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Assessment of the Effectiveness of Internal Control Systems of Adamawa State Ministries, Departments and Agencies in Adamawa State, Nigeria

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Authors' contributions

This work was carried out in collaboration among all authors. Author IAA designed the study and managed the literature searches relating to the study. Author DS headed the data collection team while author KMM performed the statistical analyses and data interpretation. All authors read and approved the final manuscript.

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ABSTRACT

Aim: This study examines the effectiveness of internal control systems (ICS) of Adamawa state Ministries, Departments and Agencies (MDAs).
Study Design: Survey research design.
Place and Duration of Study: Sample: Ministries, Departments and Agencies in Adamawa State in 2019.
Methodology: The sample size of the study was one hundred and sixty-five (165) target respondents which consist of all heads of MDAs, Directors of Finance, internal auditors' and two key staff from accounts and audits of the ministries, departments and agencies. The study used primary data and questionnaire was used in collecting data used for analyses. The effectiveness of the

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internal control systems under four dimensions: control environment (CE), control activities (CA), information, and communication (IC), and monitoring of controls (MC) were analyzed using descriptive statistics while ANOVA test was used to test the hypothesis of the study.
Results: The study found that the effectiveness of ICS for the MDAs in Adamawa state was good. The Departments category generally had the highest rating for CE, CA, IC and MC. This is reflected in their overall effectiveness. However, other categories (Ministries & Agencies) had moderate ICS effectiveness, particularly the Agencies that recorded the lowest rating in concerning to CE and CA.
Recommendation: The study recommends that Departments should maintain their level of internal control systems through effective monitoring and separate evaluations of their systems of control. This will help enhance or maintain the current level of their internal control systems. Ministries and Agencies should strengthen their Control Environment through mechanisms such as a commitment to integrity, ethical values, and competence, and Control Activities by ensuring that unauthorized transactions are not processed and more controls are put in place to avoid overspending. This will render the other components of internal controls more effective.

Keywords: Internal controls; control environment; control activities; information; communication; monitoring of controls; ministries; departments; Agencies.

1. INTRODUCTION

Internal controls are measures put in place by the management of an organization to ensure that objectives are achieved. An internal control system in an organization operates like the human nervous system spreading throughout an organization hierarchy to carry out orders across various levels in an organization [1]. Internal Controls in public sector organizations also referred to as managerial policing plays a vital role in sustaining public confidence. This is achieved by always putting a check on the custodians of public funds [2].

Therefore, organizations need to set up effective and efficient control mechanisms to ensure the functioning of the whole organization and day to day activities are in line with the established rules and regulations. In this regard, therefore the Internal Control System (ICS) of which the Internal Audit function is a major player and forms one of the tools in any control mechanism need to be empowered to report on significant issues to management for redress and purposes of informed decision making.

In recent times, various control mechanisms have been established by sub-region African countries to include new ideas that are directed towards bringing in improved techniques in services provided by the government in general. In Nigeria for instance, public sector financial management has undergone various reforms. Most recently is the introduction and successful implementation of Treasury Single Account (TSA) and the Integrated Financial Management Information System (IFMIS) (which is also used by Adamawa State Government for payroll), all of which seeks to strengthen the internal control systems in the public sector to have an efficient and waste less financial management system.

Without overemphasizing the enormous benefits of internal controls in public sector organizations and to the citizenry, coupled with recent revelations of a few of the financial malpractices in the public sector which boils largely to weak and ill-functioning internal controls. There have been calls for better internal controls in organizations [2 and 3]. Internal controls are therefore looked upon more and more as a solution to a variety of potential problems in organizations including the Adamawa State Ministries Departments and Agencies (ASMDAs).

Corporate scandals (such as Enron and WorldCom scandal in 1990) and the legislations, like the Sarbanes Oxley Act which was passed in July 2002 have spurred the public to focus on the importance of Internal Controls and government of organizations which is not limited to only private business activities but include federal and state government ministries, departments and agencies, public utilities, hospitals, colleges and universities, pension schemes, boards of trustees, the legislature, and local government institutions of which the Adamawa State MDAs are part.

Due to the vital role that internal control system plays, researchers have strived to evaluate its effectiveness in various institutions [4, 5, 6, 7, 2 and 8]. Nonetheless, some of these studies are limited in scope in terms of choice of internal control dimensions used and also did not look

differences in the components of ICS across various organization categories and divisions. For instance, [4] considered only control environment and monitoring components to examine their impact on liquidity. [5] did not employ categorically the dimensions of ICS in assessing the effectiveness of ICS in Nasarawa state polytechnic, Lafia. While the study of [8] only focused on only internal audits to determine internal control effectiveness in tertiary institutions in Adamawa state. Besides, methodologically, the foregoing studies examined the effectiveness of ICS by focusing on a simple percentages and chi-square. In addition, the selection of Adamawa state was due to inadequate studies in this area in the state. It is based on the foregoing and to add to the existing body of knowledge, this study examines (i) the effectiveness of internal control systems of Adamawa State MDAs and also (ii) investigate whether there are significant differences in the internal control systems among MDAs in Adamawa state with a view to provide recommendations that will strengthen internal processes and procedures. In order to achieve the objectives of this study, the following research questions will be answered:

i. How effective are the existing systems of internal control of MDAs in Adamawa state?

ii. Is there any significant difference in the internal control systems among MDAs in Adamawa state?

To achieve objective (ii) of this study, the following null hypotheses will be tested:

Ho_1: There is no significant difference in the internal control system across the three categories of participating organizations in the study.

2. LITERATURE REVIEW

2.1 Conceptual Review

This section reviews concepts and views of researchers on the study. Hence, components of internal control, the effectiveness of internal control, and internal control assessment were reviewed.

2.1.1 Components of Internal Controls

The components of internal control have been classified into five dimensions: control environment, control activities, risk assessment, information, and communication, and monitoring activities [9 and 10]. However, considering the area of application, only four were examined in this study.

2.1.2 The control environment

The control environment is seen as the basis of internal control systems which influences the control consciousness of all staff of an organization [11]. [12] opined that the control environment is the style, philosophy, and supportive attitude. This is in addition to the ethical values, competence, morale and integrity of those concerned with the organization. A similar view by [13] described the control environment as the structure and discipline that ensures the realization of the main objectives of internal control systems. This is in addition to climate affecting the entire quality of the internal control systems.

[14] report indicate that for organizations to encourage employees about the control awareness and promote control consciousness, there is a need for controlling the environment. Several factors affecting the control environment are honesty, moral values, pledge of proficiency, the board audit committee, and directors with management's operating supervision and organizational culture.

2.1.3 Control activities

The Control Activities refer to policies, procedures, and mechanisms put in place to ensure that directives of the management and controls over financial reporting are properly carried out [15 and 16]. The control activities are also put in place to ensure that all necessary actions are taken to address risks for the achievement of organizational objectives [17].

Control activities occur throughout the organization. [18] report that control activities include reconciliations, approvals, verifications, reviews of operative performance, segregation of duties. Similarly, [19] state that vital functions within the control environment comprise of the Security of Assets, Segregation of Duties, Authorization of Activities, Approval, Verification and Reconciliation, Complete Documentation, Integrity in Effectiveness Evaluation. Hence, control activities are expected to be implemented by the various levels of management and units within the organization to achieve the overall organization's objectives.

2.1.4 Information and communication system

[20] posits that the two important part of the information and communication component of internal control is information system and communication. The methods and channels an organization implement to communicate policies, directives and essential information represents the communication systems [20 and 21]. [4] maintains that information and communication systems surround the activities of a control environment, this allows for the interchange of information necessary to control and conduct the organization operations by employees.

Effective communication within an organization should be all-encompassing with information flowing up and down and across all sections within the organization [22]. Recently, information and communication component is viewed as one of the internal control systems due to the role it plays in influencing the working relationship across all levels of an organization [23]. Hence, such information must be conveyed all through the organization to achieve the organization's objectives.

2.1.5 Monitoring

Monitoring denotes assessment of the quality of the internal control structure over time. Since internal controls are processes, they need to be adequately monitored for assessment of the quality and the effectiveness of the system's performance. By monitoring, the organization gets provided with the assurance that the findings of audits and other reviews are promptly determined [22]. [23] add that monitoring of operations ensures the effective functioning of the internal controls system. The monitoring component allows organizations to determine whether or not policies and procedures implemented by management are carried out effectively by employees.

In essence, [24] suggests that, in addition to knowledge of individual responsibilities by employees, for organizations to achieve effective monitoring of internal controls and reach performance targets, employees are expected to have adequate knowledge of the objectives, mission and the risk tolerance level of the organization.

2.2 Empirical Review

In their study, [25 and 26] have shown the need for internal control systems in the management of productive resources. Their findings revealed that the management of public institutions cannot override internal control systems and employees are abreast of internal control policies to ensure its existence.

[27], also studied the effectiveness of internal control systems of listed firms in Ghana. Overall, the findings revealed that the internal control system showed an average level of effectiveness in the study with a control environment showing a higher level of effectiveness. However, this implies an overall low level of effectiveness.

[6] investigated an effective internal control system for good financial accountability at the local government level in Oyo State, Nigeria. Data obtained were analyzed using percentage and chi-square. The result of the finding shows that the internal control system is positively significant for the good financial accountability in the local government area council in Nigeria with specific reference to Oyo state local government areas.

In his study, [5] investigated Effective Internal Control System in the Nasarawa State Tertiary Educational Institutions for Efficiency. A closed-ended questionnaire with a sample of twenty-seven (27) member staff from the Bursary and Internal audit unit of the Nasarawa State Polytechnic was used. Responses from the questionnaire were analyzed using a simple percentage and chi-square. Findings revealed that the right people are not assigned to the right job in the department, budget, and management accounting were never used in the institution's operations and there are no regular checks of subordinates by their superior officers. This renders the current internal control structure of the Polytechnic as ineffective and weak.

[28] assessed internal control units for the effectiveness of financial control in administrative government units. Using a sample of 125 respondents, descriptive statistics were used in analyzing the data. The study findings revealed that there is a level of effectiveness of financial control in administrative government units.

Coming down to Adamawa state (where this study is based), [8] assessed the impact of the internal audit unit on the effectiveness of the internal control system of tertiary institutions in Adamawa state. A sample of 8 tertiary institutions was considered and descriptive statistics and chi-square were used to analyze

the data. The findings reveal that lack of independence of the internal audit unit contributed largely to the ineffectiveness of the internal control system and that components of ICS are not properly put in place by the management of the institutions especially in the area of authorization and approval, supervision and segregation of duties.

2.3 Theoretical Review

To provide theoretical support to the concepts and variables of this study, two theories are reviewed in this subsection. These include agency theory and reliability theory.

2.3.1 The agency theory

Agency theory is grounded on the idea of separation of ownership (principal) and management (agent) who are charged with using and controlling those resources [29].

[29] further posit that the agency theory acknowledges that incomplete information regarding the relationship, interests, or job performance of the agent described could be unfavorable and can constitute a moral hazard. Moral hazard and adversarial selection have a control over the output of the agent in two ways; inadequate knowledge about what should be done and not undertaking precisely what the agent is appointed to do.

This theory is applies to this study simply because internal control is one of many mechanisms used in organizations to address the agency problem by reducing agency costs that affect the overall functioning of the relationship as well as the benefits of the principal [30].

2.3.2 Reliability theory

[31] opined that reliability theory defines the likelihood of a system finishing its expected function during a particular time interval. According to the reliability theory, the reliability of a complete system of internal control is defined by dual possible states, ‘success’ and ‘failure’.

The main objective of internal control is to make assessment and control risks. This is to prevent material errors or detect them on time to prevent losses. Weak internal control systems result in more substantive work and hence greater cost. [31] opined that the determination of the "weakness" of any internal control system is primarily judgmental. Upon the process formulation and system reliability estimates, comparison with data from the organization’s past financial events or other firms may provide a more solid basis for judgment of the impact of an internal control system on the firm’s income risk and hence provide for more rational allocation of the auditor's time and effort. [32] state that one of the primary advantages of the reliability theory is its close relationship to the auditor's needs regarding understanding the internal control system and control risk assessment. This study considered the part of the reliability theory which relates the internal control system to component reliabilities [33].

Therefore, the theoretical postulates that best explained this study is *the reliability theory* (which states that the probability of a system completing its expected function during a particular time interval).

3. METHODOLOGY

This study used a survey research design. Due to the nature of the data that was collected, cross-sectional survey design was adopted. The data for this study was collected through the administration of the questionnaire.

The population and sample of the study consist of all heads of MDAs, Directors of Finance, internal auditors’ and two key staff from accounts and audit of the ministries, departments, and agencies. There are twenty-three (23) ministries, five (5) departments, and five (5) agencies in Adamawa state making a total of thirty-three (33). Therefore, the total number of respondents for this study was one hundred and sixty-five (165).

This study used primary data. The study collected data from respondents using a questionnaire as the main research instrument for the primary data. The questionnaire was adopted from [34 and 7]. Thus, the Five-Point Likert Scale was used in measuring the responses of the entire questions. This is because several researchers used this scale because it is easy for respondents to understand, hence, responses from a five-point scale are probably to be reliable [22].

This study analyzed the data using descriptive statistics (mean & standard deviation) and ANOVA test. The descriptive statistics were used to analyze the demographic characteristics of

respondents and assess the effectiveness of the Internal Control Systems. The ANOVA test was applied to measure whether internal control system activity applied in MDAs establishments show considerable difference in respect to the categories of the establishments. To assess the scale reliability and consistency of the instrument, the Cronbach's Alpha (α) analysis was conducted. The Statistical Package for Social Sciences (SPSS) version 20.0 was used for the data analysis.

4. RESULTS AND DISCUSSION

4.1 Response Rate

The sample of the study consisted of 165 target respondents in the MDAs out of which 141 usable responses were received, translating into an 85.5% response rate. The response was considered appropriate since [35] argues that any response rate in survey studies above 30% is considered sufficient.

4.2 Demographic Profile of Respondents

4.2.1 Gender distribution of respondents

The gender of the respondents was sought. The majority (76.6%) of the respondents were male while the rest (23.4%) of the respondents were female as shown in Table 1. The statistics show that majority of employees in charge of internal control systems in the MDAs of Adamawa state are Male. The distribution however represents a fair gender balancing, an indication of improvement and efforts of various gender mainstreaming campaigns.

4.2.2 Respondents place of work

The distribution of respondents per place of work as shown in Table 2 shows that there is a proper representation of all the places. This is an indication that proper stratification of the places was done. The department and agency respondents are few in number because the organizations as a whole are also few in number.

4.2.3 Level of education of respondents

Respondent's level of education was sought with 19.9% having a diploma and the majority (53.2%) of the respondents indicated that they have at least a degree level of education while sizeable (27%) possess a higher degree at postgraduate level (Table 3). This is highly expected since the majority of the respondents are at a senior management level where the skills knowledge and competencies are supposed to be high. This depicts that the respondents were well educated and informed and therefore furnished this study with better information that added value.

Table 1. Distribution of Respondents by Gender

Gender	Frequency	Percentage
Male	108	76.6
Female	33	23.4
Total	141	100

Source: Field Study, 2019

Table 2. Place of Work of Respondents

Description	Frequency	Percentage
Ministry	97	68.8
Department	21	14.9
Agency	23	16.3
Total	141	100

Source: Field Study, 2019

Table 3. Education Level of Respondents

Education Level	Frequency	Percentage
Diploma	28	19.8
HND/B.Sc.	75	53.2
Postgraduate	38	27.0
Total	141	100

Source: Field Study, 2019

Table 4. Working Experience of Respondents

Experience in Years	Frequency	Percentage
Less than 5 years	25	17.7
6 to 10 years	54	38.3
11 to 15 years	36	25.5
16 to 20 years	16	11.4
Over 20 years	10	7.1
Total	141	100

Source: Field Study, 2019

Table 5. Reliability Statistics

Variables	Cronbach's Alpha	Number of Items
Control Environment (CE)	0.898	15
Control Activities (CA)	0.906	15
Information and Communication (IC)	0.882	10
Monitoring Activities (MC)	0.882	11

Source: Field Study, 2019

4.2.4 Working experience of respondents

This question sought to investigate the number of years each respondent had worked in the company. The majority (38.3%) of the respondents had a working experience between 6 to 10 years, 25.5% had 11 to 15 years, 17.7% had below 5 years, 11.3% had 16 to 20 years and 7.1% had over 20 years of experience as shown in Table 4. This means that the respondents had adequate working experience with the MDAs and therefore possess the necessary knowledge and information which was considered useful for this study.

4.3 Data Screening and Preparation

Initial screening of data and preparation are the essential steps required before proceeding to perform further analysis. It is imperative to carry out data screening to identify any potential violation(s) of the basic assumptions related to the application of the techniques to be used [36 and 37]. Moreover, an initial data examination allows the researcher to gain a deeper understanding of the data collected. In this regard, missing data and reliability analysis are performed accordingly.

4.3.1 Missing data analysis

Missing data occurs where the respondent(s) to a questionnaire left a question(s) unanswered, or where a researcher fails to input the data appropriately and completely. According to [36], missing values should be replaced using the mean where there are less than 5% missing values per item. In this study, missing value analysis indicates none of the indicators had 5% missing values, rather, it has 0%. Hence, missing values are not present in this study.

4.3.2 Data reliability

The coefficient alpha is an appropriate measure of variance attributable to subjects and variance attributable to the interaction between subjects and items [38]. Accordingly, the coefficient alpha or Cronbach's alpha was used as a measure of internal scale reliability. In terms of the specific testing of internal scale reliability, the following scores obtained in terms of the testing of the Cronbach's alphas are indicated in Table 5.

Thus, the values in Table 1 control environment $\alpha = 0.898$, control activities $\alpha = 0.906$, information and communication $\alpha = 0.882$, Monitoring activities $\alpha = 0.882$ are sufficient confirmation of data reliability for the variables. A Cronbach's alpha of 0.60 as a minimum level is acceptable [38].

4.4 Descriptive Analysis

4.4.1 Descriptive analysis for control environment

The responses sought under control environment factor in the MDAs participating in the study as shown in Table 6 was analyzed in relation to Integrity and ethical values; the commitment to competence; management philosophy and

operating style; organizational structure and the way management assigns authority and responsibility. From the evaluation of the responses given by the participants, it is seen that the average of the answers was between 3.70 (smallest) and 4.27 (largest). When the responses given to the expressions of the control environment factor are examined, it is seen that the average of all is above three. In this direction, it has been determined that the control environment is effective in the MDAs that participated in this survey.

The findings from this component of Internal Control support [4] assertion that firms that promote integrity and ethics are likely to win public confidence. The results also agree with the findings by [39] that management is responsible for creating an environment in which ethical behaviour is encouraged and that internal auditors should survey the people who work in that environment to evaluate employees ethical behaviour as a test of the strength of control environment.

The results collaborate the findings by [40] that organizational structure defines how job tasks are formally divided, grouped, and coordinated. There are six elements that managers of agencies need to address when they design their organization's structure. These are work specialization, departmentalization, chain of command, a span of control, centralization, decentralization, and formalization. This finding supports the result of [33], that organizational structures adequately reflected the chain of command at the University of Nairobi Enterprise. The results also concur with the findings by [41] that structure has a direct effect on the success of an organizational operational strategy.

Table 6. Descriptive Statistics for Control Environment

Items	Mean	Std. Deviation
The organization has appropriate entity policies regarding such matters as acceptable organization practices, conflicts of interest, and codes of conduct have been established and they adequately communicated	4.21	.797
Management demonstrates the appropriate "tone at the top", including explicit moral guidance about what is right and wrong and is this communicated in both words and deeds	4.09	1.018
Management dealings with employees, suppliers, citizens, and auditors are based on honesty and fairness	3.70	.925
Employee job descriptions, including specific duties, reporting responsibilities, and constraints are clearly established and effectively communicated to employees	4.27	.861
Management determines the level of knowledge and skills needed to perform a particular job and this information is used in the hiring process	4.11	.837
The organization adequately compensate employees in to attract qualified individuals	3.92	.942
Employee performance evaluation techniques are implemented to identify incompetent or ineffective employees	4.16	.825
Management and operating decisions are not dominated by a few individuals	4.13	.864
Management analyses the risks and potential benefits of a venture before making a decision	3.87	.987
Management has mechanisms to anticipate, identify and react to events or activities that affect achieving organization objectives	3.77	.995
The organization of the company is clearly defined in terms of lines of authority and responsibility	3.89	.887
There are adequate supervision and monitoring of decentralized operations	4.08	.887
The organizational structure appropriate for the size and complexity of the entity	3.94	.987
There is a clear assignment of responsibility and delegation of authority to deal with such matters as organizational goals and objectives, operating functions, and regulatory requirements	3.90	.848
All employees have job responsibilities, including specific duties, reporting relationships clearly established and communicated.	3.91	.890

Source: Field study, 2019

Table 7. Descriptive Statistics for Control Activities

Items	Mean	Std. Deviation
There exists appropriate approval and authorization mechanism in place in your organization	4.07	.990
Appropriate disciplinary action taken for breach of approval and authorization systems in place	3.99	.989
Those in authority are aware of their power to approve and authorize transactions	3.91	.945
Approval and authorization are properly documented and referred to	4.21	1.006
There is strict adherence to approval and authorization systems in place	4.32	.831
Unauthorized transactions are not processed	3.84	1.129
Delegated staffs have the power to authorize.	4.14	1.004
There is respect for each other's role and duties in service delivery	4.04	1.092
Controls are in place to avoid overspending	3.81	1.035
There is the supervision of junior staff by senior staff.	4.03	1.048
Our entity has clear segregation of duties	4.08	.887
Every employee work, check on the other	3.94	.987
There is the supervision of junior staff by senior staff	3.90	.848
It is impossible for one staff to have access to valuable information's without the consent of a senior staff	3.91	.890
Staffs are in place to allow proper segregation of duty	4.07	.990

Source: Field study, 2019

4.4.2 Descriptive analysis for control activities

In the MDAs participating in the research, the answers given to the dimensions of control activities factor are given in Table 7. The control activities component was evaluated in relation to approval and authorization and segregation of duties sub-dimensions. From Table 6, when the answers given by the participants were evaluated, it is seen that the averages of the answers change between 3.81 (smallest) and 4.32 (largest). It is noticed that all of the averages of the answers given to the expressions of control activities factor are over three. This is an indication that the MDAs ensure necessary processes and procedures are followed before transactions are approved and there is adequate control by delegated staff on various duties performed by them. The reason for such measures was to ensure efficient use of resources [42] and avoid manipulation of the system.

At the peak of authorization and approval sub-dimension, the views of the respondents indicated that MDAs are strict in adhering to approval and authorization systems (mean = 4.32; Std. Deviation = .831). This was to provide reasonable assurance concerning the achievement of organizational objectives [43]. For the segregation of duties, the respondents reported strong rating for their MDAs (mean ≥3.90 ≤4.08; standard deviation ≥.848 ≤.990). The larger mean score suggests that the MDAs placed much importance on segregation of duties. However, the corresponding standard deviation suggests varied responses. In this direction, it is a clear indication that control activities of the MDAs are effective in most MDAs.

After analyzing the indicators of control activities, the researcher aggregated all the indicators into a single score. This was to determine the condition of control activities in the MDAs. The result discovered that on the whole, control activities reported a strong rating (mean = 4.02; standard deviation = .65). This connotes that the MDAs in the state paid much attention to enhancing the effectiveness of their control activities. This finding is inconsistent with the results of [44] that due to the inadequate training of staff to implement the accounting and financial system, the current internal control activities at Cross River State College of Education were weak.

4.4.3 Descriptive analysis for information and communication

In the MDAs participating in the research, the answers given to the variables of information and communication factor are given in Table 8. The

results reveal that MDAs reported a very strong rating on the information and communication components of the ICS. When the answers given by the respondents were evaluated, it is seen that the averages of the responses change between 4.01 (smallest) and 4.22 (largest). The results implied that the MDAs generated relevant and quality information to support the effective functioning of the other components of ICS. Such actions were to warrant the effective running of the other components of ICS [45 and 4].

Subsequently, all the indicators of information and communication were aggregated into a single score. The findings showed that the information and communication dimension of ICS reported a strong rating for MDAs in Adamawa state. This is evidenced by the mean score of 4.10 and standard deviation = .57. The implication of the result is that the MDAs had in place stringent measures for enhancing the effectiveness of their information and communication systems.

Table 8. Descriptive Statistics for Information and Communication

Items	Mean	Std. Deviation
Risks are determined the enterprise carry and an emergency plan is available	4.16	.833
There is a check that information exchange between independent departments is done correctly	4.04	.901
There is effective communication between the departments.	4.15	.765
There are feedback mechanisms for the management's purposes to be evaluated by the management.	4.09	.819
The correctness of the information constituting the basis of the financial reporting is guaranteed by the written documents.	4.01	.832
The information system ensures that the data needed in the execution of the activities are supplied in an up-to-date and correct manner	4.06	.901
The data is controlled, updated and verified while it is transferred to the information system	4.12	.906
There are elements that restrict access to information systems and access to date	4.22	.708
Software for information systems is provided, altered and protected by authorities and expert people	4.12	.815
In an organization, with a feedback system, a common communication language understood by all staff (common language structure) is available	4.06	.735

Source: Field study, 2019

Table 9. Descriptive Statistics for Monitoring Activities

Items	Mean	Std. Deviation
The internal control system efficiency is continuously assessed and monitored by the management	3.92	.903
Each department is responsible for the effective implementation and operation of the internal control procedures	3.96	.882
The internal control system identifies errors and irregularities immediately and ensures that the necessary measures are taken.	4.03	.792
Operators use performance criteria established in line with their objectives and plans.	4.25	.880
Management frequently reviews and improves the operation of control activities	4.30	.826
Management periodically monitors the appropriateness and accuracy of performance indicators and measures.	4.33	.788
Top management regularly monitors the performance of the business	4.17	.933
Performance data is periodically compared to planned objectives and analyzed in detail	3.93	1.046
In the organization, important points are followed by cameras and the images are used when necessary.	4.08	.854
In the organization an effective internal audit department is available.	4.20	.749
The Internal control unit is supported by the internal audit unit.	4.04	.970

Source: Field study, 2019

Table 10. ANOVA Test for Internal Control System

Category of Organization		N	Mean	Std. Deviation	Sig.
Ministries	Departments	97	4.04	.56607	.363
	Agencies				.786
Departments	Ministries	21	4.22	.41437	.363
	Agencies				.251
Agencies	Ministries	23	3.96	.75529	.786
	Departments				.251

Source: Field study, 2019

4.4.4 Descriptive analysis for monitoring activities

Responses from MDAs to the dimensions of monitoring factors are given in Table 9. When the answers given by the respondents were evaluated, it is seen that the averages of the responses change between 3.92 (smallest) and 4.33 (largest). It is noticed that all of the averages of the answers given to the expressions of monitoring factor are over three. At the largest (mean = 4.33; Std deviation = .788), the result indicates that Management periodically monitors the appropriateness and accuracy of performance indicators and measures. The result supports the result of [33] that through monitoring, the organization determines whether policies and procedures are being complied with. A strong rating was also returned for the review and improvement on the operation of control activities (mean = 4.30; Std deviation = .826). This agrees with the view of [24] that the effectiveness of control systems can be maintained through a review of organization's activities.

To assess the overall condition of monitoring, all the indicators of monitoring were aggregated into a single score. After assessing the general condition of monitoring, the result showed that on the whole, the MDAs demonstrated strong condition of monitoring (mean = 4.11; standard deviation = .59). This finding supports the result of [4] who found strong monitoring systems as one of the variables that determine the effectiveness of control systems.

4.5 ANOVA Test for Internal Control System

In line with the objective and the hypothesis of this study, the differences in internal control systems per the three categories of participating organizations (Ministries, Departments & Agencies) was analyzed. The aggregated mean scores of each of the four dimensions of ICS examined in the study namely; control environment, control activities, information and communication, and monitoring per the three categories of the organizations of ICS was analyzed. The ensuing paragraph discusses the ANOVA result for ICS.

The Departments category recorded the highest rating (mean = 4.22) for ICS among the three categories. While the Agencies category has the lowest rating (mean = 3.96). This shows that, on a whole, ICS is more effective in the department's category.

It is also evident from Table 10 that the result from the ANOVA test revealed a statistically insignificant difference in the aggregated ICS dimension scores across the three categories of organizations used in the study. The reason is that the significant value obtained from the Test Statistics results was all greater than the conventional alpha level of 0.05, suggesting that there is a statistically insignificant difference in the internal control scores among the three categories of organizations used. Thus, this study failed to reject the hypothesis that there is no significant difference in the internal control systems across the three categories.

The above result means that the MDAs in Adamawa state instituted similar internal control mechanisms. The finding may be ascribed to similar strategies adopted by the three categories of organizations in the state since they belong to the same tier of government. The result is in supports of Donaldson (2006) view as cited in [46] that the structure of the control system depends on the contingency characteristics such as the strategy, size, and risk profile.

4.6 Summary of Key Findings

A summary of the key findings of the study is presented below:

1. The study revealed effective conditions of ICS among Ministries, Departments, and Agencies. However, Departments had the strongest rating (mean = 4.22). While agencies recorded a lower rating (mean = 3.96).
2. For the internal control system, the main findings for the differences in ICS per category of the organization from the results showed that there was no statistically significant difference in the internal control scores across the three categories of organizations used in the study ($P > .05$).

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

Based on the summary of findings and objectives of this study, the following conclusions are made:

- The ICS of MDAs in Adamawa state is effective. The Departments category generally had the highest level of or paid more attention to their CE, CA, IC, and MC. This is reflected in their overall effectiveness. However, other categories (Ministries & Agencies) had a moderate level of effectiveness ICS, particularly the Agencies that recorded the lowest rating.

- The study also concludes that Ministries, Departments, and Agencies had comparable CE, CA, IC, and MC. This may be attributed to similar strategies adopted by the three categories of organizations in the state since they belong to the same tier of government.

5.2 Recommendations

- Departments should maintain their level of internal control systems through effective monitoring and separate evaluations of their systems of control. This will help enhance or maintain the current level of their internal control systems. Ministries and Agencies should strengthen their Control Environment through mechanisms such as a commitment to integrity, ethical values, and competence, and Control Activities by ensuring that unauthorized transactions are not processed and more controls are put in place to avoid overspending. This will render the other components of internal controls more effective.
- Ministries, Departments, and Agencies should pay attention to maintaining similar CE, CA, IC, and MC by adopting similar operating styles and identical reporting lines of authority and communication to employees. This is because the ICS of the MDAs is identical across the various dimensions. This will enhance the effectiveness of ICS as a whole among the MDAs thereby making the government as whole more accountable to the populace.

5.3 Suggestions for Further Research

Despite the contributions made by this study, it highlights a few aspects to be considered by future researchers. Further studies should consider covering other government parastatals or Private sector entities in Adamawa state, as most studies on ICS in the state are centered around Public institutions. Furthermore, future studies in this area should consider other variables such as risk management and internal audit size as dimension that determines internal control effectiveness.

CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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