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Impact of internal control system on the financial performance of selected quoted brewery firms in Nigeria

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Received: 02.02.2021
Revised: 10.02.2021
Accepted: 11.02.2021

ABSTRACT

The study examines the impact of interval control system on the financial performance of selected quoted brewery firms in Nigeria. To achieve the objective of this study, the research specifically looked at the role of control environment, control activities and monitoring on the financial performance of quoted brewery firms in Nigeria. The study adopted survey research design. The population chosen for this study was all four brewery firms quoted in the Nigeria Stock Exchange. The study used a sample of two brewery firms from a target population of four firms quoted in Nigeria Stock Exchange. The sample was drawn using simple random sampling technique. The study used both primary and secondary data. Primary data was collected using structured questionnaire, while secondary data was obtained from financial statement of the sampled brewery firms. The data obtained from the questionnaire were analyzed using multiple regression statistical tools in SPSS (Statistical Packages for Social Sciences). The result of the analysis revealed that a significant change in financial performance of brewery firms is linked to internal control systems and this was because the p-value obtained (i.e, 0.0019, 0.005 and 0.006) respectively using multiple regression was lesser than the benchmark value of 5% specified in SPSS for the analysis. Based on the findings of this study, it is concluded that there was significant relationship between internal control environment, control activities, monitoring and financial performance of listed brewery firms quoted in Nigeria Stock Exchange. Based on this result, the study recommended that interval control environment, control activities and monitoring be enhanced to further improve the financial performance of brewery firms quoted in Nigeria Stock Exchange and Management should develop strategies that will ensure that internal control system is effective and efficient, so that fraudulent practices in the organization will reduce to the barest minimum.

Keywords:1 *Internal Controls,2 Control Environment,3 Control Activities,4 Monitoring,5 Institutional Theory.*

1. Introduction

Decision relating to a system of effective internal controls is a critical component of a firm management and a foundation for the safe and sound operations of business organizations and consequently, increasing corporate performance. Internal control refers to the measures instituted by an organization so as to ensure the attainment of firm's objectives. They are set of policies and procedures adopted by an organization in ensuring that transactions are processed in an appropriate manner to avoid waste, theft and misuse of resources (tunji, 2013; yourself, 2017 and ndifon & patric, 2014).

A sound internal control system helps an organization to prevent frauds, errors and minimize wastage. A system of strong internal controls can help to ensure that the goals and objectives of an organization will be met, that the organization will achieve long term profitability targets and maintain reliable financial and managerial reporting. This is supported by gamage, lock and fernando (2014) who stated that internal control system will assist in ensuring that the organization comply with procedures, internal rules, plans and laws and regulations as well as decrease the risk of firm's reputation damage or expected losses. This help firm's management and board of directors to comply with laws and regulations produce reliable financial reports and safeguard the company's resources (gamage et al, 2014).

Gamage et al (2014) stressed that internal control comprised plan of an organization and all the coordinate methods and measures adopted within a business to safeguard its assets, check the accuracy and reliability of its accounting data and adherence to prescribed managerial policies. In order to survive and achieve desired performance and competitive advantage, organizations must effectively design and implement strategy fit to their core business and be able to adapt rapidly to change (bhalla, cave, dyer, dymond, morieux & orlande, 2011). According to lakis and girunas (2012) effective internal controls will assist managers with evaluations and reduce potential risks and as well grant managers the required information for strategic decisions. It can be stated that the success of an organization depend largely on internal control system put in place the owners. Organization in nigeria then, would obtain significant advantages from the adequate inclusion of internal controls within management practices.

The objective of internal control system is to ensure effectiveness and efficiency of operations, reliability of financial reporting and compliance with the applicable laws and regulations. Therefore, on the desire to achieve its objectives, most of the financial manager's time and efforts are consumed in putting in place a process that guides an organization towards achieving its objectives (hayali, dine, saril, dizman & gundogdu, 2012). Business success heavily depends on the ability of the financial managers to effectively managed these components of internal control (ayagre, appiah, gyamerah & nartey, 2014). Financial performance is considered in terms of measures like profitability using net profit margin (npm), return on assets (roa) and return on equity (roe). Therefore, internal control can be considered as all managerial decisions (such as control environment, risk assessment, information and communication system, control activities and monitoring) taken by the managers regarding the accomplishment of established objectives.

A system of tough internal controls can support to ensure that the goals and objectives of an organization will be met, that the company will help to attain long-term profitability targets and maintain reliable financial and managerial reporting (gamage et al., 2014). This type of system can assist in ensuring that the organization will comply with procedures, internal rules, plans, and laws and regulations as well decrease the risk of firm's reputation damage or unexpected losses. This help firm's management and board of directors to comply with laws and regulations, produce reliable financial reports and safeguard the company's resources (gamage, lock & fernando, 2014). Efficient internal control is very crucial to the financial performance of firms of all sizes and it serves as an important indicator of sound management and ensures financial health of firms.

As reported by ondieki (2013), fraud is a major enemy of profitability. Control measures are put in place to prevent, detect and eliminate fraudulent practices thereby give room for profitability. Effective internal control system support profitability of an organization by protecting the resources thereby preventing cases of loss. A poor or inefficient internal control measures exposes an organization to the preparation of inaccurate financial statement and records, stealing and mismanagement of business funds and non implementation of accounting policies in consistent with the applicable standards and thereby affecting the profitability growth and continuity of a company (bett & mamba, 2017). Agreeing with this view, arad and jamshedy-navid (2010) stated that firms with effective internal control system will improve the achievement of organizational objectives and as well maintain the firm's profitability, growth and continuity.

An internal control system has been found to be significant to organizations especially in the assurance of the reliability and accuracy of the financial reports. In the same vein, effective internal control system has an essential role to play in a firm's success (joki pii, 2010). Ejoh and ejom (2014) viewed firms that disclose ineffective internal control to have larger tendency of experiencing management errors in their operations than those firms that report effective internal control system. Therefore, the responsibility rest on the management of an organization to ensure that effective internal control system is put in place for the achievement of organizational established objectives.

Empirical studies have generated a variety of explanatory variables that are related to internal control system and which might be responsible for the profitability of firms (bett & mamba, 2017). These variables are: control environment, risk assessment, informational and communication system, control activities and monitoring. These variables are believed to be capable of reflecting the impact of internal control system on financial performance (profit utility) of firms (njeri, 2014).

Moreover, according to njeri (2014) organizations that had invested on effective internal control systems had more improved performance as compared to those organizations that had a weak internal control system. In a similar view bett and mamba (2017) stated that, lack of proper information and communication systems and weak internal controls activities have led to loss of revenue, embezzlement of collected revenue, and encouraged collusion to fraud among the workers. Specifically, it was revealed that organizations that observed control activities, risk assessment, ethical values, integrity, monitoring and information technology recorded higher financial performance.

Although a number of studies about the impact of internal control system on profitability of firms have been undertaken in countries around the world, most of these studies have focused on the study of non-financial firms across industries. Some of there studies are:

Kinyua, gakure, gekara and owa (2016) researched on the effect of internal control environment on the financial performance of companies quoted in the nairobi securities exchange. Eniola and akinselure (2016), adedeji and olubodu (2018) conducted a study on the effect of internal control on financial performance of firms in nigeria (a case study of selected manufacturing firms). Ndifon and patric (2014) and akinleye and kolawole (2020) researched into the impact of internal control on performance of tertiary institutions in nigeria. Hussaini and muhammed (2018) researched into the effect of internal control on performance of commercial banks in nigeria. Eke (2018) investigated internal control and financial performance of hospitality organizations in rivers state.

Despite the contributions of this sector to the economic development of the country, studies concerning the relationship between internal controls and financial performance of brewery firms in nigeria are few.

In the light of the above, it is strongly evident that none of the researchers specifically addressed the effect of internal controls on the financial performance of brewery firms in nigeria.

It is against this background that this study seeks to establish the effects of internal control on the financial performance of quoted brewery firms in nigeria. The main objective of the study was to establish the effects of internal control on the financial performance of selected quoted firms in nigeria. The specific objectives of the study were to determine the effect of control environment on the financial performance of selected quoted companies, to determine the influence of control of activities on the financial performance of selected quoted companies and to establish the influence of monitoring system on financial performance of selected quoted.

2.0 literature review

2.1 conceptual review

The concept of internal control has been viewed by several authors and scholars. For instance gamage et al., (2014) defined internal control as the process designed and affected by those charged with management, governance, and other personnel to provide reasonable assurance about the attainment of an entity's objectives about efficiency and effectiveness of operations; compliance with applicable laws and regulations; the reliability of financial reporting (gamage et al., 2014). To hopwood, leiner and young (2012) internal control is process oriented which focus more on business processes rather than on the outcomes of the processes. The main components of effective internal control processes are the control environment, risk assessment and management, control activities, information and communication, and monitoring. Therefore, it is good that the business owner could establish a strong and efficient internal control system as well as an internal audit department to reduce the chances of fraud occur which may cause the company a huge loss (shanmugam et al 2012). According to ndifon and patrick, (2014), internal control is the measures instituted by a firm so as to ensure the attainment of an organization's objectives. They are set of policies and procedures adopted by an entity in ensuring that firm's transactions are processed in an appropriate manner in order to avoid waste, theft and absolute misuse of resources.

Control in an organization entails the following:- performance reviews (comparing actual performance with budgets), information processing (necessary to check accuracy, completeness and authorization of transactions), physical controls (necessary to provide security over both records and other assets), segregation of duties (where no one person should handle all aspects of a transaction from the beginning to the end) (ndifon & patrick, 2014).

Harrison (2011) argues and shows his opinion on the definition of internal control which is "a system of procedures implemented by management of the company'. It is designed to follow company politics, promote operational efficiency for data reliable accounting and in accordance with legal requirements. The system of control must be involved in the business success parameters of business planning, financial management, marketing, customer service strategy, sales and continuous improvement. Companies with internal control system may be significantly larger more highly regulated, more competitive, more profitable, more liquid, more competent in their management and accounting and are subject to better management controls.

According to princeton (2008) internal control is a process effected by an organization's structure, work and authority flows, people and management information system, designed to help the organization accomplish specific goals or objectives. From the definition, the objective of any internal control should be directed towards the attainment of the organizational objectives.

According to okozie (1999); internal control is the whole system of controls, financial and otherwise, established by the management in other to carry on the business of the enterprise in an orderly and efficient manner, ensure strict adherence to management policies, safeguard the assets and secure as far as possible the completeness and accuracy of the records". A sound internal control system should provide the platform for recording and processing transactions in such a way that it forms adequate basis for the preparation of the financial statement. An efficient internal control system involves a clear definition and segregation of duties for various employees or groups within a company. The intent of separating the duties is to protect against fraud, waste, abuse and mismanagement of resources. Effective internal control helps to assure the accuracy of reports to management and the various supervising bodies.

According to asuquo (2005) "internal control is made up of internal checks, internal audit, accounting controls and other forms of control such as budgetary and physical control". Okozie (1999) posited that "the primary responsibility for the maintenance of the effective internal control rest with the management of any enterprise". Management responsibilities are normally discharged by:

- Installation of an effective accounting system;
- Ensuring that employees understand relevant codes of conduct.
- Monitoring relevant legal requirements and ensuring that operating procedures and conditions meet these requirements.

- ❖ The establishment of an independent internal audit function.
- ❖ The appointment of an audit committee where appropriate.

According to buckhoff (2002) controls can be categorized into three major classifications:

- **Preventive controls:** these are controls that predict potential problems before they occur and make adjustments. They also prevent an error, omission or malicious act from occurring. Examples of preventive controls includes: using well-designed documents to prevent errors. Establishing suitable procedures for authorization of transactions. Employing only qualified personnel. E.g segregates duties.
- **Detective controls:** these controls are designed to detect and report the occurrence of an omission, an error or a malicious act. Examples of detective controls include: duplicate checking of calculations, periodic performance reporting with variance error.
- **Corrective controls:** these controls help to minimize the impact of a threat, identify the cause of a problem, correct errors arising from the problem. They also correct problems discovered by detective controls and modify the processing system(s) to minimize future occurrence of the problem. Examples of corrective controls are: contingency planning back up procedures rerun procedures.

2.1.2 Internal control objectives

The basic objective of internal control is to ensure that internal control activities are designed to provide reasonable assurance that particular objectives are achieved, or related progress understood.

there are ‘seven detailed objective that an internal control system must meet to prevent errors in the journals and records.

according to poddar, poddar and koppar (2015) the firm system of internal control must be sufficient to provide reasonable assurance that:

(i) Recorded transactions are valid (validity):
The system cannot permit the inclusion of fictitious or nonexistent transactions in journals or other accounting records.

(ii) Transactions are properly authorized (authorization):
If a transaction that is not authorized takes place, it could result in a fraudulent transaction, and it could also have the effect of wasting or destroying company assets.

(iii) Existing transactions are recorded (completeness):
The client’s procedures must provide controls to prevent the omission of transactions from the records.

(iv) Transaction are properly valued (valuation):
An adequate system includes procedures to avoid errors in calculating and recording transactions at various stages in the recording process.

(v) Transactions are properly classified (classification):
The proper account classification according to the client’s chart of accounts must be made in the journals if the financial statements are to be properly stated. Classification also includes such categories as division and product.

(vi) Transactions are recorded at the proper time, (timing):
The recording of transactions either before or after the time they took place increases the likelihood of failing to record transactions or of recording them at the improper amount. If late recording occurs at the end of the period, the financial statements will be misstated.

(vii) Transactions are properly included in subsidiary records and correctly summarized (posting and summarization):
In many instances, individual transactions are summarized and totalled before they are recorded in the journals. The journals are then posted to the general ledger, and the general lodger is summarized and used to prepare the financial statements.

2.1.3 Elements of internal control systems

Internal control systems involve crucial decisions on control environment, risk assessment control activities, information and communication and monitoring (coso framework, 2013).

There is a general expectation that institution and enforcement of proper internal control systems will always lead to improved financial performance. For an organization to achieve its organizational objectives, then the five control components of internal control must be integrated into management processes over the entire organization (subsidiaries, divisions, units) (ayagre, appiah-gyamerah and nartey 2014). For this paper, the elements of internal control systems have been narrowed down to three, namely: control environment, control activities and monitoring.

Control environment

The purpose of control environment is to set the tone for the organization impact on the consciousness of the employees and it is the foundation for all the other components of internal control system (amudo and inanga, 2009). According to gamage et al., (2014); mary, albert, and byaruhanga, (2014) control environment includes the attitudes, awareness, integrity and ethical values of all the employees, and actions of management and directors, management and those charged with governance concerning the entity's internal control and their importance in the entity. According to hayali et al., (2013) control environment refers to all factors which are effective in determining, increasing or decreasing the effectiveness of policies, procedures, and methods specific to a process. Control environment stands out with the basic understanding adopted by the senior management of the corporation to control the organization, its attitude toward problems and approach to solving problems and their perspective of the importance of moral values. The element of control environment includes communication, enforcement of integrity, and ethical values.

gamage et al. (2014) and norton rose fulbright (2016) lists five factors that affect control environment; integrity and ethical values, human resource policies and practices, assignment of authority and responsibility, a commitment to the competence, organizational structure, and management's philosophy and operating style, and board of directors or audit committee. According to gamage et al. (2014) and norton rose fulbright (2016), the following are five control environment principles which organization should consider:

(1) The organization should demonstrate a commitment to ethnical values and integrity.
(2) The board of directors demonstrates independence of management and exercises oversight for the development and performance of internal control.
(3) Management establishes with board, an appropriate authorities and responsibilities in the pursuit of objectives, reporting lines, and oversight structures, through the following attributes: consider all structures of the organization (including out-sourced service providers), establish reporting lines; limit authorities, define, and assign responsibilities (janvrin et al., 2012; norton rose fulbright, 2016).
(4) The organization should demonstrate a commitment to retain, develop, and attract competent individuals in alignment with its objectives.
(5) The organization should also hold individuals accountable for their internal control responsibilities in the pursuit of objectives.

Control activities

Gamage et al., (2014); mary, albert, and byaruhanga, (2014) view control activities are the policies and procedures that help ensure management directives are carried out. They help ensure that necessary actions are taken to address risks to achievement of the entity's objectives. Control activities occur throughout the organization, at all levels, and in all functions. They include a range of activities as diverse as approvals, authorizations, verifications, reconciliations, reviews of operating performance, security of assets and segregation of duties. Control activities usually involve two elements: a policy establishing what should be done and procedures to effect the policy. All policies must be implemented thoughtfully, conscientiously and consistently.

Control activities in an organization basically comprise; performance reviews (comparing actual performance with budgets, forecasts and prior period performance), information processing (necessary to check accuracy, completeness and authorization of transactions), physical controls (necessary to provide security over both records and other assets), segregation of duties (where no one person should handle all aspects of a transaction from the beginning to the end) (ndifon & pactrick 2014). This shows that internal control system of an organization is broad and all-encompassing hence very important. It appears to cover all areas of the organization. The following are control activities attributes, organization should consider.

(i) The organization should develop and selects control activities that contribute in mitigating of risks to the achievement of objectives to acceptable levels.

(ii) The organization should select and develops general control activities over technology to support the achievement of objectives.

(iii) The organization deploys control activities as manifested in policies that establish what is expected and in relevant procedures to affect the policies. This can be achieved through the following attributes: the reassess policies and procedures, take corrective action; perform promptly; perform using competent personnel; establish accountability and responsibility for executing policies and procedures; and establish policies and procedures to support the deployment of management's directives (janvrin et al., 2012).

Monitoring activities

The purpose of monitoring is to determine whether internal control is effective, properly executed, and adequately designed. Internal control is adequately designed and properly executed if all five internal control components (control environment, risk assessment, control activities, informational and communication, and monitoring) are present and functioning as designed (ofori, 2011). The ability to identify risks that may occur due to some changes withn the organization and among employees and the ability to provide continuity of internal control need to be monitored in the course of time (hayali et al., 2013).

Management of an organization should emphasize monitoring efforts on internal control and accomplishes the organization objectives. Monitoring should be performed on a regular basis to assess the process of design and operational actions and controls to be taken covers the assessment of internal control quality. According to hayali dinc, sarili, dizman and glindogbu (2013) highlighted that continuous monitoring of the internal control system and discovery of deviations is required to achieve organizational objectives. Also, it is important to monitor internal control to determine whether any modifications are necessary or whether it is operating as intended. All employees need to understand the organization's objectives, mission, and responsibilities and risk tolerance levels for monitoring to be most effective.

Organizations should consider the following attributes under monitoring:

(i) The organization selects develops, and performs ongoing and separate evaluations to ascertain whether the components of internal control are present and functioning. This can also be achieved through the following attributes: adjust scope and frequency; evaluate objectively; integrate with business processes; use knowledgeable personnel; consider the rate of change; establish baseline understanding and consider a mix of ongoing and separate evaluations.

(ii) The organization evaluates and communicates internal control deficiencies promptly to those parties responsible for taking corrective action, including senior management and the board of directors, as appropriate. Attributes: assess results; communicate deficiencies to management; report deficiencies to senior management and the board of directors; monitor corrective actions.

2.1.4 Reason for internal control system in business organizations

the main reason behind implementing the internal control systems within an organization is the need for companies to achieve their objectives (socol, 2011). In research conducted to analyze the importance of internal control for the nigerian firms by hayali, dinc, sarih, dizman, and gundogdu (2013) found that internal controls help the manufacturing sector to present its strong and stable outlook in front of the international spectators. It also helps in keeping a strict eye on fraudulent activities, monitoring the assets and maintaining the reliability of the company's accounts. An effective internal control system is one capable of detecting any irregularities, fraudulent transactions as well as errors, and ultimately reduces the percentage of such occurrences. Agreeing with this view, gamage et al (2104) opined that weak internal controls often cause fraudulent activities to go unchecked and inevitably result in the downfall of the organization. It is certain that without appropriate practicing of internal control system, organizations will face numerous risks and problems. If the situation persists, it will lead to loss of investors fund, employees' welfare loss, customers' dissatisfaction and disputes for company's growth, image damage, and insolvency and finally, it leads the problems to the government (gamage et al., 2014). Also, adeyemi and adenugba (2011) observed that the role of internal controls is to ensure that aproprate financial, operational and compliance controls are in place. Muraleetharan (2011) in his study of internal control and its impact on financial performance of organization a case study of university of jaffna indicated that there was a relationship between internal control and financial performance.

a study by ayom (2013) on the internal controls and performance in non-governmental organizations in sudan showed that, although internal auditing has led to compliance with rules and regulations on operations, performance and procurement control, it did not lead to proper financial accountability, budgetary control on the expenditure and adequate utilization of donor funding. Also, ewa and udoayang (2012) argued that a strong internal control mechanism is a deterrence to staff fraud while a weak internal control mechanism exposes the system to fraud and creates an opportunity for staff to commit fraud. Also, bett and memba (2017) revealed that control environment has a significant influence on the financial performance of an organization and filter through the whole business to:

- Help align objectives of the business– to ensure thorough reporting procedures and that the activities carried out by the business are in line with the business's objectives.
- Safeguard assets – ensuring the business's physical and monetary assets are protected from fraud, theft and errors.
- Prevent and detect fraud and error – ensuring the systems quickly identify errors and fraud if and when they occur.
- Encourage good management – allowing the manager to receive timely and relevant information on performance against targets, as well as key figures that can indicate variances from target.
- Allow action to be taken against undesirable performance – authorizing a formal method of dealing with fraud, dishonesty or incompetence when detected.
- Reduce exposure to risks – minimizing the chance of unexpected events.
- Ensuring proper financial reporting – maintaining accurate and complete reports required by legislation and management, and minimizing time lost correcting errors and ensuring resources are correctly and efficiently allocated.

2.1.5 Measure of financial performance

performance is generally refers to the ability to operate efficiently, profitably, survive, grow and react to the environmental opportunities and threats and in most situations researchers used financial measures to explain firm's performance. For instance, measures such as return on equity, return on assets and net profit margin are used as parameters to measure financial performance (saeidi, sofian & siti zaleha, 2014). In line with the submission of mawanza (2014), performance means major indicators that explain the level firms achieve their specific organizational objectives. Firm performance is an indicator that helps to evaluate and as well measure how an organization succeeds in realizing business objectives to all its stake holders (antony & bhattacharyya, 2010). Agreeing with this view, asat, maruhun, haron and jaafar (2015), described firm performance as the ability to achieve its goals through the application of available resources efficiently and effectively.

Firm performance as stressed by gavrea, ilies and stegerean (2011), has been viewed as one of the most important variables that had attracted the attention of researchers in both finance and management literature. Profitability is universally used as a proxy for financial performance in generating income and improves shareholders value. Profit is the ultimate goal of firms and all policies are designed to realize this noble objective. The assessment of profitability is used to measure the efficiency of the corporate operations and to assist decision makers on how to use investors' money efficiently and effectively to produce the desired profits. To measure profitability of firms, there are so many accounting based ratios used which includes return on assets, return on equity and net profit margin (saeidi et al, 2014). Return on assets measures the return to all firm's assets and is often used as an overall index of profitability, and the higher the value, the more profitable the firm. It is a ratio of income to its total asset (khrawish, 2011). This study focused on those measures that are very important for the success of the firm. From the reviewed studies, many authors had utilized various measures to measure financial performance of firms such as; return on assets (roa), return on equity (roe), net profit margin (npm) return on sales (ros) (john, 2011; kinyua, gakure, gekara and orwa, 2016; eke, (2018); syou, hungehih, henghsiu and frederick, 2017). Therefore, the study measured the financial performance of the firms by looking at profitability (returna on assets, return on equity and net profit margin).

The return on equity measures the rate of return on the owners' equity employed in the firm (pandey, 2010). Roe reflects how effectively and efficiently firm management puts share holders' fund into use. Roe is the ratio of net income after taxes divided by total equity (pandey, 2010). Net profit margin is the ratio of net income after taxes divided by turnover net profit margin measures the proportion of the naira sales which remains after the deduction of all expenses (pandey, 2010).

Conceptual framework

independent variable dependent variable

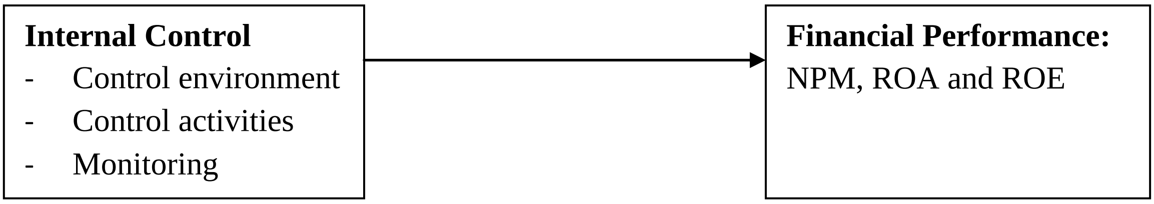

Figure 1: author's design

2.2 <u>Theoretical review</u>

2.2.1 Institutional theory

This theory originated from meyer and rowan (1977) and dimaggio and powell (1983). This theory stated that organizations develop and design structures, processes and systems not primarily on rational economic cost benefit analysis but because they are more or less required to incorporate new practices and procedures.

Organisations are driven to incorporate the practices and procedures defined by prevailing concepts of organizations that do increase their legitimacy and their survival prospects, independent of the immediate efficacy of the acquired practices and procedures.

Organizational structures such as internal controls are symbol of conformity and social accountability.

According to arwinge (2013), controls are adapted and designed in order to increase legitimacy and their survival prospects. This theory is in tandem with sox requirements. The sarbanes – oxley act 2002 requires companies to report on the effectiveness of their internal controls over financial reporting as part of an overall effort to reduce fraud and restore integrity in the financial reporting process.

Organization is a social structure with rules, regulation and legal requirement to comply with which include putting in place proper and adequate internal control systems that will enable business owners to develop accurate and timely financial reports that detail progress and prospects of their business. Organizations with weak internal controls are prone to inefficiency, which promotes an enabling environment for fraud and mismanagement to thrive leading to poor performance. One of the main objectives of internal controls is to assure efficient operations.

2.3 Empirical review

Several scholars have carried out researchers in order to establish the relationship between internal control and financial performance. Mwakimasinde, odhiambo and byaruhanga (2014) analyzed the effect of internal control systems on the financial performance of sugarcane outgrower companies in kenya. Using regression analysis techniques to estimate the data, results revealed that internal control system helps increase financial performance of sugarcane out grower companies. Based on the findings it was concluded that internal control systems have statistically positive effect on performance of sugarcane outgrower companies hence there is need for the companies to improve on their internal control system.

The present study is similar to the reviewed study since both focus on the impact of internal control on firms financial performance and both studies were investigated in developing countries. The current study differs since the current study carried out its investigation in brewery firms while the reviewed study carried out its study in sugarcane outgrower companies. In addition while the previous study used regression analysis technique the current study utilized analysis of variance to estimate the data.

Kinyua, gakure, gekara and orwa (2015) investigated the effect of internal control environment on financial performance of companies quoted in the nairobi security exchange. The study relied on both primary and secondary data. Primary data was collected using structured questionnaires while the secondary data was extracted from audited annual report using both descriptive and inferential statistics, the results and findings concluded that there was significant association between internal control environment and financial performance of firms quoted in nairobi securities exchange. The researchers concluded that internal control environment should be improved upon to further improve the financial performance of companies quoted in nairobi securities exchange. The main similarity of this study and the current study is that both studies are considering the impact of internal control on financial performance. On the other hand the study was different from the present study in terms of methodology. The present study used statistical analysis modeling in the form of analysis of various (anova) while the reviewed study was based on descriptive. Moreover, the above study was carried out in nairobi, but the current study carried out its investigation in nigeria precisely.

Hossaini and mohammed (2018) carried out an investigation on the effect of internal control on the performance of commercial banks in nigeria. Using literature review approach, results revealed that internal control has a relationship with bank performance. The main similarity of this study and the current study is that both studies investigated the impact of internal control on financial performance of firms in the context of nigeria factor. The two differ in terms of methodology and scope.

Hossaini & mohammed (2018) mostly focuses on literature review to conclude on the aims and objectives while the current study adopted a field study base approach using survey design. In addition the present study used analysis of variance to estimate data while the reviewed study was only based on descriptive. In addition the reviewed study restricted its study to the banking sector while the current study was limited to the brewery firms.

Eniola and akinselure (2016) examined the effect of internal control on financial performance of some selected firms. The data obtained from the questionnaire were analysed using multiple regression statistical tool in spss. The results revealed that internal control has significant relationship with fraud perpetrated in the organization and this was because the p-value obtained 0.002 was greater than the benchmark value of 5% specified in spss for the analysis. The study concluded that management should develop more effective strategies that will ensure that internal control is effective and efficient, so that fraud perpetration will be significantly reduced. The present study is related to that of eniola and akinselure (2016) because both focus on internal control and financial performance in nigerian firms. The present study is limited to the brewery firms while the previous study was only on selected firms listed on the nigeria stock exchange. In addition while the previous study used multiple regressions analysis technique the present study utilized the analysis of variance (anova) to estimate data.

Eke (2018) starched internal control and financial performance of hospitality organizations in rivers state. Using descriptive statistics, linear regression and correlation analysis to test the hypotheses postulated, results showed that internal controls to a significant extent influence financial performance of hospitality organizations in rivers state. The study concluded that the control environment affects total revenue as such influences the financial performance, its non existence may affect the organization greatly. This study just like the current study focus on the effect of internal control on the performance of firms, the study differ significantly because eke (2018) carried out the research only in hospitality organization in rivers state while the current study was conducted in the brewery firms in nigeria as a whole. Also, while the reviewed study used descriptive statistics, linear regression and correlation analysis to estimate data collected the current study employed analysis of variance (anova).

Njeri (2014) studied the effect of internal controls on the financial performance of manufacturing firms in kenya. The study adopted the multiple regression analysis to estimate data and the results revealed that most of the manufacturing firms surveyed had a strong control environment which impacted positively on the financial performance of the firms. The study concluded that manufacturing firms that had invested on effective internal control systems had improved financial performance as compared to those that had a weak internal control systems. Both studies are similar interns of objective and methodology but differs in term of scope. While the previous study is a study of all manufacturing firms in kenya, the present study is only limited to brewery firms in nigeria.

Adetula, balogun, uwajeh and owolabi (2016) studied the internal control system of nigerian tertiary restitutions using four tertiary institutions in southwest, nigeria. Data was collected through the use of questionnaire and analyzed using descriptive statistics. Results showed that many components of the internal control system are properly situated except that the internal audit units of those institutions are not independent. The study contrast significantly with the present study because of the concentration of the present study on the nigeria brewery firms while the previous study focused on tertiary institution in nigeria in which their perception different from those respondents in the brewery firms. Also, the study used a weak tool for the analysis of the data collected.

Akinleye and kolawole (2020) studied internal controls and performance of selected tertiary institutions in ekiti state. A committee of sponsoring organization (coso) framework approach. The study employed a survey research design. Using multiple regression analysis, results revealed that information and communication and monitoring activities had significant and positive influence on organizational performance of the selected tertiary institutions while control environment and risk assessment had positive in significant effect and was stationtically significant in explaining performance of selected tertiary institutions in ekiti state. The study concluded that those charged with governance in tertiary institutions should strengthen the stated components of internal controls. The two studies were conducted in nigeria. But akinleye and kolawole (2020) was a case study of selected tertiary institutions in ekiti state while the present study used descriptive survey to investigate the impact of internal control on financial performance of brewery firms in nigeria. Also the reviewed study used multiple regression analysis to analyze data white the current study utilized analysis of variance to estimate data.

In the light of the above literature, it is clear that empirical studies on the impact of internal control on financial performance of brewery firms in both developed and developing economy are relatively scanty. The emphasis of this study then is on internal control systems and finical performance of quoted brewery firms in nigeria.

This study is important since internal controls affect financial performance by reducing risk, minimizing fraud and errors that could result in material misstatement, promoting efficiency and effectiveness of activities performed giving reliable, complete and timely information for decision making and ensure absolute compliance to laws and regulations in the brewery sector. The study will be useful to shareholders by providing assurance that the objective of the business they invest shall be achieved and that their investment is safe from fraud.

3.1 Methodology

This study adopted a cross sectional descriptive survey design. The design was appropriate as it enabled the researcher to determine the effect of internal control on financial performance of selected quoted brewery companies. The target population for the study was all the employees in accounting/finance,administration and operations department in the two firms considered in this study which totaled 165. These firms are guinness nigerian plc and nigerian breweries plc selected from the four quote brewery firms. In order to arrive at the number of respondents to be sampled, the formulae.

$n = z^2 (pq/d^2)$ was applied. This is in line with mugenda and mugenda (2012) statistical technique for selecting a sample from a population of less than ten thousand. The model was derived as follow:

$n = z^2 (pq/d^2)$

Where:

N = the desired sample size when the target population is > 10,000

Z = standardized normal deviation in a confidence level of 95%
Which is 1.96

P = the proportion in the target population that assumes the
Characteristics being sought. In this study, a 50:50 basis is assumed which is a probability of 50% (0.5).

Q = balance from p to add up to 100%. That is 1-p, which in this
Case will be 1-50% (0.5).

D = the statistical significance level set is 0.05 using the above
Formulae, the desired sample size was as follows:

N = $1.96^2 (0.5) (0.5) / 0.05^2 = 384.16$

Actual sample size (n)

N^1 = n/(1 + (n/n)>

Where:

N1 = actual sample size

N = desired sample size

N = the estimated population size.

given that population of 165 employees, the actual sample size (ni) was

N = 384 / (1 + (384 / 165) > = 115

purposive random sampling was used to determine the sample size as the researcher aimed to use respondents in accounting/finance, administration and operations department in each company.

this study used a multiple regression model to measure relationship between firms financial performance and internal control system. The model for this study is as shown below:

$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + £$ ------ (1)

Where:

Y = financial performance (from npm, roa and roe see appendix 1>

$B_1 - \beta_3$ = measures of sensitivity of variable

X to variable y

X_1 = control environment

X_2 = control activities

X_3 = monitoring

£ = the random error term for the model representing factors other than those specified in the model.

Bo = constant intercept of the model.

the variables in the model above were operationalised as shown in table 1.

3.2 Model specification

To measure the relationship between firms financial performance and internal control system, a multiple regression model was used as shown below.

Npm = f (conev, conact, moni)
Roa = f (conev, conact, moni)
Roe = f (conev, conact, moni)

this model can be written in explicit form as:

$y = b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3 + e$

Where:

y = dependent variable which describes firms performance indicators such as:
Npm = net profit margin
Roa = return on assets
Roe = return on equity
X = independent variables which represents the components of internal control Systems such as:
x_1 = control environment
x_2 = control activities
x_2 = monitoring
E = the random error term representing factors other than those specified in the Model
bo = constant intercept of the model
bi and b3 = the coefficients of the model to be estimated.

the apriori expectations are that b_1 conev, b_2 conact and b_3 moni are all expected to have a direct positive effect on npm, roa and roe. Therefore, b_1 >o, b_2 >o, b_3 >o.

Table 1: **operationalization of variables**

Variables		**Measurement**
Dependent (financial performance)	Npm, Roa Roe	Net income after taxes divided by turnover Net income after taxes divided by total asset Net income after taxes divided by total equity capital
Independent (internal Control)	Control environment	Management philosophy and operational style, integrity and ethical values. A commitment to competence, participation of audit committee organizational structure assignment of authority and responsibilities human resource policies and practice.
	Control activities	Approvals, authorizations, verification, performance review, physical control, segregation of duties.
	Monitoring	Ongoing supervision and evaluation, internal audit, timely reviews, self assessment.

4.1 Results and discussion of findings

In this section, the researcher present and analyzed the data obtained for this study using means and standard deviation based on a five point likert scale of the form strongly agree (5), agree (4), undecided (3), disagree (2) and strongly disagree (1). The expected mean is 3 obtained by dividing the sum of the weights of the scale by the total number (i.e. 5 + 4 + 3 + 2 + 1 ÷ 5). The actual mean of each of the responses was compared with the expected mean and a decision made on that basis.

S/n	Control of environment facilitate financial performance of brewery firms	Strongly agree 5	Agree 4	Undecided 3	Disagree 2	Strongly disagree 1	$\sum f_1x_i$	$\frac{\sum f_1x_i}{\sum f_1}$
A.	In our company staff have good working relationships between themselves	60	43	6	4	2	500	4.35
B.	Staff of our company are committed to their jobs	66	40	5	2	2	511	4.44
C.	All employees have work schedules hence no job conflicts in our company	40	61	12	2	0	484	4.21
D.	There is a mechanism to monitor regular attendance of staff in our company.	21	77	10	6	1	456	3.97
E.	In our company all employees are treated equally	59	30	10	12	4	473	4.11
F.	In our company all jobs are given on competency basis	21	71	16	5	2	449	3.90
G.	In our company all jobs are standardized	12	14	18	57	14	298	2.59
H.	The hiring process for contract staff is transparent in our company	12	14	19	39	31	282	2.45
I.	The work structure is flexible that it allows staff to go on leave in the month of their choice without pressure.	3	3	05	92	12	238	2.07
J.	In our company all the duties are performed according to the approved standards	2	5	19	54	35	230	2.00

4.2 Results

Analysis of the control environment on the financial performance

Impact of control environment on the financial performance

The first objective of this study was to examine the impact of control environment on the financial performance. In order to achieve this objective, some aspects of control environment were provided on a five point likert scale and the respondents were asked to rate them. The findings are displayed on table two below.

From the findings in table 2, the study observed that staff have good working relationship among themselves (weight 4.35) and staff of the company are committed to their jobs (weight 4.44). It was also crystal clear from the findings that all employees have work schedules hence no job conflict whatsoever (weight 4.21) and there is a mechanism to monitor regular attendance of staff (weight 3.97). The respondents agreed that all employees are treated equally (weight 4.11) and that jobs are given on competency basis (weights 3.90). However, the respondents disagreed with the claims that all jobs are standardized (weight 2.59), hiring process for contract staff is transparent (weight 2.45) and the work structure is flexible that allows staff to go on leave in the month of their choice without any pressure (weight 2.07). Also, the respondents disagreed with the claims that all duties are performed according to the approved standard (weight 2.00). These findings are consistent with that of kinyua etal (2015). Bett & memba (2017) and eke (2018) who submitted that it is important for companies to put mechanisms in place to improve upon internal control environment as such influences financial performance and its non existence may affect the organization greatly.

Analysis of the control activities on the financial performance

S/n	**Control of activities facilitate financial performance**	**5**	**3**	**5**	**2**	**1**	$\sum f_1 x_i$	$\frac{\sum f_1 x_i}{\sum f_1}$
A	In our enterprise there is clear segregation of duties.	65	35	08	5	2	501	4.36
B	Every employee's work in our enterprise are checked on the other.	62	34	15	4	0	499	4.34
C	The personnel's in our enterprise are trained to implement the accounting and financial management systems.	50	60	3	1	1	502	4.37
D	There are proper verification process in our enterprise.	20	88	5	2	0	471	4.10
E	Reconciliation of records is done regularly in our enterprise.	46	54	8	7	0	484	4.21
F	There exist clear approval and authorization in our company.	37	54	20	3	1	467	4.06

Sources: field survey, 2019

Impact of internal control activities on financial performance:

The study sought to determine the impact of control activities on the financial performance. Some attributes were provided and respondents were asked to rate them accordingly on a five point likert scale. The results are presented on table 3 above. The study observed that internal control activities are evaluated in relation to clear segregation of duties, (weigh 4.36), every employees work in the company are checked on the other (weight 4.34) and personnel in the company are trained to implement the accounting and financial management systems (weight 4.37). Further analysis observed that there are proper verification process in the company (weight 4.10) and that reconciliation of records are done regularly in the company (weight 4.21). Also the respondents strongly agree that there is a timely review of audit process in the company the result is in consonance with gamage etal (2014), many, albert and byaruhanga (2014) who observed that control activities are policies and procedures that ensure management directives are carried out and help ensure that necessary actions are taken to address risks towards the achievement of the company's objectives. Ndifon and patric (2014) submitted that internal control activities of an organization is broad and all-encompassing hence very important and have great impact to support the achievement of objectives.

Analysis of monitoring on the financial performance

S/n	Monitoring of activities facilitate financial performance	5	4	3	2	1	$\sum f_1 x_i$	$\frac{\sum f_1 x_i}{\sum f_1}$
A	There are checks and evaluation process on an ongoing basis.	92	15	5	3	0	541	4.70
B	Monitoring has helped in evaluating the quality of performance of the enterprise.	59	48	5	2	1	508	4.42
C	There is periodic review and implementation of internal controls.	100	15	0	0	0	560	4.87
D	Management is closely monitoring the implementation of the internal control system in our business.	91	19	5	0	0	546	4.75
E	The management ensures that the audit reports and recommendations are implemented promptly.	69	31	7	5	3	508	4.37
F	There is timely review of audit process in our company.	79	21	11	3	1	519	4.51

Sources: field survey, 2019

Impact of monitoring activities on financial performance

The study sought to establish the impact of monitoring activities on financial performance. A list of aspect of monitoring of activities were provided and respondents were asked to rate them on a five point likert scale. The results were presented on table 4 below. The result revealed that there are checks and evaluation process on an ongoing basis (weight 4.70), monitoring has helped in evaluating the quality of performance in the company (weight 4.42) and there is periodic review and implementation of internal controls (weight 4.87). The respondents strongly agreed that management is closely monitoring the implementation of the internal control system in the company (weight 4.75), management ensures that the audit reports and recommendations are implemented promptly (weight 4.37) and there is timely review of audit process in the company (weight 4.51). This is consistent with hayali et al (2013) who stressed that monitoring of the internal control system and discovery of deviations is required to achieve organizational objectives.

Hypothesis I

There is no significant effect of internal control system on net profit margin of quoted firms.

Table 5**: Effect of internal control system on net profit margin of quoted firms**

Dependent variable: net profit margin.

Variable	Coefficient	Std error	T-statistics	Prob.
C	0.435	0.081	5.401	0.002
Coe	0.011	0.000	3.311	0.016
Coa	0.012	0.000	4.068	0.007
Mon	0.018	0.001	3.572	0.012

Source: author's computation. Where coe is control environment, coa is control activities, mon is monitoring and npm is net profit margin.

R-squared=0.788

Adjusted r-squared = 0.682

F-statistics=7.430; prob(f-statistics) = 0.019

Table reveals that the coefficient estimates of control environment, control activities and monitoring reported to be 0.011, 0.012 and 0.018 respectively alongside their respective probability values reported to be 0.016, 0.007 and 0.012 indicate all the predictor variables (control environment, control activities, and monitoring) exert a positive significant effect on net profit margin of quoted firms in nigeria. The results show that a unit increase in the control environment, control activities, and monitoring would breed about 11%, 12% and 18% increase in the performance of quoted firms in nigeria measured using net profit margin respectively. Also, the results reveals that adjusted r-square is 0.682 indicating that the predictor variables (control environment, control activities, and monitoring) considered in this study accounted for about 68.2% change in the outcome variable (net profit margin), while the remaining of the change covered by 31.8% is as a result of other variables not addressed by this study.

Hypothesis II

There is no significant effect of internal control system on return on assets of quoted firms.

Table 6**: Effect of internal control system on return on asset of quoted firms**

Dependent variable: return on assets

Variable	Coefficient	Std error	T-statistics	Prob.
C	0.410	0.058	7.069	0.000
Coe	0.021	0.000	4.264	0.005
Coa	0.022	0.000	5.402	0.002
Mon	0.022	0.000	5.018	0.002

Source: *author's computation. Where coe is control environment, coa is control activities, mon is monitoring and roa is return on assets*

R-squared=0.866
Adjusted r-squared = 0.799
F-statistics=12.918; prob(f-statistics) = 0.005

Table 2 shows that control environment, control activities and monitoring exert a positive effect on return on assets of quoted firms in nigeria to the turn of 0.021(p=0.005<0.05) for control environment, 0.022(p=0.002<0.05) for control activities and 0.022(p=0.002<0.05) for monitoring. This indicates that a unit increase in the control environment, control activities, and monitoring would engender 21%, 22% and 22% increase in return on assets respectively. Also, the results reveals that adjusted r-square is 0.799 indicating that the predictor variables (control environment, control activities, and monitoring) considered in this study accounted for about 80% change in the outcome variable (return on assets), while the remaining of the change covered by 20% is as a result of other variables not addressed by this study.

Hypothesis iii

There is no significant effect of internal control system on return on equityof quoted firms.

Table 7: **effect of internal control systemon return on equityof quoted firms**

Dependent variable: return on equity

Variable	Coefficient	Std error	T-statistics	Prob.
C	0.909	0.133	6.857	0.000
Coe	0.012	0.001	3.497	0.013
Coa	0.014	0.001	5.543	0.001
Mon	0.015	0.001	5.071	0.002

Source: *author's computation. Where coe is control environment, coa is control activities, mon is monitoring and roa is return on equity*

R-squared=0. 926

Adjusted r-squared = 0.858
F-statistics=12.072-; prob(f-statistics) = 0.006

Table reveals that the coefficient estimates of control environment, control activities and monitoring reported to be 0.01, 0.014 and 0.015 respectively alongside their respective probability values reported to be 0.013, 0.001 and 0.002 indicate all the predictor variables (control environment, control activities, and monitoring) exerts a positive significant on return on equity of quoted firms in nigeria. The results show that a unit increase in the control environment, control activities, and monitoring would breed about 12%, 14% and 15% increase in the performance of quoted firms in nigeria measured using return on equity respectively. Also, the results reveals that adjusted r-square is 0.858 indicating that the predictor variables (control environment, control activities, and monitoring) considered in this study accounted for about 85.8% change in the outcome variable (return on equity), while the remaining of the change covered by 14.2% is as a result of other variables not addressed by this study.

4.2 Discussion of findings

This study has attempted to reveal the impact of internal control system on the financial performance of selected quoted brewery firms in nigeria. Through the analysis carried out using multiple regression, it was discovered that control environment, control activities, and monitoring exert a positive significant effect on net profit margin of quoted firms in nigeria. This reflects that internal control systems are instrumental to the performance of quoted firms in nigeria. This might be because internal control system through control environment, control activities, and monitoring are indispensable for smooth operational activities of organizations and that absence of control mechanism is next to operational failure. This finding gives credence to the discovery of mawanda (2008) and kinyua (2015) that there is a positive significant relationship between internal control environment and financial performance.

The study equally discovers that there is a significant positive effect of internal control system (measured using control environment, control activities and monitoring) on return on assets of quoted firms in nigeria. This reflects that the performance of quoted firms in nigeria measured using return on assets grossly depends on the internal control mechanism. The positive and significant effect might be attributed to the fact that internal control system is the engine room through which all departments of an organization functions productively. They ensure that things are done according to the laid down rules and regulations.the corollary of this discovery is that internal control mechanism could stimulate an increase in the performance of quoted firms in nigeria. This discovery corroborates the findings of mwakimasinde, odhiambo and byaruhanga (2014) and magara (2013), that internal control system contributed positively to the financial performance of organizations.

The last discovery is that control environment, control activities, and monitoring exert a positive significant effect on net profit margin of quoted firms in nigeria.this implies that internal control system is vital to stimulate the performance of quoted firms in nigeria. This could be attributed to the fact that internal control is a process effected by an organization's structure, work and authority flows, people and management information system, designed to help the organization accomplish specific goals or objectives. This finding is in tandem with the findings of muraleetharan (2011), that internal controls promote efficiency, reduce risk of asset loss and help ensure the reliability of financial of statements, compliance with the laws and regulations and improve the overall performance of organizations.

5. Conclusion and recommendations

Based on the findings of the study, it was concluded that effective internal control will significantly improve the financial performance of quoted brewery firms in nigeria. The results and findings indicates that there was significant association between internal control environment, control activities, monitoring and financial performance. This was confirmed by the results of the statistical analysis which shows that the p-value obtained (0.019, 0.005 and 0.006) was lower than significance value of 5% specified in spss for this analysis. This implies that for any organization to improve financial performance, management of the organization must put in place strategies to strengthen the internal control system.

the study recommended that internal control environment; control activities and monitoring be sustained and enhanced to further improve the financial performance of quoted brewery firms in nigeria and management should develop strategies that will ensure that internal control is effective and efficient, so that fraudulent practices will be significantly reduced. Also, management of the organization should ensure strict compliance with their respective internal control systems.

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Appendix i

Model summary[b]

Model	R	R square	Adjusted r square	Std. Error of the estimate	Durbin-watson
1	.888[a]	.788	.682	.025682	2.018

A. Predictors: (constant), monitoring , control environment , control activities

B. Dependent variable: npm

Anova[b]

Model		Sum of squares	Df	Mean square	F	Sig.
1	Regression	.015	3	.005	7.430	.019[a]
	Residual	.004	6	.001		
	Total	.019	9			

A. Predictors: (constant), monitoring , control environment , control activities

B. Dependent variable: npm

Coefficients[a]

Model		Unstandardized coefficients		Standardized coefficients		
		B	Std. Error	Beta	T	Sig.
1	(constant)	.435	.081		5.401	.002
	Control environment	.011	.000	.680	3.311	.016
	Control activities	.012	.000	1.138	4.068	.007
	Monitoring	.016	.001	1.056	3.572	.012

A. Dependent variable: npm

Residuals statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted value	.00700	.12213	.07690	.040417	10
Residual	.031628	.037456	.000000	.020969	10
Std. Predicted value	1.730	1.119	.000	1.000	10
Std. Residual	1.232	1.458	.000	.816	10

A. Dependent variable: npm

Model summary[b]

Model	R	R square	Adjusted r square	Std. Error of the estimate	Durbin-watson
1	.931[a]	.866	.799	.018507	1.979

A. Predictors: (constant), monitoring , control environment , control activities

B. Dependent variable: roa

Anova[b]

Model		Sum of squares	Df	Mean square	F	Sig.
1	Regression	.013	3	.004	12.918	.005[a]
	Residual	.002	6	.000		
	Total	.015	9			

A. Predictors: (constant), monitoring , control environment , control activities

B. Dependent variable: roa

Coefficients[a]

Model		Unstandardized coefficients		Standardized coefficients		
		B	Std. Error	Beta	T	Sig.
1	(constant)	.410	.058		7.069	.000
	Control environment	.021	.000	.696	4.264	.005
	Control activities	.022	.000	1.202	5.402	.002
	Monitoring	.022	.000	1.179	5.018	.002

A. Dependent variable: roa

Residuals statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted value	-.00502	.10618	.06200	.038403	10
Residual	.020183	.022672	.000000	.015111	10
Std. Predicted value	1.745	1.151	.000	1.000	10
Std. Residual	1.091	1.225	.000	.816	10

A. Dependent variable: roa

Model summary[b]

Model	R	R square	Adjusted r square	Std. Error of the estimate	Durbin-watson
1	.926[a]	.858	.787	.042282	1.875

A. Predictors: (constant), monitoring , control environment , control activities

B. Dependent variable: roe

Anova[b]

Model		Sum of squares	Df	Mean square	F	Sig.
1	Regression	.065	3	.022	12.072	.006[a]
	Residual	.011	6	.002		
	Total	.075	9			

A. Predictors: (constant), monitoring , control environment , control activities

B. Dependent variable: roe

Coefficients[a]

Model		Unstandardized coefficients		Standardized coefficients		
		B	Std. Error	Beta	T	Sig.
1	(constant)	.909	.133		6.857	.000
	Control environment	.012	.001	.588	3.497	.013
	Control activities	.014	.001	1.270	5.543	.001
	Monitoring	.015	.001	1.227	5.071	.002

A. Dependent variable: roe

Residuals statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted value	.01301	.24184	.13880	.084818	10
Residual	.034993	.065942	.000000	.034523	10
Std. Predicted value	1.790	1.215	.000	1.000	10
Std. Residual	.828	1.560	.000	.816	10

A. Dependent variable: roe

Appendix ii

a

X	f	fx	fx
5	60	300	f
4	43	172 = 4.35	
3	6	18	
2	4	8	
1	2	2	
	115	500	

b

x	f	fx	fx
5	66	330	f
4	40	160	
3	5	15 = 4.44	
2	2	4	
1	2	2	
	115	511	

c

x	f	fx	fx
5	40	200	f
4	61	244	
3	12	36 = 4.21	
2	2	4	
1	0	0	
	115	484	

d

E

X	f	fx	fx
5	21	105	f
4	77	308	
3	10	30 = 3.97	
2	6	12	
1	1	1	
	115	456	

f

x	f	fx	fx
5	59	295	f
4	30	120	
3	10	30 = 4.11	
2	12	24	
1	4	4	
	115	473	

x	f	fx	fx
5	21	105	f
4	71	284	
3	16	48 = 3.90	
2	5	10	
1	2	2	
	115	449	

g

X	f	fx	fx
5	12	60	f
4	14	56	
3	18	54 = 2.59	
2	57	114	
1	14	14	
	115	298	

h

x	f	fx	fx
5	12	60	f
4	14	56	
3	19	57 = 2.45	
2	39	78	
1	31	31	
	115	282	

i

x	f	fx	fx
5	3	15	f
4	3	12	
3	5	15 = 2.07	
2	92	184	
1	12	12	
	115	238	

j

X	f	fx	fx
5	2	10	f
4	5	20	
3	19	57 = 2.00	
2	54	108	
1	35	35	
	115	230	

$\sum fixi$ $\frac{\sum fixi}{\sum fi}$

control environment

A

X	f	fx	fx
5	65	325	f
4	35	140	

b

x	f	fx	fx
5	62	310	f
4	34	136	

c

x	f	fx	fx
5	50	250	f
4	60	240	

3	8	24 == 4.36
2	5	10
1	2	2
	115	501

3	15	45 = 4.34
2	4	8
1	0	0
	115	499

3	3	9 = 4.37
2	1	2
1	1	1
	115	502

d

X	f	fx	fx/f
5	20	100	
4	88	352	
3	5	15 = 4.10	
2	2	4	
1	0	0	
	115	471	

e

x	f	fx	fx/f
5	46	230	
4	54	216	
3	8	24 = 4.21	
2	7	14	
1	0	0	
	115	484	

f

x	f	fx	fx/f
5	37	185	
4	54	216	
3	20	60 = 4.06	
2	3	6	
1	1	1	
	115	467	

control activities

a

X	f	fx	fx/f
5	92	460	
4	15	60	
3	5	15 = 4.70	
2	3	6	
1	0	0	
	115	541	

b

x	f	fx	fx/f
5	59	295	
4	48	192	
3	5	15 = 4.42	
2	2	4	
1	1	2	
	115	508	

c

x	f	fx	fx/f
5	100	500	
4	15	60	
3	0	0 = 4.87	
2	0	0	
1	0	0	
	115	560	

d

X	f	fx	fx/f
5	91	455	
4	19	76	
3	5	15 = 4.75	
2	0	0	
1	0	0	
	115	546	

e

x	f	fx	fx/f
5	69	345	
4	31	124	
3	7	21 = 4.21	
2	5	10	
1	3	3	
	115	503	

f

x	f	fx	fx/f
5	79	395	
4	21	84	
3	11	33 = 4.51	
2	3	6	
1	1	1	
	115	519	

monitoring

Appendix iii

S/n	Firm	Year	Pat	Total asset	Total equity	Turnover	Npm	Roa	Roe
1.	Guinnessnig plc	2014	9573480	132328273	45061717	109,202,120	0.088	0.072	0.212
	Guinnessnig plc	2015	7794899	122246632	48341376	118,495,882	0.066	0.064	0.161
	Guinnessnig plc	2016	(2015886)	136992444	41660605	101,973,030	0.019	-0.015	-0.048
	Guinnessnig plc	2017	1923720	14603821	42943015	125,919,817	0.015	0.013	0.04

				6					5
	Guinnessnig plc	2018	6717605	15325496 8	87,588174	142,975,792	0.047	0.044	0.07 7
2.	Nigerian breweries plc	2014	4252025 3	34922916 3	171964263	266,372,475	0.159	0.122	0.24 7
	Nigerian breweries plc	2015	3805612 3	35621867 6	172321503	293,905,792	0.129	0.107	0.22 1
	Nigerian breweries plc	2016	2841696 5	36714646 8	165913768	313,743,147	0.091	0.077	0.17 1
	Nigerian breweries plc	2017	3304855 9	38222809 3	178298427	344,562,517	0.096	0.086	0.18 5
	Nigerian breweries plc	2018	1943794 4	38826286 9	166828452	524,388,500	0.059	0.050	0.11 7