





# Assessment of the internal control system mechanisms among selected state governments in Nigeria

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## ABSTRACT

**Purpose:** The study assessed the existence and implementation of the internal control system mechanisms of three purposively selected state governments in southwestern Nigeria.

**Design/Methodology/Approach:** The study adopted a descriptive survey research design. Primary data were obtained through a structured questionnaire administered to 450 staff members of both the Accountant General and Auditor General of the three southwestern states which include Lagos, Oyo and Ondo states. The Committee of Sponsoring Organizations Treadway Commission (COSO) framework is used to assess the existence and extent of implementation of internal control system mechanisms in the states. Descriptive statistics were used to analyze the data obtained.

**Findings:** The results showed that control environment (36.6%), risk assessment (42.7%), control activities (37.9%) and information and communication (39%) were moderately in existence but not fully implemented because the percentage fell below average while monitoring (38.7%) was highly implemented among the selected state governments in southwestern Nigeria.

**Conclusion:** The study found that state governments have internal control systems in place but they are not completely operational. Hence, mitigants against financial fraud, errors and misapplication of public funds are weak.

**Research Limitations and Implementation:** The sample of the study could be expanded to include more states in other geopolitical zones of the country.

**Practical Implications:** The study proposed strict adherence to all the elements and contents of the COSO framework in the design, set up and implementation of internal control mechanisms in public sector entities.

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**Keywords:** COSO, Fraud risk, Internal control, State government operations, Financial errors, Southwestern states.

## 1. INTRODUCTION

Internal control is an array of procedures that aim to discover irregularities, errors and frauds. It contributes to the safety of all assets and ensures that authorized people perform transactions accurately (Adetiloye, Olokoyo, & Taiwo, 2016). According to Lyinomen and Nkechi (2016) internal control is an essential requirement in the public sector because of the significant role that the sector plays in fostering economic development and growth. Internal Control Systems (ICS) act as a "watchdog" established by policymakers and regulators to encourage public accountability, objectivity and due process (D'Aquila, 2013). Therefore, developing control systems to prevent financial and other forms of fraud has become necessary to ensure that government operations are efficient and effective. When effective and strong internal control is in place, it leads to accuracy in accounting records, protection against misappropriation of assets and a proper accountability process (Ademola, Adedoyin, & Alade, 2015).

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*Nurture*: Volume 18, Issue 2, 472-488, 2024

Online ISSN: 1994-1633/Print ISSN: 1994-1625

DOI: 10.55951/nurture.v18i2.650 | URL: [www.nurture.org.pk](http://www.nurture.org.pk)

Publisher: Nurture Publishing Group

According to the [Association of Certified Fraud Examiners \(2021\)](#) one-third of frauds committed in both private and public organizations occurred because of the absence of internal control systems and in organizations where there are controls, the controls are considered weak. They considered a robust set of controls to be the most valuable financial planning device. The establishment of this effective system can prevent fraud and ensure financial transactions are carried out in compliance with all processes and procedures established in the public sector.

The previous literature on the assessment of internal control in the public sector is limited to two components out of the five components of internal control systems of the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Hence, the focus has been on control environment and control activities with little consideration given to the other three components that are equally important particularly for the financial operations of public sector institutions ([Adebayo & Ilesanmi, 2020](#); [Ademola et al., 2015](#); [Akinkoye & Adewumi, 2019](#); [Asaolu, Adedokun, & Monday, 2016](#); [Aziz, Rahman, Alam, & Said, 2015](#); [Izedonmi & Olateru-Olagbegi, 2018](#); [Malowa, 2021](#); [Muhunyo & Jagongo, 2018](#); [Oladejo & Nwachukwu, 2021](#); [Sharma & Senan, 2019](#); [Udeh & Nwadiolor, 2016](#); [Yao, Yusheng, & Bah, 2017](#)). The study fills this gap by taking into consideration the five components of internal control system mechanisms in the COSO framework in the assessment of the existence and implementation of internal control systems in the public sector contributing to the empirical literature.

## 2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### 2.1. Internal Control System

Internal control systems are mechanisms, processes, rules and regulations which could be financial or otherwise that are put in place by management to protect the assets of the organization ensure the financial integrity of accounting information, promote accountability and prevent financial errors and fraud. It further explained that it is management that plans, organizes and directs the performance of sufficient actions to provide reasonable assurance that objectives and goals will be achieved. It is the responsibility of the board of directors to ensure that adequate internal control systems are put in place and implemented. [Sharma and Senan \(2019\)](#) established that the ICS has the capability of safeguarding the assets of the organization and establishing adherence to policies set out by the management. The management of an organisation implements financial controls as part of the control system to ensure that business operations are conducted effectively and efficiently. Every organization must have an effective internal control process to attain good governance which provides management with strategies to realize the organization's objectives with a view to enhancing the maximization of stakeholders' interests.

### 2.2. Components of the Internal Control System

The Statement of Auditing Standards (SAS) No. 55 divides internal control into three main categories: control environment, accounting system and control procedures. [D'Aquila's \(2013\)](#) summary of the COSO framework gave six components which are control environment, risk assessment, information and communication, control activities, monitoring and internal audit. The updated 2013 COSO framework reviewed five components which are control activities, control environment, risk assessment, information and communication and monitoring. It is the recommendation of the framework that internal control systems will work optimally to prevent errors, frauds, misapplications of funds and other financial irregularities when all five elements of COSO are present and functioning well.

#### 2.2.1. Control Environment

Control environments are sets of standards, structures and processes that present the basis for executing internal control across organisations ([Ajala, Ololade, Olaleye, & Abass, 2023](#)). They are daily routines, checks and balances that make the organization function. It explains the overall awareness, actions and attitude of management and the board of directors in the ICS and its importance to the entity. Management compliance with the control processes set up by them often provides guidance to all other people working in the organization Management compliance with the control processes set up by them often provides guidance to all other people working in the organization ([Saleh, 2016](#)). Establishing corporate culture and values, style and management attitude are also posited as being fundamental to effective control. Management must believe that control is essential before other members of the organization will observe the laid down policies.

According to [Abiola and Oyewole \(2013\)](#) the environment is controlled by a number of elements. These factors include the ethical values, competence and integrity of management and employees which provide structure and discipline for the whole organizational system ([Saleh, 2016](#)). Other important factors explained to be of significant influence in the control environment are personnel management policy which includes adequate training, proper assigning of responsibility and authority, compensation guidelines, promotion and management's operating styles and philosophy. [Nyakarimi, Kariuki, and Kariuki \(2020\)](#) elucidated that the parameters of the control environment help top management and the board of directors in executing their governance oversight responsibilities, aid them in developing and retaining competent individuals and drive the accuracy of incentives, performance measures and rewards for accountability. According to [Babalola \(2020\)](#) it serves as the cornerstone for all other internal control components. They supported environmental control for a number of reasons, including honesty, openness, management and staff transparency as well as ethical principles and integrity.

### 2.2.2. Risk Assessment

Risk assessment is the process of identifying and assessing risk in achieving an organization's objectives. It deals with the identification and analysis of uncertainties confronting an organization both from internal and external sources ([Abiola & Oyewole, 2013](#)). Risks are an unavoidable part of doing business for any organization. Risks are occurrences faced by an organization that have an impact but are not necessarily negative on the attainment of its aims and objectives. When evaluating risk, one must take into account the possibility that shifts in the company's external environment and business model might make internal control ineffective. According to [Yao et al. \(2017\)](#) financial errors and omissions have the potential to lead to fraud since they can occasionally affect the reporting and updating of correct financial information. It provides the framework for deciding on risk management and this procedure appears to be essential to a successful ICS ([Saleh, 2016](#)).

According to the accounting principle, all internal control elements should be assessed from a risk viewpoint in order to reduce errors and irregularities within the organization. Risk is a problem for all companies both internally and externally. This risk includes shifting customer demands and procurement patterns, new laws and regulations that may require modifying operating strategies and policies and technological advancements that affect the timing and form of research and development. Changes in management and their responsibilities, the calibre of the workforce and their training, economic changes and disruptions in information system processing can all influence an organization's risk level.

### 2.2.3. Control Activities

According to the Association of Certified Chartered Accountants (ACCA), control activities are procedures and policies formulated by management to ensure activities in the organization are executed efficiently and effectively with the purpose of achieving their goals. These policies and procedures when maintained by organizations ensure management regulations are followed. These organizational activities include authorization and approval, verification, reconciliation, security of assets, segregation of duties and reviews of operating performance. According to the study by [Abiola and Oyewole \(2013\)](#) control activities are the most obvious aspect of internal control and are likely the most crucial in preventing incorrect acts, mistakes and fraud.

However, the COSO recommended a more analytical control environment since it affects the motivation for traditional behaviour ([Ademola et al., 2015](#)). It ensures the requisite actions are taken to address the risk to the attainment of the business' goals. It is the technique organizations use to distinguish and analyse the pertinent risks that may exert an influence on the organization's capacity to accomplish its significant aim. [Yao et al. \(2017\)](#) posited that the aim of control activities in recent time has been the creation of robust measures directed towards detection of errors and fraud, achieving safety and security and deliberate sanctions against persons who are alleged to be planning to outmaneuver the financial system and alter essential information.

### 2.2.4. Information and Communication

Every level of the organization needs to have access to the correct information in order to meet internal control requirements that help it achieve its goals. [Nyakarimi et al. \(2020\)](#) revealed communication as an aid to the reduction of the risk of fraud and information sharing serves as a tool that is used to alert parties who are concerned about suspicious behaviour and help prevent fraud. They explained that they were concerned with

identifying, capturing and exchanging compliance, operational and financial-related information on a timely basis. According to Babalola (2020) prompt information can help managers identify irregularities in their processes. Abiola and Oyewole (2013) disclosed that timely, reliable, accurate, relevant, appropriate, accessible, and understandable information will help personnel in the organization control and manage operations. The company's information and communication system quality has an effect on management's ability to make appropriate decisions in controlling its activities and preparing reliable financial reports.

#### 2.2.5. Monitoring

Monitoring is an operation that is carried out every day. It involves regular supervision and management of activities and actions taken by members of the organization in performing their duties and obligations. Monitoring involves assessing the quality of internal control through self-assessments, direct testing of control and an external independent audit.

Babalola (2020) explained monitoring as the key element in internal control which is performed by the internal audit department. He suggested that management should strive for integrity and transparency, set clear expectations and build relationships for the organization.

#### 2.3. Internal Control System in the Public Sector

The creation of an ICS for every activity performed in organizations is considered the focal point of financial reporting. There should be implementation of this control system and reliability in the control structure design and practices to achieve effective financial reporting.

Al-Mashhadi (2021) reported how imperative it is for ICS to discover errors and manipulations due to the expansion of activities in institutions and departments.

Public sector employees are supposed to act in the best interests of the public in carrying out an orderly, economical, ethical, efficient and effective operation by ensuring public accountability and making the best use of the resources at their disposal. Treaties that are formed with fairness and equity must be given to the citizens without any bias. Public sector organizations are held responsible for all decisions and actions they take including the management of public funds, equity in all productivity-related areas and the availability of pertinent and trustworthy financial and non-financial information through the timely preparation and presentation of reports to all stakeholders. Establishing, maintaining and enforcing internal controls to ensure timely and accurate reporting and asset preservation against deterioration is necessary in order to fulfil the accountability obligation. Laws and rules that have been implemented for the appropriate use and gathering of public funds must also be followed.

ICS is provided in the public sector to also safeguard resources against loss, destruction and misuse caused by fraud, waste, abuse, poor management and other irregularities because public resources typically represent public funds and must be used for the public good, caution must be exercised to protect them. The use of a cash basis and the recent adoption of an accrual basis of accounting still do not offer enough assurance in the procurement, use and disposal of resources, causing public sector organizations to occasionally not have an accurate record of their assets. Therefore, proper controls should be an integral part of the activities included in the management of the entity's resources from procurement through disposal. In addition, it is important to maintain resources like accounting records and information source papers that aid in attaining accountability and openness in government operations. The adoption of International Public Sector Accounting Standards (IPSAS) makes changes to the internal control mechanisms to be used in the government sector to strengthen financial reporting.

Ademola et al. (2015) opined that internal control in business is identical to checks and balances in government agencies. He explained internal control as processes to ensure that things stay in the right order. He further explained that controls are useful in every business and critical in organisations with employees who handle valuable assets to protect the assets against misuse and provide accuracy of the accounting records for proper accountability. This seems to be the case in Nigerian public service where substantial amount of public resources meant for economic development are at the disposal of public officials. However, there have been instances of public officials engaging in corrupt practices and embezzling public funds which violates the social compact and the public trust (Abdul-Baki, Diab, & Kadir, 2023; Roy, Watkins, Iwuamadi, & Ibrahim, 2023). Therefore, this intensified the need for an effective and sound ICS that would prevent such fraudulent practices financially or otherwise.

Public sector organizations must constantly assess and update the controls that will be expressed to employees and followed within the organisation. [Antón \(2020\)](#) discovered shortcomings in the internal control systems' ability to identify fraud and came to the conclusion that an integrated framework, like the one supported by COSO was necessary. This framework should place a greater emphasis on accountability, efficiency and effectiveness all of which are crucial components in the fight against fraud and corruption. Previous empirical studies carried out in Nigeria revealed ICSs to be inadequate, weak and not complied with but they failed to investigate the existence of the five elements of the COSO framework as mitigants against mitigating fraud and corrupt practices and the extent of their implementation.

#### 2.4. Empirical Review

Internal control systems are most important for effective management of public organizations because they strengthen the societal trust and psychological contract upon which efficient public institutions are built. According to [Aziz et al. \(2015\)](#) the public sector worldwide has recently been under intense pressure to improve the quality of public goods and services provided for citizens in line with the enormous public resources at their disposal. Therefore, numerous empirical studies have been conducted to highlight the critical role that internal control systems play in reducing corruption, non-compliance with regulations, human rights violations, environmental disasters and enhancing the intensity of innovation towards improved public services. These studies aim to improve public sector transparency, accountability and quality of public service delivery ([Bhuiyan & Amagoh, 2011](#); [Bianchi, 2010](#); [Hoai, Hung, & Nguyen, 2022](#); [Jeppesen, 2019](#); [Ujkani & Vokshi, 2019](#); [Wardiwiyono, 2012](#)).

A vast body of empirical literature has concentrated on the appraisal of internal control systems and their benefits in private organizations. However, empirical studies on internal control mechanisms are few in the public sector, most especially in Nigeria, one of the leading emerging economies. Internal control systems have been found in private organizations to enhance organizational financial performance and sustainability ([Hamed, 2023](#); [Vu & Nga, 2022](#)), prevent financial statement fraud, employees' fraud and asset misappropriation, theft and financial crimes ([Andoh, Quaye, & Akomea-Frimpong, 2018](#); [Gunasegaran, Basiruddin, Abdul Rasid, & Mohd Rizal, 2018](#); [Ullah, 2020](#)) and promote productivity and the long-term survival of business organizations ([Phornlaphatrachakorn & Na Kalasindhu, 2020](#)).

Consequently, empirical studies in the developed economies that examined the effect of internal control mechanisms in the public sector entities have found that internal control mechanisms contribute significantly to the quality of services provided by the public institutions within those countries. For instance, [Hoai et al. \(2022\)](#) examined the impact of internal control mechanisms on the performance and intensity of innovation of public sector entities in Vietnam using transformational leadership as a moderating variable. They found that internal control mechanisms assist public sector entities to set organizational goals, motivate employees and participate in the innovation process of enhancing service delivery. These allow the public sector entities to focus their resources on innovation, thereby increasing the intensity of innovation and subsequently performance.

[Yuniarti \(2017\)](#) examined the effect of internal control and anti-fraud awareness on fraud prevention among intergovernmental organizations using a survey questionnaire in Indonesia. The study found that internal control systems and anti-fraud awareness in inter-governmental organizations have a significant effect on fraud prevention. Furthermore, [Malowa \(2021\)](#) in Uganda, [Muhunyo and Jagongo \(2018\)](#) in Kenya, [Oduro \(2018\)](#) in Ghana and [Ujkani and Vokshi \(2019\)](#) in Kosovo investigated the effect of internal control mechanisms on fraud prevention and implementation of public sector budgetary provisions and found significant effects of control mechanisms in the prevention of misuse of public funds and optimal implementation of public entities' budgetary provisions. However, all these studies are limited in scope because they failed to explore in detail all five components of internal control mechanisms as laid down in the COSO framework.

Similarly, in Nigeria, [Ademola et al. \(2015\)](#) examined the effect of internal control mechanisms in public sector entities using the Nigerian National Petroleum Corporation (NNPC) as a case study. They found that internal control mechanisms are significant in the enforcement of due processes and optimal operational efficiencies of the corporation. However, the study only focused on one element of the five components of the COSO framework on internal control mechanisms. Besides, [Dba and Egbe \(2016\)](#) and [Fasua and Osagie \(2016\)](#) found positive effects of internal control mechanisms on fraud prevention in public sector entities in Nigeria. However, these results contradict the results of [Adelana and Toba \(2018\)](#) who found that ICS is negatively related to fraud prevention and

separation of duty has no effect on fraud prevention and detection. The result is connected to the fact that only control environments and activities of the COSO framework were used in the study. The current study takes all five elements of the COSO framework in detail, examines their existence in the ministries, departments and agencies of government in the three selected states rather than using one or more of the statutory corporations and examines the extent of their implementation to curb error, fraud and misappropriation of public funds.

### *2.5. Theoretical Framework*

The study is anchored on agency theory. According to the theory, conflicts of interest develop between principals and agents because of different objectives, risk tolerances and informational holdings. Internal, external and audit committees are required to enhance the performance of the organization (Adams, 1994). They also guarantee that management follows processes when implementing its goals. Internal control systems can experience these conflicts when agents are influenced to make decisions that serve their personal interests at the expense of the company's goals and stakeholders. Effective internal control systems help connect agents' interests with their principals by ensuring that agent behaviour is in accordance with the organization's goals. For instance, segmentation of responsibilities and performance evaluation tools can deter agents from acting opportunistically (Jensen & Meckling, 1976). Elected or appointed citizens' representatives are responsible for managing public sector organizations. These public officials have more access to information than the citizens and they could act in their own interests rather than those of the members of the public. Financial reporting of government operations could be the method used to handle it. Good internal control procedures are frequently used to improve the accuracy and integrity of information made available to the public. Therefore, we hypothesize that:

*Ho: Internal control systems in public sector entities are highly implemented to enhance the quality of financial information and prevent fraud.*

## **3. RESEARCH METHOD**

The geographical study area of this study is Southwestern Nigeria, one of Nigeria's six geopolitical zones and it covers Lagos, Ogun, Oyo, Ondo, Osun and Ekiti states.

### *3.1. Research Design*

The study employed a descriptive survey research design. The study was carried out in three states: Lagos, Oyo, and Ondo, out of the six states in the southwestern geopolitical zone. The three states are the foremost in southwestern Nigeria and they have established ministries, departments and agencies of government that have been in existence for many years.

### *3.2. Population and Sample Size*

The population of the study consists of employees from the offices of the Accountant General of the Federation (AGF) and Auditor General of the Federation (AuGF) which are located in 569 (Lagos), 390 (Oyo), and 345 (Ondo). A sample of 450 respondents was purposefully selected from the population, i.e., 150 respondents from each state. Those selected are top public officials with the requisite knowledge of internal control systems and their implementation. They are from the account and finance, administration and internal audit departments.

### *3.3. Research Instrument*

The research instrument is a structured questionnaire that was designed on a 5-point Likert scale. The reliability and validity tests of the research instruments were carried out after a pilot test on respondents in local governments in Osun State. The Cronbach alpha of each of the items in the questionnaire is 0.78. This shows that the research instrument is reliable and valid for the purpose of the study.

### *3.4. Data Collection Techniques*

The study relied on primary sources of data. The data was collected by distributing structured questionnaires to the 450 respondents. The consent of the respondents was sought before the questionnaire was distributed. A total of 414 copies of the questionnaire were returned representing a 92% response rate. The data were analysed using descriptive statistics.

## 4. DATA PRESENTATION, ANALYSIS AND RESULTS

### 4.1. Socio-Demographic Characteristics of the Respondents

Table 1 showed that 51.2% of the respondents were male while the females were 48.8%. Both male and female respondents participated in the study with a large number of male respondents.

The age distribution showed that 2.2% of respondents were below 20 years, 18.1% were between the ages of 20 and 29, participants within 30 to 39 years were 35.3%, 30.2% of the participants were 40 to 49 years and 14.3% of the respondents were above 50 years. The educational qualification showed that 7.0% of the participants were school certificate holders, national diploma holders, Nigerian certificate holders in Education which were revealed to be 15.2% of the respondents, 68.1% were first Higher National Diploma degree holders and master's or PhD holders were 9.7% of the participants.

About 11.4% of them were from the administration department, the majority of the respondents were from Accounts and Finance (53.1%), 15.5% participated from internal audits and 20.0% were from other departments within the respondent department. Concerning the years spent by the respondents in the department, 29.0% of them had spent 1 to 5 years in the department, 25.6% had been in the department between 6 and 10 years, 20.5% were between 11 and 15 years, 12.8% were between 16 and 20 years and 12.1% had spent over 20 years in the department.

The respondents' management level revealed that 22.7% of them were top level managers, 57.5% were middle-level managers and 19.8% were lower-level managers. When taking into account the respondents' years of experience, 34.5% had experience for about 1 to 10 years in the office, 30.0% between 11 and 20 years, respondents with 21 to 30 years of experience were 27.3%, 7.7% were between 31 and 40 years and 0.5% had experience for over 40 years.

**Table 1.** Socio-demographic characteristics of respondents.

Variables	Frequency	Percentage (%)
Gender		
Male	212	51.2
Female	202	48.8
Age		
Less than 20 years	9	2.2
20 - 29 years	75	18.1
30 - 39 years	146	35.3
40 - 49 years	125	30.2
50 years and more	59	14.3
Educational qualification		
School certificate	29	7.0
ND/NCE	63	15.2
First degree/HND	282	68.1
Master/PhD	40	9.7
Department		
Administration	47	11.4
Accounts and finance	220	53.1
Internal audit	64	15.5
Others	83	20.0
Number of years in the department		
1 - 5 years	120	29.0
6 - 10 years	106	25.6
11 - 15 years	85	20.5
16 - 20 years	53	12.8
Over 20 years	50	12.1
Level of management		
Top management	94	22.7
Middle management	238	57.5
Lower management	82	19.8

Variables	Frequency	Percentage (%)
Years of experience		
1 - 10 years	143	34.5
11 - 20 years	124	30.0
21 - 30 years	113	27.3
31 - 40 years	32	7.7
Over 40 years	2	0.5
<b>Total</b>	<b>414</b>	<b>100%</b>

#### 4.2. Assessment of the Internal Control Mechanism among Selected State Governments in Southwestern Nigeria

The internal control mechanisms' descriptive statistics are shown in Tables 2 to 6 using the internal control elements of the COSO architecture. The elements revealed in these tables include the control environment, risk assessment, control activities, information and communication and monitoring. The results in Tables 2-6 were to assess the internal control mechanisms in place in state government entities using the COSO framework's internal control elements. The elements revealed in these tables include the control environment, risk assessment, control activities, information and communication and monitoring.

Table 2 assesses the control environment mechanisms put in place by the state government and the extent of their implementation. Considering the presence of a supervisory body and the commitment of management to the entities' integrity and ethical values, about 6 out of 100 (5.8%) of the respondents agreed to very high existence and implementation, 31.4% of the respondents agreed to high existence and implementation, almost one third (40.6%) of the respondents demonstrated moderate existence and implementation, about 13% were of the opinion to low existence and implementation and 9.2% disagreed with the existence and implementation. More than half of the respondents acknowledged the existence of a management body committed to ethical values and integrity in the entity with the median value (3) indicating a modest level of existence and execution.

7% of respondents indicated that there was an oversight body tasked with supervising the creation and execution of internal control apart from management and that it was highly effective in its implementation and 28.3% admitted to its high existence and implementation. More than one-third of the respondents showed that there was moderate existence and implementation while 20.8% revealed low existence and implementation and 9.8% gave no existence and implementation. The majority of the respondents believed moderately that internal control is independent of management. This can also be deduced from the median statistic of 3.

When considering the management's delegation of power and assignment of responsibility, 13.5% of the respondents conceded very high existence and implementation, 37.7% approved of high existence and implementation, 27.3% responded that it moderately exists and is implemented, 19.1% showed low existence and implementation and 2.4% showed no existence and implementation. The organizational structure, responsibility assignment, and power delegation by management are present and moderately implemented in state government institutions as indicated by the median value of 3.

The state government entities commitment to recruit, develop and retain competent individuals showed 9.4% of respondents agreed to very high existence and implementation and 30.0% showed high existence and implementation. The majority of the respondents (35.3%) acknowledged the presence of the commitment of state government entities to mobilize, develop and maintain qualified personnel moderately, 22.2% were of the opinion that the notion has low existence and implementation while 3.1% were contrary to the opinion. The median score of 4 also confirmed the high level of commitment of state governments to recruit competent staff.

About 8.7% of the respondents opined that there was a very high presence of evaluation on performance and accountability in internal control, 34.8% agreed to high existence and implementation, 38.2% gave a moderate response, 17.1% responded to low existence and implementation and 1.2% admitted that performance and accountability were not evaluated in internal control. This result implies a moderate presence of evaluations on performance and accountability with a median value of 3. About 10% of respondents indicated that there was a very high existence and execution of the principle of effective management composition while 30.7% indicated a high existence and implementation.



**Table 2.** Control environment.

<b>Figures in the cells are percentages (n = 414)</b>							
<b>S/n</b>	<b>Statements</b>	<b>No existence and implementation</b>	<b>Low existence and implementation</b>	<b>Moderate existence and implementation</b>	<b>High existence and implementation</b>	<b>Very high existence and implementation</b>	<b>Median statistics</b>
1	Integrity and ethical standards are prioritized by management and monitored by an organization.	9.2	13.0	40.6	31.4	5.8	3
2	An independent monitoring board exists to supervise the creation and implementation of internal control, independent of management.	6.8	20.8	37.2	28.3	7.0	3
3	There is organisational structure, assignment of responsibility and delegation of authority by management to achieve the entity's objectives.	2.4	19.1	27.3	37.7	13.5	4
4	There is a commitment to recruit, develop and retain competent individuals.	3.1	22.2	35.3	30.0	9.4	3
5	There is an evaluation of performance and individual accountability in the internal control responsibilities.	1.2	17.1	38.2	34.8	8.7	3
6	There is an effective management composition that guarantees the prevention of fraud in the organization.	3.4	15.2	40.8	30.7	9.9	3
	Average	4.35	17.9	36.6	32.1	9.1	3

**Table 3.** Risk assessment.

<b>Figures in the cells are percentages (n = 414)</b>							
<b>S/n</b>	<b>Statements</b>	<b>No existence and implementation</b>	<b>Low existence and implementation</b>	<b>Moderate existence and implementation</b>	<b>High existence and implementation</b>	<b>Very high existence and implementation</b>	<b>Median statistics</b>
1	Objectives are clearly stated and it is made clear that risks can be accepted.	3.9	19.6	45.9	26.6	14.1	3
2	There is periodic identification, analysis and review of fraud risk in the sector.	4.3	18.1	41.3	31.2	5.1	3
3	There is identification of fraud potential in assessing risks to the achievement of objectives.	3.4	18.8	40.3	29.5	8.0	3
4	There is identification, analysis and response to significant changes that could impact the internal control system by management.	2.4	17.6	43.2	29.5	7.2	3
	Average	3.5	18.5	42.7	29.2	6.1	3

About 10% responded that there was a very high existence and implementation of the principle and 30.7% showed high existence and implementation regarding effective management composition.

40.8% acknowledged the presence and implementation of management composition moderately, 15.2% agreed to its low existence and implementation and 3.4% had a contrary opinion. Many respondents indicated a moderate existence and implementation of the control environment as an element of internal control mechanisms among selected state governments which was corroborated by the median value of 3. Table 3 shows the assessment of risk assessment processes implemented by state government entities. Nearly half of the respondents or 45.95% agreed to a moderate existence and implementation while 23.5% indicated a low or non-existence. Less than one-third of the respondents (30.7%) indicated that there are sufficiently stated objectives and clarifications to accept risks in organizations. This was also acknowledged with the median value at the midpoint of 3. More than one-third of the participants (35.3%) explained that there is periodic identification, analysis and review of fraud risk in state government entities, about one-tenth (41.3%) gave a moderate response to the notion while 22.4% agreed to the low existence and implementation of this principle. The data distribution was in moderate agreement with the existence of the assertion as evident by the median value of 3.

About 37.5% of the respondents showed fraud potential identification in assessing risks to achieve their objectives in high existence and implementation, 40.3% agreed that there was moderate existence and implementation and 22.2% opined that there was low and no existence of the principle. This position confirmed that the existence and implementation of fraud potential identification in assessing risks are moderate with the median point at 3.

There were about 36.7% of respondents who acknowledged that there was identification, analysis and response to significant changes made by management that may have an impact on the ICS, 43.2% showed that the principle exists and is implemented moderately and 20% disagreed with its existence and implementation.

The majority of respondents' position that risk assessment is a moderately prevalent internal control mechanism within a particular state government was supported by the mean score of 3 out of 5 points. Table 4 shows the assessment of control activities mechanisms put in place by the state governments entities. Almost half of the respondents (47.6%) responded to the very high existence and implementation of designed control activity to respond to risks and attain objectives, more than one-third (36.2%) explained that the principle moderately exists and is implemented and about one-sixth (13.5% and 2.7%) revealed low and no existence respectively. The majority of the respondents (43.7%) opined that there was a designed information system and technology infrastructure to achieve objectives and respond to risks, 38.2% showed moderate existence and implementation and 15.9% showed low existence and implementation and 2.2% showed there was no information system and technology infrastructure to achieve objectives and respond to risks in place.

Documentation of responsibilities and periodic review through policies was agreed to be present by 47.1% of respondents, 37.9% showed they were moderately put in place and implemented, 13.5% indicated that they were low in place and implemented and 1.4% revealed no documentation of responsibilities and periodic review through policies in place. More than half of the respondents (53.1%) acknowledged that policy and procedure manuals were in place and implemented in the state government entities to ensure that controls are used as intended, about one third (32.6%) specified that policy and procedure manuals were moderately put in place and implemented and almost one-eighth (11.8% and 2.4% respectively) discovered there was low and no presence and implementation of policy and procedure manuals. Respondents of about 42.2% responded that there was separation and implementation of operational responsibility and record-keeping responsibility in the entities, 42.0% explained that responsibility was moderately separated, 13.0% disclosed a low presence of separation and implementation of responsibility between operation and record keeping and 2.7% revealed no existence.

According to the table, 43.4% of the respondents revealed that there was physical control over assets, 39.6% said physical control moderately exists and is implemented and 16.6% of the respondents reacted to the low and no existence of the principle. The effectiveness and direct supervision of operations personnel to reduce the incidence of fraud in the state government were highly acknowledged by 42.3% of the respondents, 39.1% showed moderate effectiveness, 15.4% indicated low effectiveness of supervision of operation staff and 3.4% pointed out there was no principle in place. This response of the majority of the respondents indicating moderate existence and implementation of control activities as an element of internal control mechanisms among selected state governments was corroborated by the median value of 3 over the scale of 5.

**Table 4.** Control activities.

<b>Figures in the cells are percentages (n = 414).</b>							
<b>S/n</b>	<b>Statements</b>	<b>No existence and implementation</b>	<b>Low existence and implementation</b>	<b>Moderate existence and implementation</b>	<b>High existence and implementation</b>	<b>Very high existence and implementation</b>	<b>Median statistics</b>
1	There is control activities designed to achieve objectives and respond to risks.	2.7	13.5	36.2	35.3	12.3	3
2	There is an information system and technology infrastructure designed to achieve objectives and respond to risks.	2.2	15.9	38.2	36.0	7.7	3
3	There is documentation of responsibilities and periodic review through policies.	1.4	13.5	37.9	38.2	8.9	4
4	There are policy and procedure manuals in place in the sector to ensure that controls are applied as they are meant to be applied.	2.4	11.8	32.6	38.4	14.7	4
5	There is a separation between operational responsibility and record-keeping responsibility.	2.7	13.0	42.0	34.5	7.7	3
6	Physical control over assets exists.	3.4	13.5	39.6	34.5	8.9	3
7	There is effective and close supervision of operation staff to reduce the rate or level of fraud in the organization.	3.4	15.2	39.1	32.9	9.4	3
	Average	2.6	13.8	37.9	35.7	9.94	3

Table 5 shows the assessment of the information and communication mechanisms put in place by the state government entities. The availability of quality information for addressing risks was revealed to be highly prevalent and implemented by 35.5% of the respondents. 42.0% responded that the principle moderately exists and is implemented, 19.1% showed that there is low existence and implementation and less than 4% showed that quality information does not exist. About 40% of the respondents acknowledged that quality information was communicated to reporting lines at all levels. 39.9% showed that quality information was moderately communicated, about 15% agreed to the low existence and implementation of communication and about 5% recorded no communication at all levels. The majority of the respondents (40.3%) responded that there exists high communication of quality information to external parties through reporting lines to assist entities in achieving their goals and mitigating risks, 38.6% replied that information was communicated moderately to external parties, 18% said external communication was low and about 3% revealed there was no communication from external parties. Essential information on operations and finances was admitted to be implemented by 44.2% of the participants and highly communicated to the right people in the organization on a timely basis. 37.4% revealed that there was moderate existence and implementation, 16.7% revealed low existence and implementation and less than 2% showed no existence. The presence of an established process to obtain and document errors, analyse them, determine root causes and prevent future issues from arising was agreed upon and implemented by 45.4% of the respondents, 37.2% agreed to moderate existence and implementation, 14.3% agreed that there was low existence and implementation and 3.1% agreed to no existence. The majority of the respondents indicating moderate existence and implementation of information and communication as an element of internal control mechanisms among selected state governments were corroborated by the median value of 3 over the scale of 5.

Table 6 shows the assessment of monitoring mechanisms in the state government entities. Nearly 48% of the respondents revealed that there exist high performance routine actions related to management and oversight, comparisons, reconciliations and other routine tasks frequently, 37.4% showed moderate existence, 13.0% showed low existence and 1.7% showed no existence. More than half of the respondents (51.9%) showed high organization reliance on the department of internal audit to effectively monitor existing controls, about one-third (33.8%) revealed moderate reliance on internal audit by the entities, more than one-eighth of the respondents (12.6%) revealed low reliance and about 2% showed no existence of organization reliance on internal audit. About 46.3% of respondents stated that there was a responsibility for employees to report any flaws in the organization's internal control structure to the relevant management people. 36.5% agreed to moderate existence, 15% showed that there was low employees' obligation and about 2% agreed to no existence. More than half of the respondents revealed there was appropriate reporting, evaluation and corrections of issues performed on a timely basis, more than one third revealed the principle moderately exists, 11.1 % showed low existence and about 2% of the respondents showed there was no existence. The majority of the respondents indicating the high existence of monitoring as an element of internal control mechanisms among selected state governments were corroborated by the median value of 4 over the scale of 5.

#### 4.3. Discussion of Findings

The control environment examined six questions with emphasis on the controls and implemented in the entities' environment. The result revealed that there is a moderate control environment in the state government entities. This was explained by taking the average of the variables used for the control environment which gives 36.6%. This implies that controls in relation to organization's environments are put in place but their moderate existence shows that they have not been well established and implemented in state government entities. The findings of the studies by Fasua and Osagie (2016) and Kong, Lartey, Bah, and Biswas (2018) which outlined how staff and leadership manners affect internal control effectiveness are corroborated by this outcome.

**Table 5.** Information and communication.

S/n	Figures in the cells are percentages (n = 414).					
	Statements	No existence and implementation	Low existence and implementation	Moderate existence and implementation	High existence and implementation	Very high existence and implementation
1	There is availability of quality information for addressing risks.	3.4	19.1	42.0	28.0	7.5
2	High-quality information is shared at all levels, down, across and around reporting lines.	4.6	15.9	39.9	30.9	8.7
3	There is quality information communicated externally through reporting lines so that external parties can help the entity achieve its objectives and address related risks.	2.9	18.1	38.6	31.4	8.9
4	All operational and financial data is available and rapidly shared with the appropriate people within the organization.	1.7	16.7	37.4	32.6	11.6
5	A process has been put together to collect and document errors in order to assess, identify the underlying cause, and prevent a problem from happening again.	3.1	14.3	37.2	30.9	14.5
	Average	3.1	16.8	39.0	30.8	10.2

**Table 6.** Monitoring.

Figures in the cells are percentages (n = 414)							
S/n	Statements	No existence and implementation	Low existence and implementation	Moderate existence and implementation	High existence and implementation	Very high existence and implementation	Median statistics
1	There are regular supervisory and management activities, reconciliations, comparisons and other routine actions frequently performed.	1.7	13.0	37.4	38.4	9.4	3
2	There is organizational reliance on the internal audit department for effective monitoring of controls in existence.	1.7	12.6	33.8	41.8	10.1	4
3	There is an employee's obligation to communicate observed weaknesses in compliance with the internal control structure of the organization to the appropriate management personnel.	2.2	15.0	36.5	37.4	8.9	3
4	There is appropriate reporting, evaluation and correction of issues performed on a timely basis.	1.9	11.1	35.7	37.2	14.0	4
	Average	1.9	12.9	35.8	38.7	10.6	4

The four questions considered under risk management controls showed their moderate existence and implementation with an average value of 42.7%. This implies that potential losses are promptly identified and mitigated though moderately. It showed that more consideration should be given to risk assessment by public entities. The result is supported by [Nyakarimi et al. \(2020\)](#).

After evaluating the control activities, it was determined that they were moderate and took into account seven questions. The average values of the variables were 37.9% which suggests that there was a moderate level of awareness and implementation of control initiatives. This is in line with [Ademola et al. \(2015\)](#) and [Nyakarimi et al. \(2020\)](#).

A study was conducted to investigate five principles and controls related to information and communication applied in state government organisations. The results indicated that on average, 39.0% of government entities had information and communication controls.

This implies that there is a proper control as regard how information and communication are disseminated in the entities. The result agrees with [Yao et al. \(2017\)](#). Furthermore, the study analyzed respondents' responses to four questions under monitoring of controls. There was both high and moderate level of controls, the average statistics showed 38.7% which shows a high level of proper monitoring principles put in place in the state government entities. This suggests that there are precise controls, awareness is raised and they are properly implemented. The result is supported by [Malowa \(2021\)](#) which explains a long-lasting evaluation and monitoring framework in public organizations.

## 5. CONCLUSION AND RECOMMENDATIONS

The study showed that the existence and implementation of internal control mechanisms are generally moderate in state government organizations in southwestern, Nigeria. Thus, the study concluded that internal controls using the COSO framework are moderately in place and implemented.

However, the implementation of internal control system mechanisms and their presence are insufficient to prevent corrupt activities, fraud, misapplication and the misappropriation of public funds which are common in developing countries particularly Nigeria.

The study recommended that state governments should provide more awareness of the mechanism of internal controls in all ministries, departments and agencies (MDAs) of the states through training on the processes to be followed to enhance the improvement of internal controls in preventing fraud. It is also necessary to establish efficient controls in the workplace, information and communication, control activities and risk assessment to reduce the risk of fraud. These controls should be carefully implemented.

### 5.1. Practical Implications

The study recommended that when creating, establishing and implementing internal control mechanisms in public sector organisations, government agencies tasked with handling control and audit functions strictly adhere to all the components and contents of the COSO framework. This will prevent corruption, embezzlement and stealing of public funds.

### 5.2. Limitations and Further Research Suggestion

Only three purposively selected states in the south-west geopolitical zone were studied out of the 36 states of the federation and federal capital territory. The study can be extended to all five remaining geopolitical zones which comprise the remaining 30 states of the federation.

### 5.3. Contribution to the Literature

The study contributes to the empirical literature on using the COSO framework to appraise the existence of all internal control mechanisms and their implementation in preventing misappropriation of public funds.

## FUNDING

This study received no specific financial support.

## INSTITUTIONAL REVIEW BOARD STATEMENT

The Ethical Committee of the Obafemi Awolowo University, Nigeria has granted approval for this study on 10 November 2021 (Ref. No. 19112021).

## TRANSPARENCY

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

## COMPETING INTERESTS

The authors declare that they have no competing interests.

## AUTHORS' CONTRIBUTIONS

All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

## ARTICLE HISTORY

Received: 1 November 2023/ Revised: 12 January 2024/ Accepted: 28 February 2024/ Published: 8 March 2024

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