can be used combinedly to get more sophisticated result. Few nonfinancial variables have been used in the analysis. Inclusion of more financial ratios and nonfinancial variables can reveal some unknown areas of fraud.

II. **Theoretical Framework**

a) **Fraud**

Fraud is the deceitful act committed deliberately. Individuals engage in fraud to deceive other individual, organization, customer or government. Fund swindles, asset misappropriation, corruption and bribery are the most common types of fraud. Fraudsters engage in fraudulent reporting, providing misleading information, misclassification of transaction, incorporating incomplete and sham disclosure, siphoning off money and stealing corporate coffers to devise fraud. Factors leading fraudulent behavior are combined in a framework known as Fraud Triangle.

![Fraud Triangle](source: Cressey (1953))

Figure 1: Fraud Triangle

Pressure can either be personal or organizational. Individual commits fraud because of personal debt. Continuation of luxurious lifestyle may also lead to fraud. Impractical revenue target, implausible goal may induce the employee to fraudulent behavior.

Opportunity is the most noteworthy reason behind deceitful act. Improper ICS, poor security for corporate coffers, unguarded assets, easily concealable assets are more prone to theft and misappropriation. Again, employee can abuse their position and power to achieve illegal and undue advantages that is detrimental to the organization and other people. Unobtrusive organizational role, ambiguous accounting policies, discretion level at policy making may also result in fraudulent action.

Rationalization is the stage where the fraudster tries to justify his crimes. Fraudster rationalizes it by doing it for business purpose or he/she has a power position in the organization. Previous scam or fraud cases are also held as reason for prospective fraud. Fraudster rationalizes his/her crime because other might have done them in the past.

KPMG (2010) conducted a survey on “Profile of Fraudster” based on fraudulent cases in South Africa, India, Europe and Middle East. According to that survey, most of the fraudsters are graduate men. Senior managers are mostly engaged in deceitful acts than the working level employees and the loss caused by the managers are 12 times more than that of caused by the employee. It also emphasized that perpetrators have long term employment with the organization, and they are usually from operation and finance department of the organization. Updated version of the report says that the perpetrator is employed for at least 6 years and are known as esteemed kudos within the organization. 60 percent of the fraud is induced by personal gain and 27 is by rationalization.

b) **Artificial Neural Network (ANN)**

ANN has identical layout of human brain with multiple neurons to process information. It imitates the processing system of human nerves. It takes in and combines numerous inputs and process them to reach to a logical conclusion. It takes in data and train themselves to recognize the patterns in the data and then predict the outputs for a new set of similar data. It can process complex pattern of events or business transactions. ANN is an artificial intelligence that reach to logical conclusion while using the rapid calculation ability of the computer.

c) **Multilayer Perceptron Network (MLP)**

MLP is one type of ANN. It is made of layers of neurons. These neurons are the central processing components of the system. The processing and output units are connected by lines known as nodes. The fundamental structure is made of an input layer, a
processing layer that is hidden known as Black Box and an output layer. The layers are interconnected through the nodes. The connections among the nodes are more important than the tasks they perform. Data from input layer is flowed to the hidden layer along with adjustable weights assigned to them. The weight indicates the degree of importance and influence among the nodes. The weights are set to random values at first and are adjusted directly from training data using a plausible error function to generate better output through iteration. The inputs are multiplied to the corresponding weight and their sum is sent as input to the neurons in the hidden layer. These neurons are linked with a numerical value called the bias. Bias of each neuron is added to the input sum. This combined value is transmitted through a threshold function called the Activation Function. This function determines whether a specific neuron will be passed on later or not. An activated neuron transmits data to the neurons of the next layer over the nodes. In this manner, the data is propagated through the network and is called Forward Propagation. Neurons with the maximum value is transmitted to the output layer to provide the final results.

During the training process along with the input, the network also has the output fed to it. So, the predicted output is compared against the actual output to realize the error in the prediction. The magnitude of the error indicates how wrong the prediction is. The information is then transferred backward through the network. This is called Back Propagation. The error is corrected through back propagation process. Based on this information the weights are adjusted. This cycle of forward and back propagation is iteratively performed with multiple inputs. This process continues until our weights are assigned such that the network can predict the pattern correctly. The error rate defines the accuracy of the model. The number of iterations must not be too small so the model cannot capture the process or too large so data may over fit resulting in poor prediction. At an optimal level of iteration, the model grasps the data and process them to reach to a logical conclusion. During the processing, the model can adapt its structure to the flow of information. ANN is trained to understand the patterns and detect the possible anomaly with high accuracy.

The entire data set needs to be divided into three sub data set known as training set, control set and test set. Each of the sub data set should be allocated with one third of the entire data set. Training set should contain the smallest and test set should contain the largest data set. The control set is the mechanism for the effectiveness feedback of the model.

Zupan (2014) emphasized that ANN works in the finest manner when there is non-linear dependence between the input and output. It can also be applied for linear relationship, but the outcome can be worse than the results of applying simple statistical tools and techniques. Since we are not always sure about the type of relationship among the variables, statistical techniques are recommended to transcribe the data.

III. Literature Review

a) Fraud and Forensic Accounting

Fraud is deceit with the purpose of transpiring personal motive that is considered illegal and it is done intentionally (Anyanwu,1993). Enterprises use tactics and conspiracy that are often a ruse and intended to cheat (Karwai, 2002). Uncovering fraud and deceitful act is a difficult task. That is why in controlling fraud international, local and professional authorities have a major role to play (Vanasco, 1998). The world is facing
more fraud incidents and with the implementation of SOX Act 2002, organizations are adopting mechanisms and initiating new methods to combat fraudulent acts (KPMG, 2003). But detecting the fraudulent acts is not a piece of cake. Convoluted fraud affects fraud investigations (Ozili, 2020). Degree of risk is considered a significant factor for constructing a framework for FD (Oztürk & Usul, 2020). Complexity of task and gender status affect the chances of FD. Women showcases (Öztürk & Usul, 2020). Complexity of task and gender status affects the chances of FD. Women showcases (Chung & Monroe, 2001). Auditors’ familiarity with and chances of success in FD in past cases are influencing variables in FD (Moyes & Hasan, 1996). FA can help here to unveil the fraudulent and deceitful act. FA collects, processes and presents information in a manner that is classified as viable for resolving financial crime (Stanbury & Paley-Menzie, 2010). While satisfying the rules and regulations of the court, FA uses probing and analytical competencies for settling economic crimes (Hopwood, Leiner, & Young, 2008).

It deals with gathering and interpreting financial disputes comprehensively and make an abstract and presentation of the fact concisely (Howard & Sheetz, 2006) while using the theories, ideas and assumptions of the discipline of accounting to solve business related controversies (Okunbor & Obaretin, 2010).

b) Reasons behind Fraud and its Consequences

Management often has discretionary power in organizational decision making. Even they can use this power for accounting transaction for their own economic benefits. They exert undue influence on accrual transaction with the intention of personal gain. Thus, accrual-based accounting has got a noteworthy role to play in divulging FFR (Song, Lee, & Cho, 2013). Erratic bank owners misuse their power to get illegal and undue advantages. Applying fraudulent techniques and loopholes of accounting, they siphon off larger amount of public money which are never reverted to the bank (İlter, 2012). Organization with poor governance system are more prone to financial fraud. This may comprise of insufficient board meetings, independent director; less than required member in the committee and poor ICS. Companies are accused of FFR that have lower number of external members (Beasley et al., 2000). Lokanan (2014) emphasized that falling trend in profit provide stimulus to the managers for FFR and asset misappropriation. FFR and FFS are backed by pressure that is considered as undue and incentive that disadvantages other stakeholder to achieve implausible economic growth and rigorous financial targets (AICPA, 2002). Complicated financial situation like excessive leverage and all-equity financing motive the management for FFR (SAS 99).

Share price is affected with the announcement of publicly available information. But penalty for FFR is statistically irrelevant to the stock price. This is because the owners consider that it has nothing to do with long term success of the company. Again, the fraud declaration by the authority has no content in the given information and the mulct is already reflected in the stock price (Eryigit, 2019).

c) Indicator of Fraud and their Proxy

RFs are not always a success tool in FD. Rather they are circumstances involved in the occurrence of fraud (Elliot & Willingham, 1980). Asset misrepresentation serves a viable measure for unveiling fraud than manipulation of liability does (Wei, Chen, & Wirth, 2017). Although Ozcelik (2020) argued that asset and liquidity along with committee for audit and ICS have nothing to do with the fraudulent acts.

Luxurious lifestyle, lucrative bonus plan, changes in lifestyle of the mangers are remarkable variables that signal FFR. Insufficient and ineffective ICS can be considered along to detect and measure the likelihood of FFR (Kaplan & Reckers, 1995). RFs serve as regressor variable to develop a regression equation that can detect fraud. Influencing risk factors may include complexity in auditing business transactions, inefficient and ineffective ICS, rigorous management practices in achieving financial goals (Bell & Carcello, 2000). Uretsky (1980) concluded that Revising previous RFs and spotting out new ones will require to construct comprehensive questionnaire from perspective that is completely different and probative.

Omar, Johari, & Smith (2017) suggested that Financial ratios serve as the detector of financial fraud and hence can unearth FFR. Due to the simplicity and resiliency of their nature, FRs are used to detect FFR as the proxies of RFs (Agyei-Mensah, 2015). RFs are popular for the prediction purpose of financial distress and the business risk of failure (Maricica & Georgeta, 2012) and for FD (Kanapickienn & Grundienienn, 2015). FRs are applied among peer organizations and in case of performance measure among industries on an average basis (Kieso, Weygandt, & Warfield, 2012). Different tools and techniques have been applied to spot out the fraud in the financial statements prepared by the companies (Ravisankar et al., 2011). ANN is subjective to judgement and prone to error. The accuracy rate of the model may vary, and the structure of the model is not impeccable. But it is more accurate than using regression analysis to detect the fraud. Oumar & Augustin (2019) applied ANN for the detection of fraud in credit card cases. Zhou & Kapoor (2011), Zakaryazad & Duman (2015), Hansen et al., (1992), Chen et al., (2006) used ANN to detect fraud in the financial statements.

IV. Methodology

This study attempts to find out the areas of fraud in the financial statements prepared by the banks
listed on Dhaka Stock Exchange (DSE). We took the data of 29 banks out of 30 listed on DSE. 13 years of data (2006 to 2018) were collected for the analytical purposes. The financial and nonfinancial data were collected from the published annual report of the banks. The data are of the solo basis of the banks not the consolidated results. The dependent variable is the differentiation between the fraudulent and non fraudulent banks. Fraudulent banks are assigned with value 1 and 0 is assigned to non fraudulent bank. Report published in 2018 by Center for Policy Dialog (CPD) is used to identify the fraudulent banks. FRs presented in Table 1 are used as the independent variables. The three categories of ratios were based on the guidelines of ISA 240.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Definition</th>
</tr>
</thead>
</table>
| Financial Pressure: | Debt-to-Equity Ratio (Total Liabilities ÷ Total Equity)  \[8\] \[9\] \[10\] \[22\] \[29\] \[48\] \[49\]  
Debt Ratio (Total Liabilities ÷ Total Assets) \[8\] \[9\] \[10\] \[22\] \[29\] \[48\] \[49\]  
Logarithm of Total Assets \[8\] \[9\] \[29\] \[52\]  
Net Operating Income to Total Assets  
Net Interest Income to Total Assets \[41\] \[49\]  
Assets per Employee  
Percentage of Classified Loan  
Directors’ Fee  
Earnings Per Share (EPS)  
Loan to Deposit Ratio  
Managing Director’s Fee  
Profit before Tax to Net Interest Income  
Provision for Loans  
Return on Asset \[48\] \[49\] \[52\]  
Return on Equity  
Tax amount due  
Total Operating Expenses  |
| Opportunity: | LTA  
NOITA  |
| Rationalization: | NETINNTA  
NITA  
Others:  
APE  
CLASSLOAN  
DIRFEE  
EPS  
LOANDEP  
MDFEE  
PBTNTEINT  
PRVLN  
ROA  
ROE  
Tax  
TOE  |
| Nonfinancial | AUDIND  
AUDMET  
IND  |

Multilayer Perceptron function in IBM Statistics SPSS 26 was used for the analysis. 21 (71.1%) banks were taken for training sample, 6 (20.2%) for testing sample and 2 (8.8%) banks were reserved as holdout sample for control purposes. The processing summary is presented in Table 2 and Descriptive Statistics is presented in Table 3.

<table>
<thead>
<tr>
<th>Sample</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training</td>
<td>268</td>
<td>71.1%</td>
</tr>
<tr>
<td>Testing</td>
<td>76</td>
<td>20.2%</td>
</tr>
<tr>
<td>Holdout</td>
<td>33</td>
<td>8.8%</td>
</tr>
<tr>
<td>Valid</td>
<td>377</td>
<td>100.0%</td>
</tr>
<tr>
<td>Excluded</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>377</td>
<td></td>
</tr>
</tbody>
</table>
Table 3: Descriptive Statistics

<table>
<thead>
<tr>
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<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>APE</td>
<td>377</td>
<td>6.78</td>
<td>699.30</td>
<td>68.0714</td>
<td>48.01008</td>
</tr>
<tr>
<td>AUDIND</td>
<td>377</td>
<td>.00</td>
<td>3.00</td>
<td>1.2016</td>
<td>.90018</td>
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<tr>
<td>AUDMET</td>
<td>377</td>
<td>.00</td>
<td>50.00</td>
<td>8.9602</td>
<td>6.33766</td>
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<tr>
<td>CLASSLOAN</td>
<td>377</td>
<td>.00</td>
<td>.82</td>
<td>.0687</td>
<td>.12730</td>
</tr>
<tr>
<td>DEBTR</td>
<td>377</td>
<td>.85</td>
<td>1.96</td>
<td>.9405</td>
<td>.12018</td>
</tr>
<tr>
<td>DIRFEE</td>
<td>377</td>
<td>.00</td>
<td>12.78</td>
<td>3.3272</td>
<td>2.63902</td>
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<tr>
<td>DTE</td>
<td>377</td>
<td>-13.17</td>
<td>123.53</td>
<td>12.0756</td>
<td>7.42987</td>
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<td>EPS</td>
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<td>-8.30</td>
<td>311.49</td>
<td>17.2982</td>
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<tr>
<td>IND</td>
<td>377</td>
<td>.00</td>
<td>8.00</td>
<td>1.5146</td>
<td>1.30890</td>
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<tr>
<td>LOANDEP</td>
<td>377</td>
<td>.04</td>
<td>7.57</td>
<td>.8757</td>
<td>.36741</td>
</tr>
<tr>
<td>LTA</td>
<td>377</td>
<td>4.06</td>
<td>6.18</td>
<td>5.0570</td>
<td>.37711</td>
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<tr>
<td>MDFEE</td>
<td>377</td>
<td>.85</td>
<td>23.02</td>
<td>9.7728</td>
<td>3.96516</td>
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<tr>
<td>NETINTTA</td>
<td>377</td>
<td>-.06</td>
<td>.06</td>
<td>.0241</td>
<td>.01066</td>
</tr>
<tr>
<td>NITA</td>
<td>377</td>
<td>-.23</td>
<td>.10</td>
<td>.0111</td>
<td>.01837</td>
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<tr>
<td>NOITA</td>
<td>377</td>
<td>-.06</td>
<td>.11</td>
<td>.0286</td>
<td>.01472</td>
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<tr>
<td>PBTNIN2</td>
<td>377</td>
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<td>201.00</td>
<td>1.4650</td>
<td>10.33663</td>
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<td>PRVLN</td>
<td>377</td>
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<td>6527.00</td>
<td>1037.2944</td>
<td>1086.45589</td>
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<tr>
<td>ROA</td>
<td>377</td>
<td>-.23</td>
<td>.24</td>
<td>.0128</td>
<td>.02651</td>
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<tr>
<td>ROE</td>
<td>377</td>
<td>-.12</td>
<td>.54</td>
<td>.1584</td>
<td>.08463</td>
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<tr>
<td>Tax</td>
<td>377</td>
<td>-188.00</td>
<td>7626.00</td>
<td>1360.5623</td>
<td>1111.56481</td>
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<tr>
<td>TOE</td>
<td>377</td>
<td>227.00</td>
<td>19357.00</td>
<td>3467.4589</td>
<td>2872.75068</td>
</tr>
</tbody>
</table>

Valid N (listwise) 377

V. Findings and Analyses

Table 4 gives the summary results of training and testing and the holdout sample. Holdout sample provides verification to the model. The error rate in Training is 5.6%. After the Training, the network finds the error and corrected them through Back Propagation.

The error rate of Testing is 14.5%. Considering all the error it can be said that the model is good and hence can be used for prediction. These Incorrect Predictions signifies the goodness of the model. Cross Entropy Error represents the error that the model tries to correct during Training and Testing.

Table 4: Model Summary

<table>
<thead>
<tr>
<th></th>
<th>47.417</th>
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</thead>
<tbody>
<tr>
<td>Cross Entropy Error</td>
<td>5.6%</td>
</tr>
<tr>
<td>Percent Incorrect Predictions</td>
<td>1 con consecutive step(s) with no decrease in errora</td>
</tr>
<tr>
<td>Stopping Rule Used</td>
<td>Training Time 0:00:00.19</td>
</tr>
<tr>
<td></td>
<td>25.505</td>
</tr>
<tr>
<td>Percent Incorrect Predictions</td>
<td>14.5%</td>
</tr>
<tr>
<td></td>
<td>15.2%</td>
</tr>
<tr>
<td>Percent Incorrect Predictions</td>
<td>Dependent Variable: Fraud</td>
</tr>
</tbody>
</table>

a. Error computations are based on the testing sample.
Table 5 represents how well the network has classified the items. Each sample has a predicted response of 1 if its pseudo-probability is greater than 1. 190 out of 194 cases that were not involved in fraud have classified properly for training purposes and the classification accuracy is 97.9%.

Table 5: Model Classification

<table>
<thead>
<tr>
<th>Sample</th>
<th>Observed</th>
<th>Predicted</th>
<th>Percent Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.00</td>
<td>.00</td>
<td>190</td>
</tr>
<tr>
<td>Training</td>
<td>1.00</td>
<td>1.00</td>
<td>63</td>
</tr>
<tr>
<td>Overall Percent</td>
<td></td>
<td></td>
<td>75.0%</td>
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<tr>
<td></td>
<td>.00</td>
<td>.00</td>
<td>52</td>
</tr>
<tr>
<td>Testing</td>
<td>1.00</td>
<td>1.00</td>
<td>8</td>
</tr>
<tr>
<td>Overall Percent</td>
<td></td>
<td></td>
<td>78.9%</td>
</tr>
<tr>
<td></td>
<td>.00</td>
<td>.00</td>
<td>23</td>
</tr>
<tr>
<td>Holdout</td>
<td>1.00</td>
<td>1.00</td>
<td>4</td>
</tr>
<tr>
<td>Overall Percent</td>
<td></td>
<td></td>
<td>81.8%</td>
</tr>
</tbody>
</table>

Dependent Variable: Fraud

ROC (Receiver Operating Characteristic) curve shows the specificity and sensitivity of all cutoffs in the model for diagnostic test. This represents how well the model fits the input with the output. The more the line tends towards the upper left corner (2nd quadrant) of the curve the better. Table 5 represents the numerical explanation of the ROC curve. The value of 0.965 for fraud case represents the probability of a random case to be selected as Fraud. The lines of the curves tend towards the upper left corner and probability of AUC is 0.965, thus it can be concluded that the model is very good.

Figure 3: ROC Curve
Table 6: Area Under the Curve (AUC)

<table>
<thead>
<tr>
<th></th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fraud</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>.965</td>
</tr>
<tr>
<td>1.00</td>
<td>.965</td>
</tr>
</tbody>
</table>

Importance indicates the measure of changes in the model’s predicted value for the different values of the independent variable. More importance value signifies the strength of the independent variable in prediction. Normalized importance is the importance value of each independent variable divided by the largest importance value.

Table 7: Independent Variable Importance

<table>
<thead>
<tr>
<th>Importance</th>
<th>Normalized Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTE</td>
<td>.059</td>
</tr>
<tr>
<td>DEBTR</td>
<td>.051</td>
</tr>
<tr>
<td>LTA</td>
<td>.086</td>
</tr>
<tr>
<td>NOITA</td>
<td>.043</td>
</tr>
<tr>
<td>NETINTTITA</td>
<td>.040</td>
</tr>
<tr>
<td>NITA</td>
<td>.046</td>
</tr>
<tr>
<td>APE</td>
<td>.075</td>
</tr>
<tr>
<td>CLASSLOAN</td>
<td>.035</td>
</tr>
<tr>
<td>DIRFEE</td>
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</tr>
<tr>
<td>EPS</td>
<td>.035</td>
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<tr>
<td>LOANDEP</td>
<td>.089</td>
</tr>
<tr>
<td>MDFEE</td>
<td>.032</td>
</tr>
<tr>
<td>PBNTNETINT</td>
<td>.039</td>
</tr>
<tr>
<td>PRVLN</td>
<td>.024</td>
</tr>
<tr>
<td>ROA</td>
<td>.061</td>
</tr>
<tr>
<td>ROE</td>
<td>.042</td>
</tr>
<tr>
<td>Tax</td>
<td>.048</td>
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<tr>
<td>TOE</td>
<td>.071</td>
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<tr>
<td>AUDIND</td>
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<td>AUDMET</td>
<td>.032</td>
</tr>
<tr>
<td>IND</td>
<td>.039</td>
</tr>
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</table>

Figure 4: Normalized Importance of Independent Variables
From the Table 7 and Figure 3, it is found that Loan to Deposit Ratio (LOANDEP), Logarithm of Total Assets (LTA), Assets per Employee (APE), Total Operating Expenses (TOE), Return on Asset (ROA), Debt-to-Equity Ratio (DTE), Debt Ratio (DEBTR), Tax, Net Income to Total Assets (NITA) are the most important variables that can detect the fraud in the financial statements of the listed banks. Based on ISA 240 it can be conclude that most of the fraud are backed by pressure and rationalization. Assets are most susceptible to fraud. Operating expenses are also the area that needs inspection. Loans provides by the banks is the most sensitive indicator of fraud. Thus, in order to predict and detect the fraud in the financial statements prepared by the listed banks of Bangladesh theses mentioned variables should be closely examined by the auditors.

VI. Conclusion

The number of bank failure is increasing in Bangladesh. The industry is going through a crisis with serious challenges jeopardizing the sector. Efficiency, profitability and robustness of the banks are at low ebb. Banks are running out of money due to fraud, scam, heist and other malpractices. Investors are losing confidence in investing in the banks. Deteriorating conditions may lead to failure of this sector leaving the economy and economic growth vulnerable to collapse. Fraudsters fudge the financial statements to defraud the bank. This paper is designed to find the areas that can detect FFR and FFS. Many techniques have been applied to find the fraud in financial statements. ANN is most popular technique used to predict the fraudulent areas in financial statements. Multilayer Perceptron Network (MLP) which is one type of ANN can consider the nonlinearity among the data to detect any anomaly. It is more reliable and sophisticated than conventional regression analysis. FRs and nonfinancial data were used as proxies of RFs to detect the areas susceptible to fraud. Fraud was motivated by the factors of the Fraud Triangle. Assets, debt and expenses of the banks should be scrutinized closely to detect and deter any fraudulent case. The authority needs to investigate these areas closely while inspecting the documents of the banks. Inclusion of more line items of the financial statements and nonfinancial data can give a clearer view of the fraud. Application of multivariate statistical method like Discriminant Analysis or Principal Components Analysis (PCA) can detect the relationship among the data that ANN could not capture. Again, CART, CHAID and other models can be used combinedly with ANN to get more refined results.

References Références Referencias


---

**Appendix**

**Appendix A: Network Information**

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<th>Input Layer</th>
<th>Covariates</th>
<th>1</th>
<th>DTE</th>
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<td>2</td>
<td>DEBT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>LTA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>NETINT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td>NITA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7</td>
<td>APE</td>
</tr>
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<td>8</td>
<td>CLASSLOAN</td>
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<tr>
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<td></td>
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<td>DIRFEE</td>
</tr>
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<td></td>
<td>10</td>
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</tr>
<tr>
<td></td>
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</tr>
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</tr>
<tr>
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<td>PBTNINT</td>
</tr>
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</tr>
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<table>
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<table>
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<th>Rescaling Method for Covariates</th>
<th>Standardized</th>
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<table>
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<th>Number of Hidden Layers</th>
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<tr>
<td>Number of Units in Hidden Layer</td>
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</tr>
</tbody>
</table>

| Activation Function | Hyperbolic tangent |

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<th>Output Layer</th>
<th>Dependent Variables</th>
<th>Fraud</th>
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</thead>
<tbody>
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<td>Number of Units</td>
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<table>
<thead>
<tr>
<th>Activation Function</th>
<th>Softmax</th>
</tr>
</thead>
</table>

| Error Function | Cross-entropy |

\(a\). Excluding the bias unit
Appendix B: Structure of the Model

Hidden layer activation function: Hyperbolic tangent
Output layer activation function: Softmax
**Appendix C: Parameter Estimates**

<table>
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<tr>
<th>Predictor</th>
<th>Predicted</th>
<th>Output Layer</th>
</tr>
</thead>
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<td>.009</td>
</tr>
<tr>
<td>DTE</td>
<td>-.029</td>
<td>-.254</td>
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<tr>
<td>DEBT</td>
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<td>-.276</td>
</tr>
<tr>
<td>LTA</td>
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</tr>
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<td>.153</td>
</tr>
<tr>
<td>NETINTTA</td>
<td>-.041</td>
<td>.507</td>
</tr>
<tr>
<td>NITA</td>
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<td>-.523</td>
</tr>
<tr>
<td>APE</td>
<td>.713</td>
<td>-.727</td>
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<tr>
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</table>

<table>
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<th>Predicted</th>
<th>Output Layer</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>H(1:1)</td>
<td>1.310</td>
<td>-1.765</td>
</tr>
<tr>
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<td>.871</td>
<td>-1.233</td>
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<td>H(1:3)</td>
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<td>H(1:8)</td>
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<td>-.1.462</td>
</tr>
</tbody>
</table>

This represents the correlation between the neurons connected by the nodes. For example, correlation of DTE and neuron H(1:1) is -0.029 and it follows for the remaining nodes.
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Forensic Accounting and Quality of Financial Reporting of Quoted Banks in Nigeria

By Nwaiwu Johnson, Ejimofor, Louis Chidi & Perekume, Mark

University of Port Harcourt

Abstract- The inspiration for this research which examined the effect of forensic accounting on quality of financial reporting of quoted banks in Nigeria was tensed by the high rate of low quality of audited financial reports by companies including quoted banks in Nigeria and its affirmation as unqualified reports by external auditors. The objective is to examine the effect of forensic accounting on quality of financial reporting of quoted banks in Nigeria. Cross sectional data were sourced from audited financial reports of quoted banks spanning from 2009-2018. Ordinary least square method were used to determine the extent to which forensic accounting affects quality of financial reporting of quoted banks in Nigeria. After cross examination of the validity of the pooled effect, fixed effect and the random effect, the study accepts the fixed effect model. In both models, the independent variables explain 61.6 percent and 59.2 percent of variations on value relevance and audit time lag.

Keywords: litigation services, forensic accounting, quality reporting, audit time lag, value relevance.

GJMBR-D Classification: JEL Code: M41
Forensic Accounting and Quality of Financial Reporting of Quoted Banks in Nigeria

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Abstract: The inspiration for this research which examined the effect of forensic accounting on quality of financial reporting of quoted banks in Nigeria was tensed by the high rate of low quality of audited financial reports by companies including quoted banks in Nigeria and its affirmation as unqualified reports by external auditors. The objective is to examine the effect of forensic accounting on quality of financial reporting of quoted banks in Nigeria. Cross sectional data were sourced from audited financial reports of quoted banks spanning from 2009-2018. Ordinary least square method were used to determine the extent to which forensic accounting affects quality of financial reporting of quoted banks in Nigeria. After cross examination of the validity of the pooled effect, fixed effect and the random effect, the study accepts the fixed effect model. In both models, the independent variables explain 61.6 percent and 59.2 percent of variations on value relevance and audit time lag. The F-statistics validated that the models are significant while the p values of the coefficient indicated that the effect are statistically insignificant. The beta coefficient further showed that litigation support services had a positive effect on value relevance and negative effect on audit time lag respectively. The study concludes that there is urgent need to publish audited accounts on timely basis to enhance timely investment decision and recommends that appropriate law enforcement agencies should go against banks that delays the publication of its annual accounts within the time frame stipulated by law. This would engage forensic accountants in litigation support services, instill consciousness on the top managements and strengthen the quality of financial reporting and build stakeholders’ confidence.

Keywords: litigation services, forensic accounting, quality reporting, audit time lag, value relevance.

1. Introduction

There has been long quest for timely publication of audited accounts of companies including banks within the time frame of 180 days from the end of accounting year to allow investors and other stakeholders study the reports and make informed investment decisions. Financial statements are statutorily prepared by the management of a company for the usage of various stakeholders. These financial statements indicate the state of the financial well-being of the company. They are usually the window into a company’s financial affairs are made available to the average investors and sometimes the only information available to banks and other institutional investors. Consequently, potential investors and other stakeholders rely on these financial statements to assess the type of dealings they could have with the company. An accurate assessment and evaluation of a company can be carried out if the financial statements are accurate. However, fraudulent activities, undue delay and window dressing syndrome perpetrated by top managements of banks have posed a big threat and loss of confidence to investors and other users of financial statements who rely heavily on the financial reports to make investment decisions and other uses. In accounting, the relevant of information sourced from financial reports are key to the users. It is capable of making a difference in decisions making if it has predictive and confirmatory values. Predictive value helps users in predicting or anticipating future outcomes while confirmatory value enables users to check and confirm earlier predictions and evaluations. In order to have relevance, accounting information must be timely. The relevance of information is affected by its nature and its materiality and financial statements published within three months after the end of accounting period will have more relevance than financial statements published over one year after the period end. On the other hand, timeliness of accounting information refers to the provision of information to users quickly enough for them to take action. Information becomes obsolete and useless if it is not reported within reasonable time frame. Usually the Statute specifies the time for preparation and presentation of financial reports, which is within six months from the end of accounting year. Therefore relevance and timeliness may mean sacrificing some precision or reliability over a period of time.

Bamidele, Ibrahim & Omole (2018) affirm that quality of financial reporting is the standardization of preparation and presentation of both financial and non-financial information by the financial institution for effective planning and reliable decision. However, the objective of financial reporting is to provide information that may be useful enough for evaluating management effectiveness in utilizing resources under its control to satisfy its users’ needs. He further opines that financial analyst, investors and management experts have deployed dozens of forensic accounting mechanisms that facilitate the assessment of performance index manipulation by a suspect company. He observed that ‘because the preparation of financial statements is the...
responsibility of company’s management’, transactions could be doctored and structured to suit their best interest in order to achieve desirable results and boost their earnings at the detriments of shareholders and other stakeholders. He stressed that the quality of a company’s earnings and financial reporting system are often overlooked which calls for forensic accountant skilful examination. Financial reporting is not only a final product; the quality of its reporting depends on each component parts including disclosure requirements of the company’s transactions, information about the selection and application of accounting policies and knowledge of the judgement made. The application of high quality accounting information are expected to improve forensic accounting services. However, a better quality of financial reporting would defeat management incentives to engage in earnings manipulations, conspiracy and window dressing. Thus, this could be achieved because the board of directors will hold more accurate information which increases their ability to monitor managers’ activities including investment decision.

Forensic accounting according to Okoye and Gbenga (2013) includes the use of accounting, auditing, and investigative skills to assist in legal matters. It consists of two components: Litigation services that recognizes the role of accountant as expert consultant in litigation services and investigative source that uses forensic accounting skills and may require possible courtroom testimony. They further reiterated that forensic accounting may involve the application of special skill in accounting, auditing, finance, quantitative methods, the law and research. It also involves qualitative skill to collect, analyze and evaluate financial evidence, as well as the ability to interpret and communicate findings. Forensic accounting is seen as encapsulating all other investigative related areas in uncovering financial fraud. The increasing complexity of financial fraud requires that forensic accounting be added to the tools necessary to bring about the successful investigation and prosecution of those individuals involved in criminal activities. Forensic accounting is the tripartite practice of utilizing accounting, auditing and investigative skills to assist in legal matters. It is a specialized field of accounting that describes engagements that result from actual or anticipated disputes or litigation. Forensic accounting can therefore be seen as an aspect of accounting that is suitable for legal review and offering the highest level of assurance (Apostolou, Hassell, & Webber, 2000). Forensic Studies (2010) reports the increasing need for forensic and investigative accounting in the banking sector in the face of complexities of modern day banking with large volume of complex data. This, in turn, makes it difficult to monitor transactions by applying manual audit processes. This in turn makes the control utility of auditing ineffective.

The external auditors have continually certify fraudulent financial statements as unqualified audit reports thus, resulting to impoverishment of investors and most times corporate collapse and economic crisis. Since the external auditors have refused to accept the responsibility of detecting financial fraud, rather have claimed to be only responsible for laying credence to financial statements has created a gap between the users of accounting information and accounting profession. This gap is known as audit expectation gap (Adeniji, 2004; Ekwueme, 2000). Hence, the failure of statutory audit to prevent and reduce fraudulent activities in banks had necessitated the need for the employment of skills of forensic accounting professionals with investigative, detective and litigation skills.(Owojori & Asaolu, 2009).

In a publication by the Head of Communication and Public Affairs, NDIC, Mohammed Kudu Ibrahim in January, 2018, it was revealed that fraud abuses by staff of banks increased from 231 in 2016 to 320 in 2017. Despite the fidelity insurance cover taken by banks to address frauds perpetrated by its staff, there is still need to further enhance their internal control and security measures as rising trend of E-channels fraud and forgeries remains a serious cause for concern to the industry. The federal government on the other hand deployed the services of anti-graft agencies such as Directorate of Public Prosecution (DPP), Economic And Financial Crime Commission (EFCC), Independent Corrupt Practices And Other Related Commission, (ICPC), and SERVICOM who are not authorities and professionals on financial matters and lack the basic investigative skills to unravel fraudulent activities and vice versa. In spite of all the noises about the use of these agencies, companies including banks continue to collapse due to poor quality of financial reporting. The banking sector which is considered very volatile and sensitive has gone through some moments of deep crises with the trial and dismissal of five banks’ Executive Officers who filed misleading financial reports to Central Bank of Nigeria. The issue that led to this was blamed on poor corporate governance which saw some insider abuses leading to banks having unfavorable balances on their shareholders funds. As a result, CBN conducted forensic audit which indicted the five Chief Executive Officers. Instance of corporate financial fraud could also be drawn from recent bank failures in Nigeria where management has fraudulently given loans without board approval and yet such banks annual report have been unqualified for its shady deals. However, the use of forensic accounting is not yet common in Nigeria, the rate at which financial irregularities in Nigeria financial institutions are spreading especially in the banking sector has put the focus on the need for forensic accounting techniques to be utilized in all spheres of the economy. The incidence of frauds is neither limited to the banking industry nor peculiar to Nigeria economy,
however the high rate of fraud within the banking industry, calls for urgent attention with a view to finding lasting solutions. From the cited studies above, it is evident that researchers have done more on the impact of forensic accounting on prevention of financial frauds while little or no extant study was done on the need to engage the services of forensic accounting and enhance quality insurance of financial reporting, the justification for this study.

In view of the above reviewed studies adopted the approach of conventional measures of quality of financial reporting which includes fundamental and enhancing characteristics as propounded by the IASB in conjunction with the FASB in 2008 to measure qualities of financial reporting. These attributes include relevance, verifiability, faithful representation, timeliness, completeness, comparability, true & fair view, and understandability. However, the authors are not disputing the use of these conventional characteristics to measure quality of financial reporting but there has been extensive debate that most of them are unobservable (Abernathy, 2010). Also, all the empirical studies reviewed for this study adopted quantitative data which is prone to manipulations and often unverifiable. This present study, as a point of departure, adopted qualitative (secondary) data obtained from audited reports of listed banks existing in Nigeria and the facts book of Nigeria Stock Exchange (NSE). The authors adopted the use of modern measures on forensic accounting and quality of financial reporting of quoted banks operating in Nigeria applying the services of forensic accounting proxied by litigation support services and quality of financial reporting proxied by indirect or modern measures of value-relevance and audit time lag. In order words, the study intends to validate the modern measures of quality of financial reporting of quoted banks to ameliorate the age long cankerworm and determine whether forensic accounting has any significant effect on quality of financial reporting in Nigeria. The study, therefore, intends to investigative what effect is litigation support services has on both value relevance and audit time lag as proxies for quality of financial reporting. The study is the second, to the best of the researchers’ knowledge, to adopt average market share price (AMSP) which no other previous study have adopted to measure and validate value relevance as a proxy to quality financial reporting. The study is in five sections, the first is the introduction, the second is the literature review, the third is the methodology, the fourth is the result and discussion while the fifth is the conclusion and recommendations.

II. Theoretical Framework

a) Information Asymmetry Theory

Information asymmetry theory is the possession of relevant information about an entity at different levels between the agent (managers) and the shareholders (principal) and other stakeholders in which the agents have different behaviours and different decisions which might affect the performance of the entity. It is an agency relationship which exists between the economic actors (managers) and the principal (stakeholders) where the welfare of the principal is influenced by the actions and decisions of the agent. There seems to be a mistrust when information is not appropriately shared among the stakeholders. The theory of information asymmetry is related to popular agency theory often referred as principal and agent relationship propounded by (Jensen & Michelin 1976). The concept of information asymmetry theory was first introduced in Akerlof’s (1970) on a paper about automobile products in America. He opined that asymmetry of information exists where buyers cannot accurately assess the quality or value of a product through examination before sale is made and all sellers will more accurately assess the quality or value of a product prior to sale. The information asymmetry in this context is a situation whereby the managers have more relevant information and took advantage over the investors and other interested parties about the current and future prospects of the entity or the business and thus chooses when to disseminate such information.

Managers can use accounting disclosures as well as other forms of disclosures and announcements to portray bad or good news, which may influence the quality of financial reporting. The information would give competitors an advantage if they know about it. Managers have obligation to disclose both good and bad news at the reporting period without any form of bias. Managers boast earnings during bad times to protect their job or reduce earnings during good times to save future bad times. According to Donald, David, Llaria et al (2018), Information asymmetry is a condition wherein one party in a relationship has more or better information than another. Their work is diffused on management research and its existence in core assumptions within the leading theories on management. According to Osisioma and Enahoro (2006), accounting processes and choice of policies resulting from management judgments at the same time are capable of manipulations which have resulted in poor quality reporting. The differences which are observed in financial reporting are legitimately prepared from choice of varied accounting policies of the same organization for the same period and has brought about challenges of credibility to accounting discipline. This is because when secret reserves are created, it actually means that agent are not providing good information to shareholders or asking managers about any suspicious account or dubious transactions. This is where creative accounting centers, when it tries to present and manipulate financial statements in order to record profit or create lucrative picture. The agent here acts as the
managers and accountants who prepare financial statement in a way to suit their organization’s prepositions and financial status while the principals are the shareholders and other stakeholders who make use of these information for informed decision-making. It shows that managers or accountants in some circumstances do not work hard but rely majorly on the manipulation and managers assumptions.

Finally, completeness as an attribute of quality financial reporting entails full disclosure of material facts for users of financial reports to understand the financial performance and position of the reporting entity, including all necessary descriptions and explanations. Therefore, information asymmetry theory affects the quality of financial reporting in Nigeria and this research work is underpinned under this theory to improve its credence.

b) Forensic Accounting Techniques

The origin of forensic accounting dates back to the ancient Egyptian scribes who accounted for the Pharaoh’s assets, known as the “eyes and ears of the Pharaoh.” In 1817, the forensic accounting had its first day in court when an accountant was required to testify at a bankruptcy hearing in Scotland. However, Pouloubet in 1946 was probably the first to publish the phrase “forensic accounting”. Forensic accounting was introduced by western countries for the first time in the 1980s in line with the developments in the market economy and to support the judicial system. It is a science that differs from traditional accounting which leads to getting accounting facts through using procedures and audit methods that dealt with legal problems and financial attributes (Keskin & Ozturk 2005). Forensic accounting according to Crumbley, Heitger and Smith (2009) is an investigative accounting. The concept is generally viewed as the action of identifying, recording, settling, extracting, sorting, reporting and verifying past financial data or other accounting activities, for settling current or prospective legal disputes, or using such past financial data for projecting future financial data to settle legal disputes. It utilizes accounting, auditing and investigative skills when conducting any kind of investigation. Forensic accounting is the tripartite practice of utilizing accounting, auditing and investigative skills to assist in legal matters (Olola, 2016). Hao (2012) believes that forensic accounting is the result of the integration between the legal framework and accounting framework. It has been considered that using forensic accounting techniques will help in exposing and identifying the culprits because this accounting process of interpreting, summarizing and providing complicated financial issues clearly using accounting literature to help draw facts in the litigation (Chi-Chi & Ebimobowei 2012). Bhasin (2007) notes that the objective of forensic accounting must include the assessment of damages caused by an auditors negligence, fact findings to see whether an embezzlement has taken place, in what proportion and whether criminal proceeding are to be initiated and collection of evidence in a criminal proceedings.

In the view of Dhar and Sarkar (2010) forensic accounting is the application of accounting concept and techniques to legal problems. It demands reporting where accountability of the fraud is established and the report is considered as evidence in law court or administrative proceedings. According to research conducted by academic experts such as Manning (2005) notes that the services of forensic accounting are utilized in areas such as accounting, antitrust, damages, analysis, valuation, and general consulting. Forensic accountants have also been used in divorces, bankruptcy, insurance claims, personal injury claims, fraudulent claims, construction, royalty audits, and tracking terrorism by investigating financial records.

c) Litigation Support Services

This is an aspect of forensic accounting that provides assistance on accounting nature in a matter involving existing or pending litigation. It deals primarily with issues related to the quantification of economic damages and it requires appearance in the court of competent to testify validated facts and documentary evidence. According to Bassey, Ahonkhai and Ohimai (2017) Litigation support takes into cognizance the interpretation and representation of problems that are connected to helping current and imminent litigation. In this aspect of knowledge, the forensic accountant might be told to attach a supposed value for the loss caused by those involved in the legal conflicts and asked to help in providing solution to conflicts even before they go to court. Due to the knowledge of forensic accountants, they are usually intended to be proficient consultants and expert witness. Forensic accounting to Okoye and Gbengi (2013) includes the use of accounting, auditing, and investigative skills to assist in legal matters. It consists of two components: Litigation services that recognizes the role of accountant as expert consultant, and investigative source that uses forensic accounting skills and may require possible courtroom testimony. They further reiterated that forensic accounting may involve the application of special skill in accounting, auditing, finance, quantitative methods, the law and research. It also involves qualitative skill to collect, analyze and evaluate financial evidence, as well as the ability to interpret and communicate findings. According to Akintoye (2008), forensic litigation support provides assistance of a nature in a matter involving existing or pending litigation or represents the factual presentation of economic issues relating to existing or pending litigation. It deals primarily with issues related to the quantification of economic damages sustained by parties involved in legal disputes and can assist in
resolving disputes even before reaching or getting to the court room. A good example of litigation support assignment would be calculating the economic loss resulting from breach of contract. Organizations also hire forensic accountants for guidance when evaluating potential business transactions. Forensic accountants assess a company’s true worth during mergers and acquisition and ensure that a purchaser is knowledgeable about the target firm’s financial situation and value, while looking for signs of suspicious accounting activity (Harris & Brown, 2000). Forensic accountants also quantify damages in cases of personal injury, product quality, contract disputes and intellectual property as well as uncovering hidden assets in complicated matrimonial law cases.

Zysman (2001) captured the litigation services of forensic accountants to include: shareholders and partnership dispute that involve analysis of numerous year financial records for valuation and quantification of the issue in dispute, personal injury claim where for example economic losses from motor accident or wrongful dismissal may need to be quantified, business interruption and other type of insurance claim, these assignments involve a detailed review of the policy to investigate covered issues and the appropriate methods of calculating the loss, business economic losses on contract dispute, construction claims, expropriation, product liability claim and trademark are some of the services, professional negligence to ascertain the breach and quantify the loss involved, mediation and arbitration as a form of alternative dispute resolution. Forensic accountant has familiarity and comfort with legal issues and procedures, they sought out special training and become involved in alternative dispute resolution (ADR). ADR services include both mediation and arbitration designed to help individuals and businesses resolve complex disputes with minimal disruption and in a timely fashion.

d) Value Relevance

This is the ability of information that are disclosed in financial or monetary report to represent or capture the value of the intended firm accurately. This concept is based on relevance and dependability and it entails the ability of any firm’s accounting report to summarize the details underlying their stock / share price. It explains the possible relationship between monetary details and stock price (Lui & Liu, 2007). It also means or entails the ability of monetary or financial information which are presented in financial report to explain their real market measures. For any financial or monetary reports to be important, their content must be essential in making investment decision. Thus, from perspectives or view of investors, only information which contributes to investment decisions for business owners is crucial (Olubukola, Uwalomwa & Jimoh, 2016). Listed firms employed monetary or financial report as their main means for communicating monetary information to their business-owners and the public. Accounting information are described as relevant when they influence their users’ decisions in true sense (Uwalamwa, Uwegbe & Okorie, 2015). It makes firms look and remain trustworthy in the minds of business owner and possible investors. This concept is evaluated to ascertain the usefulness of monetary information to the business owners (Papadak & Siougle, 2007). Therefore, maximizing prices of stock in any firm is the key objective of most listed or named banks in achieving their credibility in the mind of business owners. Consequently, value of any firm is dependent on how the market sees their performances.

e) Audit Time Lag

Audit time lag or delay is generally define as the length of time from company’s financial year – end to the date of audited reports was signed by the directors. Timeliness is an important qualitative attributes of financial statement, which requires the information to be made available to the users as rapidly as possible. A research conducted on 20 selected quoted companies in Nigeria showed that it takes a minimum of 30 days and maximum of 276 days on the average beyond the balance sheet date before they are finally ready for the presentation of audited accounts to the shareholders at the Annual General Meeting. Financial information users require accurate and timely information for informed decision-making. The American Accounting Association (AAA, 1954& 1957) was the first to consider timeliness as one of the qualitative attributes or characteristics of useful financial statements. Dibia and Onwuchekwa (2013) sees audit time lag as number of days from accounting year-end of a company and the audit report. They described audit time lag as an important information councilor, which focuses on audit firms, companies, regulators, investors, and its time lag directly determines the usefulness of decision-making. Inordinate audit time lag jeopardizes the quality of financial reporting by not providing timely information to investors and prospective investors. Delayed disclosure of an auditor’s opinion on the true and fair view of financial information prepared by the management increases the information unevenness and the uncertainty in investment. Consequently, this may adversely affect the investors confidence in the capital market as experience in the market shows that audit report lag significantly affects the investors’ chance of being defrauded and the degree of uncertainty on investment.
f) **Empirical Review**

Nwaiwu and Aaron (2018) in a study, Forensic Accounting and Quality Assurance on Financial Reporting of Public Sector in Nigeria affirmed that there is growing acceptance of forensic accounting and quality assurance on financial reporting of public sector across the world. Pearson product moment coefficient correlation was used in analyzing the primary data with the aid of social package for social sciences 20. The study further mentioned that holders of forensic accounting qualification have a very bright future because of its relevance to the national and global socioeconomic development by strengthening the credibility of financial reporting and rebuilding the investors’ confidence and trust on financial reports.

Enofe, Micheal, and America (2016) on the study titled: Financial Accounting and Fraudulent Financial Reporting in Nigeria investigated the role of forensic accounting and financial reporting in Nigeria banks by using sample size of 150 of professional accountants and 10 banks in Edo State. Primary data were used and relevant information elicited from respondents through distributed questionnaires. The analysis of data involves the use of both statistical and econometric methods in order to provide a rich background for the investigation. The study revealed that forensic accounting practices needs further improvements to impact on the reporting quality.

Onodi, Okafor and Onyali (2015) examined the effect of forensic investigation methods in corporate fraud deterrence in Nigerian banks. The study adopted a survey research design and data from primary source were collected through interviews and administration of questionnaires, while secondary source consists of reports on fraud and forgery in the banking sector. Statistical tools used to analyze the data include percentages, mean score, frequency tables, regression analysis and Z-test. The result revealed that there is a significant relationship between the forensic investigative methods and corporate fraud deterrence. The findings revealed that expert services of forensic investigators are normally required in the prosecution of fraud, but majority of the audit and accounting personnel in Nigeria are suffering from poor perception and knowledge of forensic investigative methods qualitative characteristics (relevance and faithful representation) of financial reporting accounting and enhancing qualitative characteristics (understandability) can be significantly be enhanced through forensic accounting.

### III. Methodology

This study adopted ex-post facto research design. Data were collected from secondary (qualitative) sources. Ex-post fact research design studies facts that have already occurred and collected but not necessarily amassed for research purposes. The population of the study are the banks whose shares are listed in the Nigerian Stock Exchange. They consist namely; First Bank Plc, Eco Bank Ltd, UBA Plc, Fidelity Bank Plc, Union Bank Plc, Stanbic IBTC Bank Plc, Access Bank Plc, Zenith Bank Plc, FCMB Plc, GT Bank Plc, WEMA

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*Fig. 1: Operational Framework of the Effect of Forensic Accounting on the Quality of Financial Reporting*

The researcher employed convenient sampling technique to select ten (10) quoted banks on the Nigeria Stock Exchange that met the post consolidation requirements of CBN in 2006. Convenient sampling technique is adopted where the population of the study is large as it is the case in this study. For the purpose of this study, secondary data were collected from publications of Nigerian Stock Exchange Fact Books and audited financial statements of the quoted banks. The data obtained were used to analyse the variables.

a) Operational Measure of Variables

There are two set of variables in this study; the predictor variables and criterion variables.

Forensic accounting services is the independent or predictor variables and is proxied by litigation support services. Quality of financial reporting is the dependent or criterion variable represented with modern or indirect measures of reporting as value relevance and audit time lag.

<table>
<thead>
<tr>
<th>Litigation Support Services</th>
<th>Number of prosecuted cases in the court for or against each bank for the period under review.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit Time Lag</td>
<td>Interval between the end of the financial year and date of audited reports.</td>
</tr>
</tbody>
</table>

In this study, the data analysis method employed is panel data multiple linear regression using “Ordinary Least Square (OLS) method”. Multivariate analysis technique is an inferential method for analyzing relationship between many variables.

b) Model Specification

FA = f (LS, VR); This is split into models 1 and 2 as shown below;

Model I: Forensic Accounting and Value Relevance

The study adopts the panel data method of data analyses which involve the pool effect, fixed effect, the random effect and the Hausman Test.

Pooled Effect Model

The functional relationship is expressed as

\[ VR = f (LS_i) \] ................................. i

Equation (iv) can be expressed in a linear form or mathematically as

\[ VR = \beta_0 + \beta_1 LS_i \] ................................. ii

By turning equation (v) into econometric model, to include random term, is expressed as

\[ VR_{it} = \beta_0 + \beta_1 LS_{it} + U_{it} \] ................................. iii

Fixed Effects

The fixed effects focus on whether there are differences by using a fixed intercept for each of the different cross-sectional structures. If we assume that the dummy variable for a conglomerate company is 1 or 0, then \( D_i \), which is the dummy variable for firm \( i \), can be expressed as:

\[ D_i = \begin{cases} 1, & i - 1 \\ 0, & otherwise \end{cases} \]

The regression of total samples can be expressed as:

\[ Y_{it} = \sum_{j=1}^{N} \beta_{ij} D_i + \beta_1 D_s + \beta_3 s_1 + \beta_{ol} D_{4s_2} + \varepsilon_{it} \] ................................. v

The dummy variables are expressed as follows: if \( j = i \), then \( D_{ij} = 1 \); otherwise \( D_{ij} = 0 \).
To further investigate the effect of forensic accounting and quality of financial reporting in quoted banks in Nigeria, Adebayo (2012) analyzed whether the independent variables affect the dependent variable, this regress the effect of the independent variables on the dependent variables.

\[ VR_{it} = \beta_0 + \beta_1 LS + UT \]

Because the fixed effects account for both cross-sectional and time-series data, the increased covariance caused by individual-firms differences is eliminated, thereby increasing estimation-result efficiency.

Random Effects

Random effects focus on the relationship with the study sample as a whole; thus, the samples are randomly selected, as opposed to using the entire population. The total sample regression (a function of the random effect) can be expressed as:

\[ VR_{it} = \sum_{j=1}^{N} \beta_0 + \beta_1 LS + UT \]

If this is represented with random variables, then \( \beta_{of} = \bar{\beta}_0 + \mu_j \), which indicates that the difference occurs randomly, and the expectation value of \( \bar{\beta}_0 \) is \( \beta_{oi} \).

VR = Value relevance
LS = Litigation Support
Ut = Error term

Model II: Forensic Accounting and Audit Time Lag

The study adopts the panel data method of data analyses which involve the pooled effect, fixed effect, the random effect and the Hausman Test.

Pooled Effect Model

The functional relationship is expressed as

\[ ATL = f(LS) \]

Equation (vii) can be expressed in a linear form or mathematically as

\[ ATL = \beta_0 + \beta_1 LS \]

By turning equation (viii) into econometric model, to include random term, is expressed as

\[ ATL_{it} = \beta_0 + \beta_1 LS + U_i \]

Fixed Effects

The fixed effects focus on whether there are differences by using a fixed intercept for each of the different cross-sectional structures. If we assume that the dummy variable for a conglomerate company is 1 or 0, then \( D_i \), which is the dummy variable for firm \( i \), can be expressed as:

\[ D_i = \begin{cases} 1, & \text{if } i = j, \\ 0, & \text{otherwise} \end{cases} \]

The regression of total samples can be expressed as:

\[ Y_{it} = \sum_{i=1}^{N} \beta_o D_i + \beta_1 D_s + \beta_3 s_1 + \beta_4 D_2 s_2 + \epsilon_{it} \]

The dummy variables are expressed as follows: if \( j = i \), then \( D_i = 1 \); otherwise \( D_i = 0 \).
Because the fixed effects account for both cross-sectional and time-series data, the increased covariance caused by individual-firms differences is eliminated, thereby increasing estimation-result efficiency.

**Random Effects**

Random effects focus on the relationship with the study sample as a whole; thus, the samples are randomly selected, as opposed to using the entire population. The total sample regression (a function of the random effect) can be expressed as:

\[ ATL_{it} = \sum_{j=1}^{N} \beta_0 + \beta_i LS + UT \]

If this is represented with random variables, then \( \beta_{ij} = \overline{\beta}_0 + \mu_j \), which indicates that the difference occurs randomly, and the expectation value of \( \beta_{oi} \) is \( \overline{\beta}_0 \).

**Research Hypotheses**

These null hypotheses below are formulated to guide this study based on research questions and specific objectives stated above.

**H01:** There is no significant effect of litigation support services on the value relevance of quoted banks in Nigeria.

**H02:** Litigation support service does not have significant effect on the audit time lag of quoted banks in Nigeria.

### IV. Discussion and Results

**a) Presentation of Results**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODEL 1: Forensic Accounting and Value Relevance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS</td>
<td>37.58611</td>
<td>35.32686</td>
<td>1.063953</td>
<td>0.2891</td>
</tr>
<tr>
<td>C</td>
<td>140.2249</td>
<td>210.7427</td>
<td>0.665384</td>
<td>0.5068</td>
</tr>
<tr>
<td>Effects Specification</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-squared</td>
<td>0.616716</td>
<td>Mean dependent var</td>
<td>0.652200</td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.481306</td>
<td>S.D. dependent var</td>
<td>0.453580</td>
<td></td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>0.256059</td>
<td>Akaike info criterion</td>
<td>0.225353</td>
<td></td>
</tr>
<tr>
<td>Sum squared resid</td>
<td>5.769847</td>
<td>Schwarz criterion</td>
<td>0.537973</td>
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b) Test of Hypotheses

**Decision Rule:** Reject or discard null hypothesis when calculated t value is greater than t value in critical value table at 1.080

**H0:** There is no significant effect of litigation support services on the value relevance of quoted banks in Nigeria.

**Table 3:** Test of hypothesis 1

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**Decision**

With computed t value of ± 1.063953 less than the critical t value of 1.080 the researcher therefore reject the alternate hypothesis and accept the null which says there is no significant effect of litigation support service on the value relevance of quoted banks in Nigeria.

**H02:** Litigation support service does not have significant effect on the audit time lag of quoted banks in Nigeria.

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**Decision**

With computed t value of ± 1.240344 greater than the critical t value of 1.080 the researcher therefore reject null hypothesis and accept alternative which says that litigation support service have significant effect on the audit time lag of quoted banks in Nigeria.

**V. Concluding Remarks and Recommendations**

The study examined ‘the effect of forensic accounting on quality of financial reporting of quoted banks in Nigeria’. Model one: Forensic accounting on value relevance of the study found that the independent variable proxied by litigation support services in the regression model showed that 61.6% alteration on the value relevance of the banks under study could be explained by changes in forensic accounting variables examined. The F-statistics showed that the model is significant while the coefficient showed that litigation support services is positively related with value relevance and the p value showed that the coefficient is statistically significant.

Model two: forensic accounting and audit time lag of the study found that the independent variable in the regression model showed 59.2% alteration or variation in audit time lag of the banks studied could be explained by discrepancy in forensic accounting variable examined. The F-statistics showed that the model is significant while the coefficient showed that litigation support services is negatively related with audit time lag and p value showed that the coefficient is statistically insignificant. Hence the conclusion drawn from these findings were that there was positive coefficient of 37.58611 as a parameter for litigation support services and value relevance at a p value of 0.2891; the study therefore concludes that litigation support services have positive and significant impact on value relevance of quoted banks in Nigeria.

The study further found negative coefficient of -0.155199 as a parameter for litigation support services and audit time lag at a p value of 0.2181; the study therefore concludes that litigation support services have negative but insignificant impact on audit time lag of quoted banks in Nigeria. The study concludes that average market per share (AVMPS) is a stronger indices to access the quality of financial reporting than the book value of shares (BVPS). The study also concludes that there is need to hold office holders and those in authorities accountable for their actions within the legal framework. The study found significant effects between forensic accounting and quality of financial reporting by values of 61.1% and 59.2% respectively.

Based on the above, the study recommends that accounting regulators in Nigeria like the Financial Reporting Council of Nigeria and other relevant accounting agencies should promulgate and promote litigation programs, trainings and certification to strengthen the litigation and detective skills of forensic accountants. Forensic experts should be engaged to securitize audited financial statements of companies before or after the annual general meetings to lay credence on such reports. The study also recommend probe of audit delay and formulate policies to enforce compliance. The Nigeria legal system should be structured in a manner that accelerated and credible judgement should be delivered to build and restore the hope of the common man. Stakeholders in private and public sectors should support and encourage the growing acceptance of forensic accounting services and quality insurance on financial reporting. Also Nigeria as a developing country should enact laws that are consistent and up-to-date with latest technological advancements to catch up with the antics of the fraudsters who devise numerous means to commit fraudulent acts. Engagement of forensic experts should not be seen as expensive services for companies who prefer out of court settlements and dreading that certain publications might blemish their corporate image. Also companies who default in producing their audited accounts within the statutory period should be investigated for probable fraudulent activities. The government and other regulatory bodies should enact laws mandating companies whose shares are quoted on the stock exchange to engage the services of forensic experts at intervals since it has been
established by this study that forensic accountants have the potentials to positively impact on the quality of financial statements.

The obligation of forensic accounting should include the assessment of damages caused by an external auditors negligence, fact findings to see whether an embezzlement, misstatements and falsifications have taken place, in what proportion and whether criminal proceeding are to be initiated and collection of evidence in a criminal proceedings.

References Références Referencias

Effect of Internal Auditing Characteristics on Financial Accountability of Public Organization: A Case of County Governments in Kenya

By Linet Kemunto Nyakundi & Dr. Oluoch Oluoch

Jomo Kenyatta University of Agriculture and Technology

Abstract- The county government’s auditors have been experiencing the existence unreliable information systems, Lack of capacity to handle the financial complexities, Economic viability of some county governments in doubt, Political interference of in the process of procurement and staffing, weak governance structures for financial controls and reporting. All this has affected the financial accountability of internal audit services. Public finance accountability is increasingly becoming important in the public sector. One means of effecting accountability is through auditing. Despite the characteristics of auditor’s fraudulent activities, in efficiency and waste of public resources are increasingly high. This is a sad state of affairs as the county governments strive to become a middle income economy by 2030.

Keywords: audit risk assessment, staff competence, the characteristics of internal auditing.

GJMBR-D Classification: JEL Code: G00, M41
Effect of Internal Auditing Characteristics on Financial Accountability of Public Organization: A Case of County Governments in Kenya

Linet Kemunto Nyakundi* & Dr. Oluoch Oluoch*

Abstract- The county government’s auditors have been experiencing the existence unreliable information systems, Lack of capacity to handle the financial complexities, Economic viability of some county governments in doubt, Political interference of in the process of procurement and staffing, weak governance structures for financial controls and reporting; All this has affected the financial accountability of internal audit services. Public finance accountability is increasingly becoming important in the public sector. One means of effecting accountability is through auditing. Despite the characteristics of auditor’s fraudulent activities, in efficiency and waste of public resources are increasingly high. This is a sad state of affairs as the county governments strive to become a middle income economy by 2030. The general objective of this study is to determine the effect of internal auditing on financial accountability. The study was guided by the following Specific objective which was; to find out the influence of management, Audit risk assessment, staff competence on the characteristics of internal auditing practices in selected county governments and to find out the extent to which Political interference influence in internal auditor’s services. The study adopted descriptive research design. The study population will comprise of 47 internal auditors from 47 county governments (1 respondents per county government). The study use census sampling to select sample size of 47 internal auditors from 47 county governments. The study used primary data by use of questionnaire in the collection of data. This study used quantitative method of data analysis. The data collected was edited, coded, tabulated, translated into specific categories, record them appropriately and computing them using appropriate statistical techniques. Data was analyzed using descriptive and inferential statistical techniques was used. Descriptive statistics includes the mean, standard deviation and correlation analysis. The study concluded that audit risk assessment had affected financial accountability of county government. It showed that audit risk assessment produce quarterly financial reports, audit risk assessment liaise internal auditors and external auditors.

Keywords: audit risk assessment, staff competence, the characteristics of internal auditing.

1. Introduction

a) Background of the study

Over the years, internal auditing has evolved into a highly professional activity that extends to the appraisal of the efficiency and effectiveness of all phases of a company’s operations, both financial and non-financial. An audit (internal or external) involves the review of the accounting books of the organization; the audit is usually by an official independent body/organization or individuals hired by the organization. The audit process is an in-depth examination of each financial transaction made by an organization and encompasses the total year-end accounts. Upon the completion of the independent audit, the books and accounting procedures are verified as accurate. The audit opinion expressed by the auditors determines the fairness and accuracy of the financial statements. The audit opinion measures the level of the characteristics of accounting done in an organization. The different types of opinion expressed by auditors at the end of audit exercise are: unqualified opinion, qualified opinion, adverse opinion and disclaimer opinion (Augustine et al., 2013).

These changes have led to the formation of internal audit departments” Sterck, (2014). NR “and became one of the important units in the most modern banks in the world” One of the strongest means to monitor financial reporting, ethics, and governance is the internal audit groups in corporations. The internal audit function could be viewed as a first line defense against inadequate corporate governance and financial reporting. With appropriate support from board of directors, audit risk assessment, the internal audit staff is in the best position to gather information on inappropriate accounting practices, inadequate internal controls, and ineffective corporate governance (Sharairi, 2011).

The Institute of Internal Auditors (IIA) defines internal auditing as follows: “Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve the organization’s operations (Viswesvaran, 2012. It helps an organization to accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance process”, and the IIA defines Objectivity as: An impartial, unbiased mental attitude and avoidance of conflicts of interest, allowing internal auditors to perform engagements in such a manner that they have an honest belief in their work product and that

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no significant characteristics compromises are made” (IIA, 2012).

Therefore this lead to the broad view of internal audit places it more centrally as an important element of public expenditure management that also encompasses management controls and information communication processes. Internal auditors become key by informing the public sector as a result of principle-agent relationship that exists between the executive and the public (ICPAK, 2015). Internal auditors safeguard the organization resources and forecast to give a continuous account of how the resources have been used and enable continuous assessment on whether the feedback meets public objectives and expectations and whether these are well balanced to reduce the risks inherent in the principal-agent relationship (Adel, 2011).

In Asia, the Malaysian public, the government is aware that high characteristics of financial management will lead to the success of government programs and activities however there was general concern among over the effective and transparent Public Financial Management (PFM) regarding the use of public money. Every year government has involved in collecting and spending hundreds of billion ringgits of public money through the various ministries and agencies for government program and activities. This revenue and expenditure may constitute the main factor for economic growth stimulation of the country, (Jamal, 2011).

Funds are expended for legitimate purposes in appropriate ways, and financial record reflect true and fair organization’s financial condition. According to Aaron and Gabriel, (2010) All transactions should be properly authorized, executed and recorded. Due to this huge money involved, government need efficient and effective financial management machinery to functioning with accountability and due diligent conforming to the stipulated rules and regulation and other instruction pertaining to financial management. So, all government ministries, departments and agencies are supposed to maintain the accuracy and reliability accounting record for the purpose of auditing and future use (Pilcher, 2011).

In the United States the recent scandals have demonstrated that ensuring the independence of auditors from the publicly traded clients whose books were inspect is one of the most having problems in the financial world today.

The imposition of a mandatory audit system through the 1930s federal securities laws created the modern problem of auditor independence. Since then, numerous attempts to fix the problem have failed. According to Montondon and Fischer, (2009), the core issue is that the statutory audit is simply a commoditized cost of doing business for issuers that imposes an impossible obligation to serve an unspecified investing public on the auditors. Yet, this investing public neither hires, fires, nor controls the auditors. However, Unegbu and Kida (2011) Instead, the audit relationship is managed by the management of the institution being audited. This enables an organization to meet its operational objectives through well thought-out and dedicated approaches to evaluate and improve on how best to manage risk, institute effective controls and enhance governance. Organizations Internal auditors play the role of undertaking an independent examinations and giving assurance on various operations of institutions aimed at enhancing organizational performance every day (AAA (2011).

In Africa, Ethiopian public Universities established that internal audit recommendations are not afforded enough management attention and support which adversely affect the effectiveness of internal auditors (Chepkorir, 2010) Moreover, lack of mechanisms in place to follow up the implementation of internal audit recommendations; absence of strategic plan and consistent documentation styles for audit work, lack of resources, poor leadership for internal audit function (IAF), absence of appropriate framework to measure IAF Characteristics, and lack of competent personnel are also some challenges of internal auditors.

In Kenya, the set-up of internal audit function has been provided for under the Public Financial Management Act of 2012 and the Public financial management regulations of 2015. This law and the implementing regulations also accommodate prior guidance provided through Treasury circular AG/3/080/6/(61) of 2000 on the establishment of Audit risk assessments in all Ministries, departments and agencies of the central government, circular 16 of 2005 which provided detailed guidance on internal auditors role in enhancing oversight, governance, transparency and accountability and circular 18 of 2005 that provided a detailed guide to management action on internal audit reports (ICPAK, 2015).

Public institutions are required to support the internal auditor to learn effectively on all if not most issues faced by public institutions by understanding the daily risks and constraints in public organizations systems and formulating strategies that will enable the internal auditors to work as a team to identify and address all risks. A good internal auditor is one who undertakes his role efficiently and effectively and enables the achievement of good governance systems in any given public institution (Belay 2007). The internal auditors’ roles are affected by credibility issues hindering the capability to perform their duties in promoting transparency, accountability and good governance. For instance, misappropriation of public funds through scandals such as 2005 Anglo-Leasing, NHIF, Judiciary and the Ministries of Agriculture and Education scandals are indicators of ineffectiveness in public internal auditing and poor performance of internal auditors (ICPAK, 2015).
According to KPMG’s Audit Risk assessment Institute (2013). Irregularities in spending public money have been highlighted by the Auditor General (AG) in his annual report. Some of these weaknesses and irregularities involve serious violation of established financial management guidelines and procedures such as poor planning of procurement, equipment’s supplied, work done and services rendered not in accordance with the original specification, cost overrun due to delays in project completion, improper payment made for equipment’s not supplied, work not done and services not rendered, equipment and good procured at a much higher cost than market value, procurement not done according to established regulations, (Kiprono, 2010). Thus the role of IA unit is to determine that internal control is in place by reviewing policies and practices in the organization in order to avoid loss of financial resources, noncompliance and also to provide reasonable assurance that public money has been spent in an efficient and effective manner.

b) Statement of the problem

The county government’s auditors have been experiencing unreliable financial accountability where the systems lack ability to handle the financial complexities. Economic viability of some county governments are in doubt influenced by political interference in the process of procurement and staffing, weak governance structures for financial controls and reporting. All this has affected internal audit characteristics. Public finance accountability is increasingly becoming important in the public sector. One ways of effecting financial accountability is through auditing. Despite the auditors fraudulent activities, inefficiency and waste of public resources are increasingly high (TI, 2017). This is a sad state of affairs as the county governments strive to become a middle income economy by vision 2030.

According to the Audit reports from the Office of the Auditor General on financial operations of County Governments across the Country, 91% of the County Assemblies Audited by the Auditor General in the year 2013 had not received unqualified audit opinion both on financial statements and policy implementation (Auditor General Report, 2013). In the financial year2014/15, the Auditor general report reveals that with up to about Ksh 1 trillion allocated to 47 County Governments, massive corruption and excessive un-accounted spending mar the County governments. The audit report expose massive corruption and a careless spending culture in total disregard of existing procurement regulations even as the clamor for more cash continues. The report established that some monies were paid to ghost workers and non-existence suppliers. (Auditor General Report, 2016).

Kamere (2013) found that in organizations where management failed to recognize the role of the internal audit function this led to incompetency and overall lack of Characteristics of the functions. Schneider, (2014), found that internal auditors role in achieving objectivity in the organization is largely affected by their economic status and that lack of clear reward systems. Schneider found that when rewards were not given to internal auditors, the internal audit operations could be influenced by management and this would affect their reports and may result in unreliable reports to the organization.

Ahlawat and Lowe (2014), study found that Management support and internal audit characteristics are the two most important factors that influence the effectiveness of the internal audit function Hence, failure by management to respond to internal audit findings and recommendations impacts negatively on the internal audit staff attitude towards the improvement of audit characteristics, their commitment to develop their career in the public sector internal audit functions and their overall job satisfaction. Waweru (2013), indicates that there is much similarity to studies in major economies. However, skills shortage and dominant shareholder or government may have affected the operations of audit risk assessments.

Goodwin (2014) study found that 72% of internal auditors were not allowed to question the decisions made by the top executive level and noted instances where top level executives were dismissed for going to the Chief Internal auditor to verify the decisions made in the normal course of operations. It is therefore not very clear if the Characteristics of the auditors has any significant impact on the accountability of the public institutions in Kenya. This study therefore aimed to provide further understanding of the effect of internal auditing characteristics on financial accountability in county governments, in Kenya.

c) Objectives of the study

i. General objectives

The general objective of this study was to assess the effect of internal auditing characteristics on financial accountability in county governments, in Kenya.

ii. Specific objectives

1. To find out the influence of management support on financial accountability in county governments in Kenya.
2. To determine the influence of audit risk assessment on financial accountability in county governments, in Kenya.
3. To find out the extent to which audit staff competence influence financial accountability in county governments, in Kenya.
II. Literature Review

a) Introduction
This chapter gives the theoretical literature and empirical review of the study. It also gives cover the conceptual framework, Empirical review, and Research gaps.

b) Theoretical review
The study was based on the following four main theories include Credibility Theory, Institutional Theory, Policeman Theory and Theory of Inspired Confidence.

i. Credibility Theory
According to Credibility Theory (Porter, 1990) this theory regards the primary function of auditing to be the addition of credibility to the financial statements. Audited financial statements are used by management (agent) in order to enhance the principal’s faith in the agent’s stewardship and reduce the information asymmetry. However, the Audited information does not form the primary basis for investors” investment decisions”. On the other hand, it is always asserted that financial statements have a function of confirming message that previously issued (Sterck and Bouckaert, 2014).

Most institutions put in place control systems such as internal auditing to promote efficiency in financial management and to effectively monitor the operational Characteristics of individual departments. Despite their existence, information inequalities constraint management and directors and the expectation that the internal audit function is an effective control system that promotes good governance (Lin et al, 2013). This is supported by IIA, (2012) which opined that one of the expected outcomes when assessing the role of internal auditors is whether the function assists the organization to promote corporate governance processes.

According to Ramsay (2012) highlighted that in modern times, a number of forces put together have led to a transformation of governments through the adoption of options meant to scale up their operations and through the enhancement of internal auditor’s roles to higher levels in a bid to enhance accountability and transparency in the use of public resources. The internal audit function entailed evaluation and improvement of control of risks, internal controls and governance processes.

The separation of management from ownership in public institution offers an ideal context for the operationalization of Credibility Theory. The shareholders are regarded as the principal with the interest of achieving maximum outcome interests from the organization. Conflict arises as the separation of ownership from management leads to inability of the owners to monitor management actions and activities and results in the need to employ certain source of information systems and control measures to minimize agency costs (Krishnan & Visvanathan, 2013). The theory relates to the variable under study on management support and characteristics of internal auditors.

ii. Institutional Theory
According to institutional theory (Scott, 2004) states that institutional environment can strongly influence the development of formal structures in an organization, often more profoundly than market pressures. Innovative structures that improve technical efficiency in early-adopting organizations are legitimized in the environment. At this point new and existing organizations will adopt the structural form even if the form doesn’t improve efficiency. Therefore the theory views that an organization is structured and works to achieve social outcomes in the public auditor’s services (Schneider, 2014).

Institutional theory is of the view that the organization has structured operations to ensure social accountability. The real functioning of the organization is complemented by an effective internal audit process. According to Goodwin (2014) posited that institution internal audit functions are hard and complex to realize and that the external picture of the organization may be weakly associated with the organization’s internal operations.

The internal auditor roles focus on improving corporate governance in an institutionalized context which is the basis for the adoption of the institutional theory. These then demands for greater scrutiny of the organization’s financial reporting to safeguard the interest of the stakeholders. Evaluation of the internal auditor’s role cannot be avoided particularly where the function is a key feature of organizational effectiveness (Dalila, 2013).

According to Millichap, (2012), fundamentally, internal auditors roles have now became much more essential as a control within organizations and a key to effective risk management. Internal auditors are heavily involved in the organization in the continuous internal audit process and ultimately share with the boards their recommendations which are expected to contribute to the organization’s objectives (Jamal, 2011).

iii. Theory of Inspired Confidence
According to Theory of Inspired Confidence (Dutch professor Theodore Limperg, 1920s) theory addresses both the demand for and the supply of audit services and the demand for audit services is the direct consequence of the participation of outside stakeholders in the organizations. These stakeholders demand accountability from the management, in return for their contribution to the organizations (AAA, 2011) since information provided by management might be biased, a possible divergence between the interest of management and outside stakeholders, an audit of this
information is required. With regard to the level of audit assurance that auditor should provide, (the supply side), which require additional staff or other resources and which require legal or regularity reform. Some suggestions for early action to start reform are training for all internal audit staff, reducing the emphasis on pre-audit, increase the importance of internal auditors recommendations and management actions, working long-term with managers rather than sweeping in to audit them and their staff, involve management and staff in IA planning, work with managers to develop action plans and produce IA publications for all internal auditors and clients IIA, (2012).

As the audit information given by internal auditors may become more complex, users of information will have more difficult, or even impossible, to obtain direct assurance about the characteristics of the information received. As organizations have grown in size, the volume of their transactions has increased. As a result of these changes, errors are more likely to creep into the accounting data and the resulting financial statements. Additionally, with the increasing complexity of transactions, accounting systems and financial statements, users of external financial statements are less able to evaluate the characteristics of the information for themselves. Therefore, there is a growing need for the financial statements to be examined by an independent qualified auditor, who has the necessary competence and expertise to understand the entity’s business, its transactions and its accounting system (Ruto, 2011).

County government’s financial statements are prepared by its directors and these directors are essentially reporting on their own Characteristics. Users of the financial statements want the statements to portray the company’s financial performance, position and cash flows as accurately as possible. However, they perceive that the directors may bias their report so that it reflects favorably on their management of the company’s affairs (Fama, and Jensen, 2013), thus it can be seen that there is a potential conflict of interest between the preparers and users of the financial statements. The auditors play a vital role in helping to ensure that directors provide, and users are confident of receiving information which is a fair representation of the company’s financial affairs. Senior management are normally offered rewards depending on performance agreed on in reward based plans which are formulated to provide an incentive to management to increase shareholder wealth and to attract and retain the most competent and qualified staff (Maletta, 2013). Internal auditors are used as a control mechanism for evaluating management action against the expectations of the board and shareholders .This theory relates to the variable under study on staff competence.

iv. Policeman Theory

According Policeman Theory (Hayes et al., 1999) explains that an auditor acts as a policeman focusing on arithmetical accuracy and on prevention and detection of fraud. However, due to its inability to explain the shift of auditing to, ‘Verification of truth and fairness of the financial statements,’ the theory seems to have lost much of its explanatory power. However, because the audit report is the medium of communication between the auditor and the users of the audit report, this report must be understandable, objective and accepted by the users as a relevant source of information. The relevance of the report means that it must make difference in decision making; otherwise, the users of the financial statements will not read the report and will not consider it in the decision-making process.

Is an auditor responsible for discovering fraud, like a policeman and Up until the 1940s it was widely held that an auditor’s job was to focus on arithmetical accuracy and on prevention and detection of fraud. However, from the 1940s until the turn of the century there was a shift of auditing to mean verification of truth and fairness of the financial statements. Recent financial statement frauds. The demand for audit arises from the potential conflict of interest that exists between stakeholders and managers In other words, as a consequence of legal, physical and economic factors, users of a company’s external financial statements are not able to verify for themselves the reliability of the information contained in the financial statements. Although for example, if they are major shareholders in company, they have de facto right of access to the company’s books and records (Chepkorir, 2010).

In addition, there are different levels of reform that can be undertaken. It is worthwhile to evaluate what reform measures could be taken immediately, which need the cooperation with others; such as county ministers, chief officers, Accounting Officers, Auditor-General,( Kashan and Nabeel,2013),As the demand for audit services is triggered by many factors, including the remoteness gap between the users of the financial statements and the preparers of these statements; the conflict of interest between the users of the financial statements; the complexity of the economic transactions; and the expected effect of the financial statements on decision making Taking into account the external auditor’s view, the audit risk assessment should consider whether the company has adopted appropriate accounting policies and, where necessary, made appropriate estimates and judgments. This theory relates to the variable under study on performance of internal auditor.

c) Conceptual framework

Conceptual framework is a scheme of concepts/ variables which the study will achieve the set
The management support with resources and commitment to implement the internal audit recommendations is essential in attaining audit effectiveness. Administration support is then another factor contributing to effectiveness of internal auditors identified by Zulkifli Baharud-din et al. (2014). The support and commitment of management also have the certain impact to make sure internal auditing is functioning effectively. The success of internal auditing function will depend on the strength of management’s support for the auditing process. They have to accept the fact that the internal auditing process is just as critical and important activity as any other process within the organization. The outcome of the study shows that there was a positive significant statistical relationship between financial accountability and Management support with high level of accountability. The management’s commitment to implement audit recommendations improves the operation of the audit, as a result of which attributes would improve to the benefit of audit effectiveness. The section of management support consists of questions related to accessibility level of information by internal auditor in an organization, the level of facilitation, in terms of equipment and budget, by the management to internal auditor.

Adel (2011) indicated that there is inadequate staffing of internal accounting and auditing departments in government and specifically the internal audit function is generally under resourced and this affects the characteristics of the internal auditors in financial management hence exposing public organizations to face threats of misuse of public funds. The study indicates that there was statistical significant correlation between inclusivity practice ratings and financial accountability. High ratings on management support in audit characteristics associated to improvement on financial accountability.

ii. Staff Competence

Competency can be relate to the ability of an individual to perform a job or task properly based on the educational level, professional experience and the effort of the staffs for continuing professional development. Auditors’ competency determines the effective auditing in the organization. It contributes to the ability of the auditors to perform the systematic and discipline audit approach to improve the effectiveness of IA. Unegbu and Kida, (2011) concluded in their study that IA office constantly face the problem of low technical staff proficiency and high staff turnover, which would limit it capacity to provide effective service to management.

Kamere (2013) did a study of challenges faced in professionalizing the internal audit function in Kenya’s industrial and Allied companies listed in the Nairobi Stock Exchange. The study found that in organizations where management failed to recognize the role of the internal audit function this led to incompetency.

Hack (2013) carried out a study on challenges facing internal auditors in 24 countries in Europe and found that main challenges facing internal auditors were the widening technical skills gap, corruption and lack of authority. The study also identified other challenges that
hinder the effective functioning of internal auditors which included high costs of maintaining the function, reluctance to travel, cultural and language differences, failure to adhere to characteristics standards and limited knowledge on acceptable accounting standards, regulations and local laws. The study found that only 34% of the respondents were positive that internal auditors followed internal audit standards. The study recommended that institution should enhance internal audit competency.

Cattrysse (2014) carried out a study investigating the role of internal auditors in organizations. The study found that internal auditors maintain the structure of organizations internal operations but also noted that the main problem facing the internal auditor is poor working conditions that create an unfavorable working environment. According to American Accounting Association (2011) on issues of competency pointed out that internal auditors should engage in those services for which they have the necessary knowledge, skills, and experience and that they should perform duties in accordance with the Standards; and continually improve their proficiency and effectiveness.

iii. Audit risk assessment

Internal Audit plays a pivotal role in ensuring that efficient controls are operating in all the activities, be it liabilities or assets of an organization. Internal auditors should report to a risk assessment within the organization whose members are appointed by the Executive risk assessment of the organization (Botez, 2010). An audit risk assessment is a selected number of members of a company's board of directors whose responsibilities include helping auditors remain independent of management. Most audit risk assessments are made up of three to five or sometimes as many as seven directors who are not a part of company management. It was concluded that influence of audit characteristics in county government was significant to predict Financial Accountability and the model was fit to predict their relationship.

The audit risk assessment should review the clarity and completeness of disclosures in the financial statements and consider whether the disclosures made are set properly in context that the audit risk assessment is not satisfied with any aspect of the proposed financial reporting by the company; it shall report its views to the board. The audit risk assessment should review related information presented with the financial statements, including the business review, and corporate governance statements relating to the audit and to risk assessment management (Financial Reporting Council, 2012).

Waweru (2013) conducted a study on Audit Risk assessments and Corporate Governance in developing Countries with a specific focus on Kenya. The study focused on how audit risk assessments operate in a developing country such as Kenya and how the practices compare with those of western economies and other emerging economies; how audit risk assessments relate to management, internal audit, and external auditor; and the major achievements and challenges facing audit risk assessments in Kenya. The findings indicate that there is much similarity to studies in major economies. However, skills shortage and dominant shareholder or government may have affected the operations of audit risk assessments. This reveals that there was positive statistical significance correlation between audit risk assessment and financial accountability.

The relationship between the internal audit function and the Audit Risk assessment should be clearly defined and addressed in the organization’s charter. It is the management’s responsibility, not the audit risk assessments' responsibility, to prepare complete accurate financial statements and disclosures in accordance with financial reporting standards and applicable rules and regulations. However the audit risk assessment should consider significant accounting policies, any changes to them and any significant estimates and judgments. Krishnan and Visvanathan (2013) carried out the study on the role of audit risk assessments and internal auditors in their reporting to management about internal gaps after the passage of the Sarbenes Oxley Act (SOX). The study sampled 164 institutions where audit risk assessment members were the respondents. The study revealed that in the frequent meetings by the internal audit risk assessments, there were no clear responsibilities over effective reporting and over the reporting of fraud in organizations.

According to a study carried out by Sandra and Henk (2011), it was established that audit risk assessments in Groningen and Leeuwarden had not made any significant change in local and national government operations. They further argue that they did not find a direct effect of these audit risk assessments but believe that characteristics auditing could influence the characteristics of democratic processes in a more indirect way.

e) Research Gap

It is evident from the literature that most of the studies concerning the factors affecting internal auditing have been carried out in developed countries, with fewer studies carried out in Kenya which has a devolved system of government. The findings of these studies generally show that in the developed countries both internal and external audit are used for monitoring purposes. The increased and closer co-operation between internal auditors and management has rendered the question of independence all important. Measures must be taken to ensure that the internal auditors of county government can stand firm, if so
required by the internal auditor’s findings, and report to the board. The most important steps are to see to it that the internal auditors of county government is not appointed by management and thus not fired by it either, and that the internal auditors budget is decided in collaboration between management and the audit risk assessment or the executive board, whichever the case may be. The internal auditors of county government manager must also have the possibility to deploy the budget as he/she sees fit.

Kirima (2016) studied on the factors that affect the characteristics of the internal audit function in government ministries in Kenya. The study found out that the internal auditors working environment impacted on the characteristics of internal audit function and the function’s performance is impacted by the presence of a clear structure of responsibility linked to set targets, flexibility in the approach of the internal audit work, better exposure of internal audit staff through attendance of professional conferences and exchange programs, professional training support and a clear recognition and reward system. However there is no clear result explode on the effects of internal audit characteristics on financial accountability of county government.

III. Research Methodology

The study adopted descriptive research design, it would be structured in a formal study with clear and would be stated to investigative questions which the researcher to investigate who, what, where, when and how (Cooper and Schindler, 2010). Also descriptive design according to Kothari (2011) is concerned with describing, recording, analyzing and interpreting of variables under the study. The study population comprised of internal auditors from 47 county governments which represented 47 respondents. The target population involves all the members of any well-defined class of people, events or objects under study (Salaria 2012).

The study adopted census sampling would be used to select all 47 respondents comprised of 47 internal auditors from each county which would be ideal sample for the study. Sample design refers to methods used to select individuals from given population to be included in a sample for measurement in a study (Corona, et al., 2014). Sample size is a given number of members or cases from the accessible population which was carefully selected so as to be a representative of the whole population with the relevant to internal auditing characteristics of which 47 counties were represented in Kenya.

The questionnaire was used to collect primary data. According to Kothari (2012) the questionnaire is the most appropriate instrument due to its ability to collect a large amount of information in a reasonably quick span of time and economical manner. The questionnaire was used to collect primary data consisting of both structural and unstructured questions. These questions enabled the researcher to collect qualitative data that was helpful in providing a more insightful interpretation of the results from the study.

IV. Results and Interpretation of Findings

a) Introduction

The chapter presented the discussion and conclusion of the study. From the study, the target population was 47, 43 respondents responded and returned the questionnaire. This constituted 91.4% response rate.

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</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>Valid</td>
</tr>
<tr>
<td>male</td>
</tr>
<tr>
<td>female</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

The result also was presented in the figure 4.1.
The majority of the respondents were male in the county in internal auditor.

ii. Age characteristic

The study asked the respondents to indicate their age bracket as presented in table 4.3

<table>
<thead>
<tr>
<th>Age Bracket</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25 years</td>
<td>3</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
</tr>
<tr>
<td>26-35 years</td>
<td>12</td>
<td>27.9</td>
<td>27.9</td>
<td>34.9</td>
</tr>
<tr>
<td>36-45 years</td>
<td>16</td>
<td>37.2</td>
<td>37.2</td>
<td>72.1</td>
</tr>
<tr>
<td>46-55 years</td>
<td>8</td>
<td>18.6</td>
<td>18.6</td>
<td>90.7</td>
</tr>
<tr>
<td>56-65 years</td>
<td>4</td>
<td>9.3</td>
<td>9.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The results showed that 16(37.2%) of the respondents were aged at 36-45 years, 12(27.9%) of the respondents were aged 26-35 years, 8(18.6%) of the respondents were aged 46-55 years, 4(9.3%) of the respondents were aged 56-65 years, 3(7.0%) of the respondents were aged 18-25 years.

iii. Highest academic qualification

The respondent were asked to indicate the level of academic qualification as presented in table 4.4

<table>
<thead>
<tr>
<th>Academic Qualification</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional (CPA)</td>
<td>6</td>
<td>14.0</td>
<td>14.0</td>
<td>14.0</td>
</tr>
<tr>
<td>Diploma/Certificate</td>
<td>4</td>
<td>9.3</td>
<td>9.3</td>
<td>23.3</td>
</tr>
<tr>
<td>Bachelor Degree</td>
<td>29</td>
<td>67.4</td>
<td>67.4</td>
<td>90.7</td>
</tr>
<tr>
<td>Master degree</td>
<td>3</td>
<td>7.0</td>
<td>7.0</td>
<td>97.7</td>
</tr>
<tr>
<td>Doctor Degree</td>
<td>1</td>
<td>2.3</td>
<td>2.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The study showed that Bachelor Degree were 29(67.4%), Professional (CPA) were 6(14.0%), Diploma/Certificate were 4(9.3%), Master degree were 3(7.0%), and Doctor Degree was 1(2.3%).
b) Descriptive statistic

i. Management Support

The study sought to determine the effect of management support on financial accountability of county government. The result was presented in table 4.5

<table>
<thead>
<tr>
<th>Table 4.5: Management support</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The management provides budget for audit services</td>
<td>43</td>
<td>1.00</td>
<td>5.00</td>
<td>3.9535</td>
<td>.92462</td>
</tr>
<tr>
<td>The management have adequate number of staff in the audit department</td>
<td>43</td>
<td>1.00</td>
<td>4.00</td>
<td>1.6047</td>
<td>.79101</td>
</tr>
<tr>
<td>The management provide an Access to financial year report</td>
<td>43</td>
<td>3.00</td>
<td>5.00</td>
<td>3.9767</td>
<td>.55585</td>
</tr>
<tr>
<td>The management implements all audit Recommendation</td>
<td>43</td>
<td>3.00</td>
<td>5.00</td>
<td>4.1860</td>
<td>.62700</td>
</tr>
<tr>
<td>The success of internal auditing function will depend on the strength of management</td>
<td>43</td>
<td>3.00</td>
<td>5.00</td>
<td>4.1628</td>
<td>.68765</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>43</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The result showed that management implements all audit Recommendation with mean value of 4.1860 with standard deviation of .62700, success of internal auditing function will depend on the strength of management with mean value of 4.1628 with standard deviation of .68765. The management provide an Access to financial year report with mean value of 3.9767 with standard deviation of .55585. The management provides budget for audit services with mean value of 3.9535 with standard deviation of .92462 and The management have adequate number of staff in the audit department with mean value of 1.6047 with standard deviation of .79101.

ii. Audit Risk Assessment

The study sought to determine the effect of audit risk assessment on financial accountability of county government. The result was presented in table 4.6.

<table>
<thead>
<tr>
<th>Table 4.6: Audit Risk Assessment</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The audit risk assessment has Audit charter in county government</td>
<td>43</td>
<td>1.00</td>
<td>5.00</td>
<td>4.0465</td>
<td>.89850</td>
</tr>
<tr>
<td>The audit risk assessment liaise between internal auditors and external auditors</td>
<td>43</td>
<td>3.00</td>
<td>5.00</td>
<td>4.0930</td>
<td>.52617</td>
</tr>
<tr>
<td>The audit risk assessment produce quarterly financial reports County Government</td>
<td>43</td>
<td>3.00</td>
<td>5.00</td>
<td>4.1860</td>
<td>.62700</td>
</tr>
<tr>
<td>The audit risk assessment conduct annual Appraisals of IA in County Government</td>
<td>42</td>
<td>3.00</td>
<td>5.00</td>
<td>4.0476</td>
<td>.62283</td>
</tr>
<tr>
<td>There is compliance test in audit risk assessment</td>
<td>43</td>
<td>1.00</td>
<td>3.00</td>
<td>1.5116</td>
<td>.66805</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The audit risk assessment produce quarterly financial reports County Government with mean value of 4.1860 and standard deviation of .62700, the audit risk assessment liaise internal auditors and external auditors with mean value of 4.0930 and standard deviation of .52617. The audit risk assessment conduct annual Appraisals of IA in County Government with mean value of 4.0476 and standard deviation of .62283. There is compliance test in audit risk assessment with mean value of 1.5116 and standard deviation of .66805.

iii. Audit Staff competence

The study sought to determine the effect of audit staff competence on financial accountability of county government. The result was presented in table 4.7
Table 4.7: Audit staff competence

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is minimal Professionalism in audit services in County Government</td>
<td>43</td>
<td>3.00</td>
<td>5.00</td>
<td>4.0930</td>
<td>.64785</td>
</tr>
<tr>
<td>There is minimal training and capacity building in audit services in County Government</td>
<td>43</td>
<td>1.00</td>
<td>5.00</td>
<td>2.3488</td>
<td>1.37812</td>
</tr>
<tr>
<td>There is minimal motivation among audit staff in County Government</td>
<td>43</td>
<td>1.00</td>
<td>5.00</td>
<td>2.6744</td>
<td>1.49158</td>
</tr>
<tr>
<td>Inadequate working tools within audit department in County Government</td>
<td>43</td>
<td>1.00</td>
<td>5.00</td>
<td>3.0233</td>
<td>1.50378</td>
</tr>
<tr>
<td>Internal auditors maintain the structure of organizations internal operations in County Government</td>
<td>43</td>
<td>1.00</td>
<td>5.00</td>
<td>2.6279</td>
<td>1.48040</td>
</tr>
</tbody>
</table>

There is minimal Professionalism in audit services in county government with mean value of 4.0930 and standard deviation of .64785. Inadequate working tools within audit department in County Government with mean value of 3.0233 and standard deviation of 1.50378. There is minimal motivation among audit staff in County Government with mean value of 2.6744 and standard deviation of 1.49158. Internal auditors maintain the structure of organizations internal operations with mean value of 2.6279 and standard deviation of 1.48040. There is minimal training and capacity building in audit services in County Government with mean value of 2.3488 and standard deviation of 1.37812.

The respondents were asked to indicate the extent to which they measure financial accountability of county government as presented in Table 4.8.

Table 4.8: Financial accountability

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timely reports</td>
<td>43</td>
<td>1.00</td>
<td>5.00</td>
<td>3.9767</td>
<td>1.07987</td>
</tr>
<tr>
<td>Adequate audit evidence</td>
<td>43</td>
<td>3.00</td>
<td>5.00</td>
<td>4.2791</td>
<td>.73438</td>
</tr>
<tr>
<td>Reliability of asset have increased statements</td>
<td>43</td>
<td>1.00</td>
<td>5.00</td>
<td>3.8372</td>
<td>1.11120</td>
</tr>
</tbody>
</table>

The study findings indicated that adequate audit evidence was shown by a mean value of 4.2791 and standard deviation of .73438, timely reports were evidenced by a mean of 3.9767 and standard deviation of 1.07987, and Reliability of asset have increased statements with a mean of 3.8372 and standard deviation of 1.11120.

c) Mixed Model Analysis

This was conducted to test whether the respondents agreed on the effect of each variable parameter.

Table 4.9: Model Dimension

<table>
<thead>
<tr>
<th></th>
<th>Number of Levels</th>
<th>Number of Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Management support</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>Audit Risk assessment</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Staff competences</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>MGT * Audit Risk</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>MGT * Staff</td>
<td>27</td>
<td>4</td>
</tr>
<tr>
<td>Audit Risk * Staff</td>
<td>26</td>
<td>0</td>
</tr>
<tr>
<td>MGT * Audit Risk * Staff</td>
<td>32</td>
<td>0</td>
</tr>
</tbody>
</table>

Residual                      | Total            | 141                 | 33                  |

Dependent Variable: Financial Accountability.

The result showed factor analysis of levels 13 and number of parameters 12 of respondents accepted that management support affect financial accountability. 11 respondents agreed that audit risk assessment with 8
respondents while staff competencies 8 levels with 5 parameters.

Type III test was conducted also to examine the relationship between fixed effect and model dimension of audit characteristics and financial accountability as presented in table 4.10.

Table 4.10: Type III Tests of Fixed Effects

<table>
<thead>
<tr>
<th>Source</th>
<th>Numerator df</th>
<th>Denominator df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1</td>
<td>11</td>
<td>582.125</td>
<td>.000</td>
</tr>
<tr>
<td>Management support</td>
<td>5</td>
<td>11</td>
<td>.763</td>
<td>.595</td>
</tr>
<tr>
<td>Audit risk assessment</td>
<td>4</td>
<td>11</td>
<td>.416</td>
<td>.794</td>
</tr>
<tr>
<td>Staff competence</td>
<td>5</td>
<td>11</td>
<td>1.227</td>
<td>.360</td>
</tr>
</tbody>
</table>

Dependent Variable: Financial Accountability

The study showed that management support, audit risk assessment and staff competence was characterized by coefficient value of .595, .794 and .360. This implied that audit risk assessment had more strength of the effect on financial accountability as evidenced by type iii tests of fixed effects of .794. The F tests the effect of management support. This test is based on the linearly independent pairwise comparisons among the estimated marginal means while dependent Variable is financial accountability with F test value of 582.125 p .000<.05.

d) Correlation analysis

The study sought to examine the relationships between study variables using Pearson correlation and the results were as follows.

Table 4.11: Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>Management support</th>
<th>audit risk assessment</th>
<th>Staff competence</th>
<th>Financial accountability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management support</td>
<td>Pearson Correlation</td>
<td>.790**</td>
<td>.426**</td>
<td>.517**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>43</td>
<td>43</td>
<td>43</td>
</tr>
<tr>
<td>Audit risk assessment</td>
<td>Pearson Correlation</td>
<td>.790**</td>
<td>.520**</td>
<td>.699**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>43</td>
<td>43</td>
<td>43</td>
</tr>
<tr>
<td>Staff competence</td>
<td>Pearson Correlation</td>
<td>.426**</td>
<td>.769**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>43</td>
<td>43</td>
<td>43</td>
</tr>
<tr>
<td>Financial accountability</td>
<td>Pearson Correlation</td>
<td>.517**</td>
<td>.699**</td>
<td>.769**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>43</td>
<td>43</td>
<td>43</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

The outcome of the study shows that there was a positive significant statistical relationship between financial accountability and Management support (r = .517**, n=43, p=.05), with high level of accountability associated to improvement in Management support and vice-versa. The study concurred with Zulkifli Baharud-din et al. (2014) who noted that the outcome of the study shows that there was positive significant statistical relationship between financial accountability and Management support.

The study also sought to examine whether there was any statistical significant influence of Audit risk assessment on financial accountability; Pearson correlation was conducted on audit risk assessment as an independent variable and financial accountability as the dependent variable. Significant level (p-value) was
set at .05, such that if the p-value was less than 0.05, it would be concluded that a significant difference exists, and if the p-value was larger than 0.05, then it would be that a significant difference does not exists as depicted in Table 4.11 of SPSS output.

Table 4.11 above reveals that there was positive statistical significance correlation between audit risk assessment and financial accountability \((r = .699^{**}; n = 43; p < .05)\), with higher ratings on audit risk assessment associated to improvement in financial accountability and vice-versa. Waweru (2013) reveals that there was positive statistical significance correlation between audit risk assessment and financial accountability with higher ratings on audit risk assessment associated to improvement in financial accountability and vice-versa.

The study sought to examine whether there was any significant statistical influence of Staff competence on financial accountability, and correlation analysis was conducted, with scores on Staff competence in audit characteristics as an independent variable and financial accountability as a dependent variable. The significant level (p-value) was set at 0.05 confidence level and SPSS correlation analysis results are as in Table 4.11.

Table 4.12: Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.702(^a)</td>
<td>.492</td>
<td>.486</td>
<td>.54688</td>
</tr>
</tbody>
</table>

\(^a\) Predictors: (Constant), Management support, Audit risk assessment, Staff competence

The model summary reveals that Management support, Audit risk assessment, and Staff competence in audit characteristics accounted for 49.2% (coefficient \(R^2 = 0.492\)) of the variation in financial accountability. The obtained result suggests that variation in the level of financial accountability in county government is explained about 49.2% of the variability in audit characteristics and thus the remaining (100-49.2) % was explained by other variables.

Table 4.13: ANOVA\(^a\)

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>48.705</td>
<td>3</td>
<td>24.353</td>
<td>81.427</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>50.245</td>
<td>39</td>
<td>.299</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>98.950</td>
<td>42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Dependent Variable: Financial Accountability

\(^b\) Predictors: (Constant), Management support, Audit risk assessment, Staff competence

From the ANOVA output shown in Table 4.13, it is evident that Management support, Audit risk assessment, Staff competence in audit characteristics is indeed a significant predictor to Financial Accountability, \(F (3, 42, 24.353, .299) = 81.427\), with significant level of \(p = .000\). This was concluded that influence of audit characteristics in county government was significant to predict Financial Accountability and the model was fit to predict their relationship. The result was supported by (Botez, 2010) that an audit characteristic predicts Financial Accountability of firms.
improvement in financial accountability. The study concluded that there was statistical significant correlation between staff competence and financial accountability.

b) Recommendation

The study sought to determine the effect of audit staff competence on financial accountability of county government. The professionalism should be used in audit services in county government and training and capacity building for adequate audit evidence. Reliability of asset have increased statements should be characterized by financial accountability as evidenced by type III tests of fixed effects. The effect of management support should be based on the comparisons among financial accountability measures.

c) Suggestion for another study

Another can be conducted to examine the effect of management support on the comparisons of financial accountability and financial performance of other firms not under this study.

Acknowledgements

I acknowledge the almighty God for providing me good health life throughout my study. I also would like to acknowledge my Mr. Wycliffe Otera Maranga (Editor Research and Publication Consultant for his effort in helping me edit this article. I also acknowledge the university lecturers who provided me research ideas during my course work and all my classmates. God Bless You all.

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Fellows receive discounts on future publications with Global Journals up to 60%. Through our recommendation programs, members also receive discounts on publications made with OARS affiliated organizations.

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**GJ Account**

*Unlimited forward of Emails*

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**Premium Tools**

*Access to all the premium tools*

To take future researches to the zenith, fellows receive access to all the premium tools that Global Journals have to offer along with the partnership with some of the best marketing leading tools out there.

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*Organize seminar/conference*

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*Early invitations to all the symposiums, seminars, conferences*

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AND MUCH MORE

GET ACCESS TO SCIENTIFIC MUSEUMS AND OBSERVATORIES ACROSS THE GLOBE
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ASSOCIATE OF MANAGEMENT AND BUSINESS RESEARCH COUNCIL

ASSOCIATE OF MANAGEMENT AND BUSINESS RESEARCH COUNCIL is the membership of Global Journals awarded to individuals that the Open Association of Research Society judges to have made a 'substantial contribution to the improvement of computer science, technology, and electronics engineering.

The primary objective is to recognize the leaders in research and scientific fields of the current era with a global perspective and to create a channel between them and other researchers for better exposure and knowledge sharing. Members are most eminent scientists, engineers, and technologists from all across the world. Associate membership can later be promoted to Fellow Membership. Associates are elected for life through a peer review process on the basis of excellence in the respective domain. There is no limit on the number of new nominations made in any year. Each year, the Open Association of Research Society elect up to 12 new Associate Members.
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**TO THE INSTITUTION**

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Global Journals sends a letter of appreciation of author to the Dean or CEO of the University or Company of which author is a part, signed by editor in chief or chief author.

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**Certificate**

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**Get Honored Title of Membership**
Associates can use the honored title of membership. The “AMBRC” is an honored title which is accorded to a person’s name viz. Dr. John E. Hall, Ph.D., AMBRC or William Walldroff, M.S., AMBRC.

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**ACCESS TO ALL THE PREMIUM TOOLS**
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**Earn 60% of sales proceeds**

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**Reviewers**

**Get a remuneration of 15% of author fees**

Fellow members are eligible to join as a paid peer reviewer at Global Journals Incorporation (USA) and can get a remuneration of 15% of author fees, taken from the author of a respective paper.

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All members get access to 2 selected scientific museums and observatories across the globe. All researches published with Global Journals will be kept under deep archival facilities across regions for future protections and disaster recovery. They get 5 GB free secure cloud access for storing research files.
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Preferred Author Guidelines

We accept the manuscript submissions in any standard (generic) format.

We typeset manuscripts using advanced typesetting tools like Adobe In Design, CorelDraw, TeXnicCenter, and TeXStudio. We usually recommend authors submit their research using any standard format they are comfortable with, and let Global Journals do the rest.

Alternatively, you can download our basic template from https://globaljournals.org/Template.zip

Authors should submit their complete paper/article, including text illustrations, graphics, conclusions, artwork, and tables. Authors who are not able to submit manuscript using the form above can email the manuscript department at submit@globaljournals.org or get in touch with chiefeditor@globaljournals.org if they wish to send the abstract before submission.

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Authors must ensure the information provided during the submission of a paper is authentic. Please go through the following checklist before submitting:

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2. Authors must accept the privacy policy, terms, and conditions of Global Journals.
3. Ensure corresponding author’s email address and postal address are accurate and reachable.
4. Manuscript to be submitted must include keywords, an abstract, a paper title, co-author(s’) names and details (email address, name, phone number, and institution), figures and illustrations in vector format including appropriate captions, tables, including titles and footnotes, a conclusion, results, acknowledgments and references.
5. Authors should submit paper in a ZIP archive if any supplementary files are required along with the paper.
6. Proper permissions must be acquired for the use of any copyrighted material.
7. Manuscript submitted must not have been submitted or published elsewhere and all authors must be aware of the submission.

Declaration of Conflicts of Interest

It is required for authors to declare all financial, institutional, and personal relationships with other individuals and organizations that could influence (bias) their research.

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Authors are solely responsible for all the plagiarism that is found. The author must not fabricate, falsify or plagiarize existing research data. The following, if copied, will be considered plagiarism:

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- Findings
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2. Drafting the paper and revising it critically regarding important academic content.
3. Final approval of the version of the paper to be published.

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The corresponding author should mention the name and complete details of all co-authors during submission and in manuscript. We support addition, rearrangement, manipulation, and deletions in authors list till the early view publication of the journal. We expect that corresponding author will notify all co-authors of submission. We follow COPE guidelines for changes in authorship.

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Acknowledgments

Contributors to the research other than authors credited should be mentioned in Acknowledgments. The source of funding for the research can be included. Suppliers of resources may be mentioned along with their addresses.

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Preparing your Manuscript

Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.
**Manuscript Style Instruction (Optional)**

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27” x 11”", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word “Abstract” in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

**Structure and Format of Manuscript**

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

a) A title which should be relevant to the theme of the paper.

b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.

c) Up to 10 keywords that precisely identify the paper’s subject, purpose, and focus.

d) An introduction, giving fundamental background objectives.

e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.

f) Results which should be presented concisely by well-designed tables and figures.

g) Suitable statistical data should also be given.

h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.

j) There should be brief acknowledgments.

k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.
**Format Structure**

It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

All manuscripts submitted to Global Journals should include:

**Title**

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

**Author details**

The full postal address of any related author(s) must be specified.

**Abstract**

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised not to include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

**Keywords**

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, “What words would a source have to include to be truly valuable in a research paper?” Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

**Numerical Methods**

Numerical methods used should be transparent and, where appropriate, supported by references.

**Abbreviations**

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

**Formulas and equations**

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

**Tables, Figures, and Figure Legends**

Tables: Tables should be cautiously designed, uncrowed, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.
Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

Preparation of Electronic Figures for Publication

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

Tips for Writing a Good Quality Management Research Paper

Techniques for writing a good quality management and business research paper:

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of management and business then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.
6. **Bookmarks are useful:** When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. **Revise what you wrote:** When you write anything, always read it, summarize it, and then finalize it.

8. **Make every effort:** Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. **Produce good diagrams of your own:** Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. **Use proper verb tense:** Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. **Pick a good study spot:** Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. **Know what you know:** Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. **Use good grammar:** Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice. Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. **Arrangement of information:** Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. **Never start at the last minute:** Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. **Multitasking in research is not good:** Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. **Never copy others’ work:** Never copy others’ work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. **Go to seminars:** Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. **Refresh your mind after intervals:** Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. **Think technically:** Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

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21. **Adding unnecessary information:** Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn’t be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

22. **Report concluded results:** Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

23. **Upon conclusion:** Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

**Informal Guidelines of Research Paper Writing**

**Key points to remember:**
- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

**Final points:**
One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

**The introduction:** This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

**The discussion section:**
This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

**General style:**
Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

**To make a paper clear:** Adhere to recommended page limits.

**Mistakes to avoid:**
- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.
• Use paragraphs to split each significant point (excluding the abstract).
• Align the primary line of each section.
• Present your points in sound order.
• Use present tense to report well-accepted matters.
• Use past tense to describe specific results.
• Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
• Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:
Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.
• Fundamental goal.
• To-the-point depiction of the research.
• Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:
- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:
The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:
- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

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Approach:
Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):
This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:
Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:
- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that’s all.

Approach:
It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer’s interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:
- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:
The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

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Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

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Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

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Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.
Approach:
When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.
Describe generally acknowledged facts and main beliefs in present tense.

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