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Abstract

This study aimed to investigate the impact of internal audit operational efficiency on the performance of public institutions in Rwanda, using a case study of Ngoma District. The study aimed to identify the main internal control activities, assess the role of internal audit operations in identifying and assessing risks, establish the effects of internal audit operations on ensuring compliance with laws, regulations, and internal policies, analyze the contributions of internal audit operations in detecting and deterring fraudulent activities, and find out the impact of an effective audit system on operational efficiency. The target population consisted of 120 staff working at the Ngoma District head office in Kigali, with 92 being a sample. Primary data was collected through structured questionnaires and secondary data from Ngoma District reports and online resources. The statistical analysis revealed several strong and highly significant correlations between internal audit operationalization processes and the performance of public institutions. There is a substantial positive correlation between the internal audit processes of File Verification, approval, and Authorization and the institution's ability to detect and assess risks. The study also demonstrates a significant correlation between computer system control measures in the internal audit process and an institution's ability to adhere to legal requirements, regulations, and internal policies. A strong and statistically significant correlation is found between the implementation of backup and file recovery procedures and the prevention of fraudulent activities, emphasizing the importance of data integrity and security in maintaining trustworthiness. Finally, the research reveals a robust and statistically significant association between staff monitoring and the operational efficiency of public institutions, underlining the critical role of accountability and supervision in streamlining processes and resource allocation. These findings emphasize the significance of comprehensive internal audit practices and controls in enhancing the performance, governance, and effectiveness of public institutions in Ngoma district.

Keywords: *Internal Audit, Operational Efficiency, Public Institutions, Rwanda*

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1.0 Introduction

Globally, there is a growing recognition of the significance of internal audits in promoting good governance and enhancing organizational performance. International standards and frameworks, such as the International Standards for the Professional Practice of Internal Auditing (Standards) issued by the Institute of Internal Auditors (IIA), provide guidance for internal auditors worldwide. Several scholars across the globe have carried out studies to assess the contributions of internal audit operational efficiency to the performance of public institutions, and their findings identify different contribution effects. For instance, Chen, Lin, Lu, and Zhou (2020) conducted a study in China to evaluate whether internal audit activities improve firm operating efficiency. They were curious whether there was a link between IAF independence and corporate operational effectiveness. Furthermore, they discover that strong provincial institutions and effective corporate governance at the firm level are both required for IAF quality to significantly boost firm operating efficiency. Through path analysis, the authors discover that an IAF can either directly or indirectly improve firm operational effectiveness by improving firm internal control quality. The study also indicated that internal audit efficiency ensures proper financial management, including budgeting, expenditure control, and financial reporting. It helps public institutions comply with accounting standards, improves financial transparency, and enhances the accuracy of financial statements.

Additionally, recent studies by Hoai, Hung and Nguyen (2022) in Nalukenge and Vietnam and Kaawaase, Bananuka and Ogwal (2022) in Uganda sought to find out the contributions of internal audits to enhancing accountability in public institutions. Their results indicated that efficient internal audit processes ensure that public institutions are accountable for their actions, decisions, and use of resources. It helps in identifying gaps, evaluating compliance with regulations, and improving transparency in operations. They also indicated that effective internal audit functions assist public institutions in identifying and mitigating risks. By evaluating internal controls, assessing potential risks, and recommending improvements, internal auditing helps reduce the likelihood of fraud, errors, and mismanagement. Internal auditing plays a critical role in detecting and preventing fraud, corruption, and unethical practices. It helps establish and monitor ethical standards, codes of conduct, and internal policies, ensuring compliance and fostering a culture of integrity within public institutions (Nalukenge *et al.*, 2022).

Developing countries like Rwanda are faced with lots of challenges in public administration, affecting service delivery because they collect taxes below the planned budget. Internal auditing is a critical function in public institutions, as it helps in assessing the effectiveness of internal controls, financial management, and compliance with policies and regulations. In Rwanda, internal auditing is governed by Law No. 44/2011 of 13/12/2011, which outlines the role and responsibilities of internal auditors within public institutions. These auditors are expected to provide independent and objective assurance to enhance the efficiency and effectiveness of operations. Ngoma District, situated in the Eastern Province of Rwanda, is home to various public institutions, including healthcare facilities, educational establishments, and administrative offices. These institutions are vital in delivering essential services to the local population. Effective internal auditing is crucial to ensuring these institutions operate efficiently, transparently, and in compliance with applicable laws and regulations.

One of the most pressing challenges facing internal audit units in Ngoma District is the severe lack of resources (Ndayisaba, 2018). These constraints manifest in various forms, including insufficient financial support, understaffing, and outdated technology. The scarcity of resources significantly hampers the internal auditors' capacity to perform their duties comprehensively and effectively. To effectively fulfill their roles, internal auditors require continuous training

and capacity-building initiatives. However, in Ngoma District, there is an evident absence of structured training programs for internal auditors. This gap in knowledge and skill development limits their ability to conduct audits in line with evolving best practices. Public institutions in Ngoma District occasionally grapple with issues related to compliance with laws and regulations. The lack of robust enforcement mechanisms and accountability structures contributes to instances of mismanagement, financial irregularities, and potential fraud. Internal audits play a pivotal role in identifying and rectifying these issues promptly (Ndayisaba, 2018).

1.1 Problem Statement

Odek and Okoth (2019) examined the impact of internal audit on the performance of public institutions is a growing body of literature, but there is a research gap specific to the effects of internal audit operational efficiency on the performance of public institutions in each individual country. Internal auditors are responsible for providing independent and objective assessments of an organization's processes and controls, identifying potential risks, and making recommendations to avoid malpractices. Despite the significance of internal audit in enhancing governance, risk management, and financial management, there is limited empirical research focusing on the specific context of Rwanda. Existing studies often provide a broader global perspective or examine the role of internal audit in developed countries, which may not fully capture the unique challenges and opportunities faced by public institutions in Rwanda.

A study by Appolinaire (2017) highlighted concerns about the deficiencies in Ngoma District's financial management due to the lack of efficient internal audit systems on cash collection. This has led some public service providers to view internal audits as unnecessary and irrelevant. There is a lack of comprehensive understanding of the extent to which internal audit operational efficiency affects the performance of public institutions in Rwanda. Mpakaniye and Paul (2022) pointed out that although internal audit plays a critical role in ensuring effective and efficient management of public resources, there is limited empirical evidence on the relationship between internal audit operational efficiency and the performance of public institutions in Rwanda. This knowledge gap has significant implications for policy and practice, as it limits stakeholders' ability to make informed decisions on improving the effectiveness of internal audit in public institutions in Rwanda and ultimately improving their performance.

1.2 Research Objective

The Study aimed to investigate the contribution of internal audit operational efficiency on performance of public institution in Rwanda. A case study of Ngoma District.

2.1 Theoretical Review

2.1.1 Project Monitoring Techniques

The foundation of this research was the Classical Organization Theory. The principles of organizational design and management are the main focus of classical organization theory, a management theory that arose in the late 19th and early 20th centuries. The need for more effective and efficient management techniques in big, complex organizations led to the development of the theory. The relevance and application of classical organization theory in contemporary organizations has been the subject of recent reviews. Some contend that the ideas of classical organization theory are out of date and inapplicable in the dynamic and complex business environment of today, while others maintain that these ideas are still relevant and can serve as a solid basis for contemporary management techniques (Haveman and Wetts, 2019). Haveman and Wetts (2019) assert that the division of labor, which entails breaking work up into smaller, more specialized tasks that can be completed effectively by various people, is one

of the fundamental tenets of classical organization theory. This idea has been criticized for fostering a dehumanizing and monotonous work environment, but it still has some application in contemporary organizations where certain jobs call for specialized knowledge and abilities. The hierarchical structure of organizations, with distinct lines of authority and control, is another tenet of classical organization theory. However, bureaucracy and sluggish decision-making can occasionally result from this structure.

2.2 Empirical Literature

2.2.1 Key internal control activities carried out in public institutions in Rwanda

Every organization's internal control system must include control activities. These initiatives aim to protect the organization's assets from theft, fraud, and misappropriation while also ensuring that the organization's goals are met successfully and efficiently. Organizations can reduce risks and ensure that they operate in an ethical, legal, and goal-oriented manner by implementing control activities. Apollo (2020) discovered a positive and significant relationship between the control environment and financial accountability, as well as a relationship between risk assessment and financial accountability and a relationship between control activities and financial accountability. The study by Ben-Caleb, Ademola, Oladutire, Sodeinde and Adegboyegun (2020) found that while the control environment and control activities have a beneficial impact on the likelihood of a business recording high operational performance, the internal control system's component parts have no discernible impact on the operating performance of SMEs). The following subsections present some of the key activities that support the process of internal audit operational efficiency in an organization.

Documentation

The act of documenting involves putting information about a certain topic, procedure, or product in writing. Users, stakeholders, and potential developers can utilize it to provide information, instructions, and guidance. Documentation comes in a wide variety of forms, including user manuals, technical specifications, design documents, help files, tutorials, and API documentation. A crucial quality control method in the audit environment is work paper review (Andiola, Lambert & Lynch, 2018). According to Safonova, Makarenko and Bershitskiy (2018) the importance of audit documentation is dictated by the requirement to give information on various audit procedure stages as well as to provide evidence that will support the auditor's conclusion. Aside from that, audit paperwork demonstrates that the audit was carried out in line with predetermined criteria, including both internal and external quality control of audit activities. The information that the auditor uses to establish the view that supports their finding is referred to as audit evidence. Information from the accounting records that serve as the foundation for the financial statements as well as other information constitute audit evidence (Lessambo & Lessambo, 2018).

In order to gather documents during auditing that come from any source and have no link to the audit's scope, documentation of audit paperwork is conducted. The planning, preliminary investigation, assessment of management control, substantive testing, reporting, and follow-up on the audit findings all come first in the auditing process (Purnayudha & Prasetya, 2019). The improvement of the documentation of the internal control process will result from the introduction of proposed types of documents. In a research to check into cash thefts, including cash stolen after it had been reported as revenue by a store accounting clerk, fake sales discounts, sales refunds, and sales voids were especially sought for. For instance, a staff member might inform a customer that the cash register is broken (Choo & Tan, 2022).

Approval and Authorization

According to a review, approval is the confirmation or endorsement of employee decisions, activities, or transactions. The manager signs the request to indicate approval of the purchase after finding that the item is necessary. Management should use the level of risk to which the organization may be exposed to determine which items require approval. The management of resources, planning, communication, and approval, as well as policies and procedures, all have an impact on how internal audit activities are governed (Zeki, Wulandari, Tresna, Fadhlun Ngoma, Districthman, Putri & Saudi, 2021)

Authorization is the power that management grants employees so they can carry out certain tasks with the support of superiors. Authorization is a control activity that ensures that decisions are made and transactions are completed by people who have been given permission by management. Only authorized parties should approve and carry out important events and transactions, and management should ensure that authorization conditions and terms are made clear and publicized. Prior authorization is frequently needed for certain services under commercial insurance policies (Sharma, Gustafson, Jagels & Wong, 2019).

A study by Le, Vu and Nguyen (2021) demonstrated a negative and substantial correlation between the adoption of internal control systems and low violation rates, but not with bribes given to public officials. In contrast, it indicates that internal control mechanisms and the application of codes of conduct reduce bribe payments but not legal violations. The establishment of internal controls is seen as making a beneficial contribution to improving accountability and reducing fraud (Saleh, Abu Hasan & Sofyani, 2022).

Verification

Verification is the process of judging a transaction, occurrence, or piece of information's completeness, accuracy, legitimacy, and/or validity. It is a control activity that enables management to confirm that tasks are being carried out in line with instructions. Management must choose what needs to be verified based on the risk to the organization if there is no verification. To aid in the system level verification activities, verification methodologies, verification levels, milestones, and limitations are presented as appropriate (Gonzalez-Herrera, Biancat-Marchet and Egner, 2018). The bank's profitability has improved as a result of the bank verification number policy's significant impact on the decline in the volume and dollar worth of fraud cases (Isibor, 2022). The reduction of internal control audit standards caused impacted banks to have a higher reported level of non-performing loans than unaffected banks, according to a study to look at how third-party verification of internal control over financial reporting affects bank supervision (Gopalan, Imdieke, Scgroeder and Stuber, 2019).

Supervision

Supervision is the act of managing or directing an activity to make sure the results meet predetermined goals. The work of people conducting the activity should be monitored, reviewed, and approved as necessary by those in charge of supervision to guarantee accuracy and proper flow; (Refer to the "Monitoring" section for details about the monitoring aspects of supervision). Assist in reducing errors and waste by providing the appropriate instruction and training, ensuring that staff members comprehend and comply with management's orders, and outlining the obligations and responsibilities placed on those executing the operations.

The downward trend in the control environment, risk assessment, and control activities indicates that internal control is significantly impacted by the quality of financial information and that communication between the audit and other corporate divisions is ineffective (Wang, 2019).

Separation of Duties

Separation of duties is the division of key tasks and responsibilities among the various employees and subunits of an organization. Comparatively speaking, the presence or absence of a division of tasks results in the same or greater likelihood of fraud, and for a separation of duties to consistently be an effective preventative control, 99 percent of frauds must be avoided. Moreover, collaboration lessens the efficiency of duty separation (BaNgoma District, Savage, & Im, 2020).

Safeguarding Assets

To safeguard assets is to restrict access to resources and information to help reduce the risk of unauthorized use or loss. Management should adequately protect the organization's assets, files, documents and other resources that could be wrongfully used, damaged or stolen. Internal control must both exist and be enforced by management for the control to safeguard assets (Ge, Li, Liu & McVay, 2021).

Reporting

Information is communicated through reporting. When anything prevents or lowers the likelihood that a negative occurrence will occur, it acts as a control. When reporting offers information on topics like timeliness, target attainment, budget status, and staff complaints, it helps with monitoring. Although it may be assumed that the audit of the statements of financial position solely relates to that data, the internal control system has a broad impact. As a result, its audit may have an effect on systems that are not specifically related to financial reporting (Gal & Akisik, 2020).

Control Activities for Computer Systems

According to Cohen, Krishnamoorthy and Wright (2020) application controls relate to specific tasks performed by the computer system. Their purpose is to provide reasonable assurance that data entered into the system is properly recorded, processed and reported. General and application control over computer systems is interrelated. If the general control is inadequate, the application control is unlikely to function properly and could be overridden. The application control assumes that the general control will function properly and provide immediate feedback on errors, mismatches, incorrect format of data, and inappropriate data access (by unauthorized persons). Therefore, general control supports the functioning of application control, and both are needed to ensure complete and accurate information processing. This information, and the discussion of Backup and Disaster Recovery, Input Controls and Output Controls that follows, is not meant to be a complete explanation of all computer-related control activities. Rather, it is intended to give non-systems managers who use computers in their operations and overview of basic computer-related control activities. Systems managers should seek further guidance on information technology (IT) security and control measures from sources such as Control Objectives for Information and Related Technology (CobIT) and Systems Auditability and Control (SAC). These resources have been developed to provide generally applicable and accepted standards for good practices for IT controls that provide a reference framework for management, users and auditors (Mwindi, 2018).

Backup and file Recovery

Backup and file recovery are essential components of any organization's data management strategy, and they can play a critical role in supporting internal audit processes. By ensuring that data is properly backed up and recoverable, organizations can help to ensure the accuracy and completeness of their financial and operational data, which is critical for effective internal audit (Jiang, Messier, & Wood, 2020). Jiang, Messier and Wood, (2020) prescribed some of

the ways that backup and file recovery can support internal audit to include the following: Data Integrity: Backups can help ensure that data is not lost due to system failures, human errors, or other technical issues. This is critical for maintaining the integrity and completeness of financial and operational data, which is essential for internal audit.

Data Retention: Backups can help organizations to retain data for a longer period of time, which is often required for compliance with regulatory and legal requirements. This can be helpful for internal audit, as it provides a historical record of financial and operational data that can be used for analysis and review. Disaster Recovery: Backups can play a critical role in disaster recovery, ensuring that organizations can recover data in the event of a natural disaster, cyber-attack, or other unexpected event. This is important for internal audit, as it helps to ensure that critical financial and operational data is not lost in the event of a disaster (Sicard, 2019).

Input Controls

Input controls help ensure that the data ready for processing has been authorized and converted into a machine-readable format. In addition, these controls enable the user to determine whether any data has been lost, suppressed, added, duplicated or otherwise improperly altered. Examples of input controls are: Edit checks programmed into software such as: error listings, record counts, sequence checks, validity checks and hash totals; Key verification, which entails re-keying the input and comparing the results; redundancy checks, which require sending additional data to serve as checks on other transmitted data; Echo checks which verify transmitted data by sending data back to the user's terminal; and Completeness checks, which verify whether all necessary information has been sent (Ogneva & Raghunandan, 2017).

Control Output

Output controls ensure that system generated information is accurate and that only authorized users receive this information. Examples of output controls are: The daily proof account activity listings, which show changes, made to the master file. Managers should review activity listings to ensure that only accurate, authorized changes have been made; Error listings indicating data that could not be processed by the system. Managers should ensure that this data is reviewed, corrected and resubmitted for processing; Distribution registers that list the people authorized to receive reports and other information from the system. Management should periodically review the register to ensure its accuracy; End-of-job markers which should appear on the last page of system generated reports. The presence of these markers helps users of a report to verify that they have received the entire report; and a quality assurance review of output by system users. This process can help those who input the data to verify that the output is complete and reasonable (Abiodun, 2020).

Monitoring Responsibilities and Duties

Monitoring is the review of an organization's activities and transactions to assess the quality of performance over time and to determine whether controls are effective. Management should focus monitoring efforts on internal control and achievement of organization objectives. For monitoring to be most effective, all employees need to understand the organization's mission, objectives, and responsibilities and risk tolerance levels. Everyone within an organization has some responsibility for monitoring. The position a person holds in the organization helps to determine the focus and extent of these responsibilities. Therefore, the monitoring performed by staff persons; supervisors, mid-level managers and executive managers will not have the same focus (Shonhadji & Maulidi, 2022).

Monitoring staff activities

The major focus of personnel should be on checking their own job to guarantee correct completion. They should repair any flaws they find before referring work to higher levels for evaluation. Management should educate employees about control operations and encourage them to be on the lookout for and report any abnormalities. Staff has the best vantage point for recognizing any flaws with existing control activities because they are involved in the intricacies of the organization's daily operations. Management should also urge employees to keep an eye out for changes in their immediate internal and external contexts, detect risks, and report possibilities for improvement (Christ, Eulerich, Krane & Wood, 2021).

2.2.2 The role of internal audit operations in identifying and assessing risks

According to a study by Al-Waeli, Hanoon, Ageeb and Idan (2020), accuracy, verifiability, and timeliness have a big impact on financial success. Despite having no appreciable impact on the significance of financial performance. It was discovered that internal control significantly influenced the relationship between financial performance, accuracy, and relevancy.

Accountability, openness, and information protection of public property against fraud risks are all greatly aided by high-quality internal audit. Internal auditing standards, internal auditor independence, and good governance have a major impact on a bank's financial performance, but internal audit committee size and frequency of meetings have little to no positive effect on a bank's performance (Al-Kuhali, Hazaea, Tabash, Khatib & Zhu, 2020). Compared to private institutions, the majority of public institutions in the world perform poorly financially. Financial management practices might be held responsible for the subpar financial performance. Strong internal audit control systems are necessary for the institutions to implement sound financial management practices (Muhunyo & Jagongo, 2018).

Financial performance can be significantly predicted by working capital management. Internal control systems do not, contrary to popular belief, strongly predict financial performance. Hence, firms are more likely to have adequate internal control systems that improve financial performance after they have proper working capital management (Kabuye, Kato, Akugizibwe & Bugambiro, 2019). Internal control systems and effective village governance and financial reporting have major concurrent effects (Manurung, Sujana & Saputra, 2020). An analysis of the impact of internal audit functions on financial performance concluded that these functions have an impact. Mark Wanyama and Gedion, (2021) pointed out that the internal auditor's responsibility is to attest to the effectiveness of the company's internal control, governance, and risk management systems. There is research linking internal audit functions and financial success (Midecha, 2022). To ensure effectiveness, monitoring constantly replaces outdated procedures and practices related to internal control systems. Moreover, a crucial factor affecting financial performance is the control environment, which is a component of internal control systems (Ouko & Atheru, 2022).

2.2.3 The contributions of internal audit operations in detecting and deterring fraudulent activities

Internal audit is crucial to corporate management, but because public interest organizations—especially listed ones play such a significant role in society, it has also become clear that they need it in a broader context. As the economy has become more digitalized, the internal audit profession has faced the same issues as all other professions worldwide (Botez & Melega, 2020). A constant state of change is what distinguishes the industrial environment. As a result, the demands for manufacturing and the associated procedures are ever-evolving (Schmidtke, Behrendt, Thater & Meixner, 2018).

For central banks and other public sector organizations, a research by Polizzi and Scannella, (2023), identifies many implementation obstacles and suggests suitable solutions. According to the report, they are correlated with institutional rigidity, potential risks to the independence of internal auditors, and the issue of recognizing AC systems as "real time error correction" mechanisms. Inspectors typically find flaws in global group audits that can be traced to issues with coordination and communication between the many participating firms. The costs of an audit failing are considerable since global group audits involve huge multinational organizations with extensive global reach (Downey & Bedard, 2019).

As can be expected, technical advancements are essential for the creation of a successful digital auditing system. It was discovered that staff skills and training, as well as data protection measures against cyber threats, had a substantial impact. According to Lois, Drogalas, Karagiorgos and Tsikalakis (2020), accounting is a traditional profession whose laws and regulations has been in place for many years and has not changed. Yet, the accounting industry is also being impacted by economic globalization, stricter laws, and new technology innovations. The necessity for quick adaptation and transformation of company practices and business processes without straying from fundamental accounting laws and principles reflects challenges for the accounting profession (Gulin, Hladika & Valenta, 2019).

Employee resistance to internal control implementation is possible because they may think the system is obtrusive or unneeded. Employees' employment of active and passive resistance strategies to thwart workplace change is one component of behavioral problems. Hence, variables that increase employee resistance to change may have a detrimental impact on an agency's capacity to remain effective and audit ready (Cronkhite, 2020). Internal control systems need to be monitored frequently to make sure they put more of an emphasis on efficiency and effectiveness when conducting internal audits of finances. The study by Mertzanis, Balntas, and Pantazopoulos (2020) focused on the board's insufficient oversight role in internal audit finance, though. They think that because of the members' insufficient knowledge and skills, audit committees struggle to undertake effective monitoring.

2.2.4 Effective audit system and operational efficiency

Internal control mechanism is a general phrase for the procedures, regulations, and institutions that were employed to regulate operations. It seeks to accomplish company goals and strengthen the bond between shareholders. As a method that is used to resolve issues between principal and agent in a corporation, it also emphasizes the responsibility of the individual (Alabdullah & Maryanti, 2021). Internal audit function proficiency, internal audit quality control assurance level, follow-up procedure, and committee participation in analyzing the internal audit program and findings are all significantly and favorably correlated with internal control quality (Oussii & Boulila Taktak, 2018). For SMEs to succeed, internal control mechanisms and performance impacts are essential. E-accounting must be offered by SME in order for the internal control system to be effective and work well (Alfartoosi & Jusoh, 2022).

Employee performance is anticipated to be impacted by internal control. Internal control has a high positive correlation with both staff performance and the accounting information system (Al-Awaqleh, 2021). Internal audit and accounting information system have a positive and significant effect on the effectiveness of internal control, (Yusuf & Kanji, 2020). Improved internal controls over operation, reporting, and compliance are made possible by the internal audit function (Chang, Cheng, Cheng & Chi, 2019). Similar to other information systems, the accounting information system is crucial to the day-to-day management and operations of cooperative businesses. Improved management practices are required to ensure the efficacy and effectiveness of internal control. Companies perform better thanks to the effectiveness of the accounting information system (Al-Waeli, Hanoon, Ageeb & Idan 2020).

Internal control methods increase the aggressiveness of innovation, which increases organizational performance (Hoai, Nguyen & Hung, 2022). The quality of financial reporting and deficiencies in internal control have a clearly inverse relationship. Or to put it another way, poor internal control reduces the quality of financial reporting (Dashtbayaz, Salehi & Safdel, 2019). Both businesses and consumers of financial accounts often face the problem of accounting fraud. Weak internal controls are often the cause of accounting fraud. In contrast to people with high morals, people with low morals are more likely to commit accounting fraud (Setiawan, 2018). Asset theft is a form of fraud that can have a serious negative impact on businesses. Management's internal control system is expected to provide a verifiable level of assurance regarding the prevention and detection of fraud, such as: B. asset theft, offers (Ha Le & Tran, 2018). The quality of the internal control system and the accounting information system has a direct impact on the quality of financial reporting. In addition, the usefulness of financial information is influenced by the quality of financial reporting, which mediates the relationship between the usefulness of financial information and the information system (Monteiro, Vale, Silva & Pereira, 2021).

3.0 Methodology

Using the Ngoma District as a case study, the study sought to determine how internal audit operational efficiency affected public institution performance in Rwanda. The 120 staff working at the Ngoma District head office in Kigali were the target population; 92 of them were selected as a sample. Structured questionnaires were used to collect primary data, and reports from the Ngoma District and other online resources were used to collect secondary data. Data collected from the primary source was gathered, sorted, edited for precision and clarity, coded into a coding sheet, and then subjected to statistical product and service solutions (SPSS 22.0) for analysis. Frequency tables and percentages were used to measure specific objectives during the data analysis process. Additionally, the relationship between the study's identified variables was measured using Pearson's correlation. The mean, standard deviation, and frequency tabulations were used to present the results for the sample characteristics; Spearman's correlation analysis was used to present the relationships between the study variables, which are internal audit and operational efficiency in Rwanda.

4.0 Findings and Discussions

Main internal control activities undertaken in public institutions in Rwanda

The respondents were requested to indicate main internal control activities undertaken in public institutions in Rwanda. The results are shown in Table 1.

Table 1: Main internal control activities undertaken in public institutions in Rwanda

| | Mean | Std. Deviation |
|-------------------------|--------|----------------|
| Financial reporting | 4.5581 | .69629 |
| Budgeting | 4.2442 | .73462 |
| Internal controls | 4.2674 | .69323 |
| Performance measurement | 4.3953 | .69076 |
| Technology | 4.5698 | .72826 |
| Valid N (listwise) | | |

Source: Researcher, (2023)

The results in Table 1 reveal that financial reporting, budgeting, internal controls, performance measurement and technology are the key areas of focus for internal control activities in public institutions. The mean scores for each activity are relatively high, indicating a significant emphasis on these aspects. Financial reporting obtained the highest mean score of 4.56,

followed closely by technology and performance measurement with mean scores of 4.57 and 4.40, respectively. Budgeting and internal controls also received commendable mean scores of 4.24 and 4.27. The narrow standard deviation values (ranging from 0.69 to 0.73) suggest that the respondents' ratings were consistent for each internal control activity. The survey results show high mean scores for Rwandan public institutions' commitment to transparency, accountability, and efficiency through robust internal control practices. Financial reporting is crucial, with institutions adhering to international accounting standards and rigorous audits. Budgeting is a meticulous process, aligning with the country's development goals. Internal controls are multifaceted, preventing errors, fraud, and misuse of resources. Performance measurement is used to evaluate effectiveness and efficiency, using Key Performance Indicators (KPIs) and performance contracts. Technology plays a pivotal role in enhancing internal controls, with Rwanda adopting electronic financial systems, data analytics, and digital platforms for reporting and information sharing. This digital transformation reduces human error and improves reporting speed and accuracy.

Internal audit operations in identifying and assessing risks

The study sought to establish the respondents' knowledge of role of internal audit operations in identifying and assessing risks within a public institution's operations. The results are shown in Table 2.

Table 2: Role of internal audit operations in identifying and assessing risks

| | Mean | Std. Deviation |
|---|--------|----------------|
| File Verification, approval and Authorization | 4.3140 | .46682 |
| Control Activities for Computer Systems | 4.2907 | .70069 |
| Backup and file Recovery | 4.5000 | .68169 |
| Monitoring staff activities responsibilities and duties | 4.3488 | .86456 |
| Valid N (listwise) | | |

Source: Researcher, (2023)

Table 2 reveals that the respondents have a relatively high level of knowledge regarding the role of internal audit operations in risk identification and assessment within public institutions. The mean scores for each internal audit activity are above 4, indicating a strong understanding of these aspects.

File Verification, approval and Authorization obtained the highest mean score of 4.31, followed closely by Backup and file Recovery with a mean score of 4.50. Control Activities for Computer Systems and Monitoring staff activities, responsibilities and duties also received commendable mean scores of 4.29 and 4.35, respectively. The narrow standard deviation values (ranging from 0.47 to 0.86) suggest that the respondents' knowledge ratings were relatively consistent for each internal audit activity. The survey results show that respondents recognize the importance of internal audit operations in identifying and assessing risks within public institutions. They emphasize the need for activities like file verification, computer system control, backup, and file recovery, as well as monitoring staff responsibilities. These operations help prevent unauthorized access and fraudulent activities, ensuring data security and confidentiality. In the digital age, auditors evaluate control activities to ensure data security, confidentiality, and integrity. They also assess backup and file recovery procedures to ensure critical data is retrieved in case of unforeseen events. Internal audit operations also help maintain staff accountability and efficiency by identifying potential areas of mismanagement, underperformance, or misconduct, minimizing risks related to internal fraud, resource misallocation, and operational inefficiencies.

Internal audit operations and compliance with laws, regulations and internal policies

The study sought to establish the effects of internal audit operations on ensuring compliance with laws, regulations and internal policies. The respondents were asked to rate the various aspects of internal audit operations on the scale of 1 to 5 with 1 indicating the lowest level and 5 representing the highest level of impact. The results are shown in Table 3.

Table 3: internal audit operations and compliance with laws, regulations and internal policies

| | Mean | Std. Deviation |
|---|--------|----------------|
| Internal audit staff conduct regular audit activities in our Institution | 4.4302 | 1.03515 |
| Internal audit report address weaknesses in our internal control System | 4.6163 | .65383 |
| Internal audit reports are produced regularly | 4.5349 | .83592 |
| Internal audit department visits up-country centers often times | 4.4884 | .94239 |
| Internal auditor performs his duties with a greater degree of autonomy and independence from management | 4.5698 | .54321 |
| Valid N (listwise) | | |

Source: Researcher, (2023)

Table 3 indicates that respondents generally perceive positive effects of internal audit operations in ensuring compliance. The mean scores are relatively high for all aspects, ranging from 4.4302 to 4.6163, suggesting that internal audit staff conduct regular audit activities, address weaknesses in the internal control system through their reports, produce reports regularly and visit up-country centers often. Additionally, respondents also believe that internal auditors perform their duties with a greater degree of autonomy and independence from management, as indicated by a mean score of 4.5698.

These findings suggest that internal audit operations play a crucial role in ensuring compliance with laws, regulations and internal policies within the public institution. The positive perceptions of the respondents indicate that the internal audit department is effective in identifying and addressing weaknesses in the internal control system, thereby contributing to improved compliance and governance within the organization.

Internal audit operations in detecting and deterring fraudulent activities

The respondents were asked to indicate the contributions of internal audit operations in detecting and deterring fraudulent activities within a public institution. The results are shown in Table 4.

Table 4: internal audit operations in detecting and deterring fraudulent activities

| | Mean | Std. Deviation |
|---|--------|----------------|
| Appropriate measures are taken to correct malpractices in of our Accounting & Finance Management System | 4.5233 | .64583 |
| Code of ethics in organization is observed strictly and this is followed up by management | 4.6047 | .61890 |
| Ethical values are upheld in all management decisions | 4.6163 | .67158 |
| Valid N (listwise) | | |

Source: Researcher, (2023)

Table 4 , shows that majority of the respondents strongly agreed with the suggested variables as indicated by the mean score 4.5233, indicates that respondents believe that internal audit operations play a significant role in taking appropriate measures to correct malpractices in the Accounting & Finance Management System. The relatively low standard deviation of 0.64583 suggests that there is a general agreement among the respondents regarding the effectiveness of internal audit operations in addressing malpractices.

The mean score 4.6047, shows that the respondents perceive that the organization strictly observes its code of ethics and management effectively follows up on its implementation. The relatively low standard deviation of 0.61890 indicates a consensus among the respondents regarding the organization's commitment to ethical practices.

The mean score 4.6163, demonstrates that respondents believe that the organization upholds ethical values in all management decisions. The relatively low standard deviation of 0.67158 suggests that there is a general agreement among the respondents regarding the organization's commitment to ethical decision-making.

Effective audit system and operational efficiency

The study sought to establish the impact of effective audit system on operational efficiency in public institutions in Rwanda. The results are shown in Table 5.

Table 5: effective audit system and operational efficiency

| | Mean | Std. Deviation |
|--|--------|----------------|
| Risk detection and assessment | 4.5581 | .54459 |
| Compliance with laws, regulations, and internal policies | 4.4884 | .73154 |
| Detecting and deterring fraudulent activities | 4.4884 | .79327 |
| Operational efficiency in public institutions | 4.6395 | .55121 |
| Valid N (listwise) | | |

Source: Researcher, (2023)

Table 5, reveals that the mean score 4.5581, indicates that respondents believe that internal audit operations are effective in detecting and assessing risks within the institution. The relatively low standard deviation of 0.54459 suggests that there is a general consensus among the respondents regarding the effectiveness of internal audit in risk management.

The mean score 4.4884, demonstrates that respondents perceive that internal audit operations contribute to ensuring compliance with laws, regulations, and internal policies within the public institution. The standard deviation of 0.73154 indicates some variability in responses but overall, respondents acknowledge the role of internal audit in compliance.

The mean score 4.4884, shows that respondents believe that internal audit operations play a significant role in detecting and deterring fraudulent activities within the institution. The

standard deviation of 0.79327 suggests some variation in responses, but the overall perception is positive.

The mean score 4.6395, is indicating that respondents believe that internal audit operations contribute to improving operational efficiency within the public institution. The relatively low standard deviation of 0.55121 suggests a high level of agreement among the respondents regarding the role of internal audit in enhancing efficiency.

5.0 Conclusions

The study revealed a robust and statistically significant association ($r = .711^{**}$, $p < 0.01$) between staff monitoring and the operational efficiency of public institutions, underlining the critical role of accountability and supervision in streamlining processes and resource allocation. These findings collectively emphasized the significance of comprehensive internal audit practices and controls in enhancing the performance, governance, and effectiveness of public institutions in Ngoma district.

In addition, the research findings highlighted the effectiveness of internal audit operations in Rwandan public institutions, showcasing their commitment to risk management, compliance, fraud prevention, and operational efficiency. Additionally, the study underlines the importance of diversity in education and experience within these institutions and emphasizes their focus on key areas critical for internal control activities, thus contributing to their overall effectiveness and accountability.

6.0 Recommendation

Based on this research findings and conclusions, the following recommendations are put forth:

This study suggests that public institutions should invest in continuous training and professional development for internal audit staff to ensure they remain effective in their roles. Additionally, the study also suggests that greater autonomy and independence for internal audit functions should be encouraged to facilitate objective assessments. This study suggests that public institutions should continue to strictly enforce their code of ethics, ensuring that ethical values are upheld in all management decisions.

This study suggests that public institutions should explore opportunities for streamlining processes and enhancing operational efficiency, guided by the findings that internal audit positively impacts efficiency. This study suggests that public institutions should continue to implement gender-inclusive policies to align with the demographic composition of Rwanda's population. This study suggests that employees should be encouraged to pursue further education and professional development to enhance their qualifications and skills.

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