

Research Article

Comparative Study on the Usage of Information Technology (It) On Internal Control Systems (Ics) In Private and Public Secondary Schools in Arumeru District

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ABSTRACT: The main aim of this study was to compare the Usage of Information Technology (IT) on Internal Controls System (ICS) in Private and Public Secondary Schools in Arumeru District of Arusha Region in Tanzania. This research adopted causal research design approach. The findings revealed that majority of the respondents disagreed with application of information technology on internal control systems in their schools. The results from private schools showed that the application of information technology on Internal Control Systems was higher while those of public schools showed that the application of information technology on Internal Control System was lower. The results further revealed that Internal Control System take place among Public and Private Secondary Schools in Arumeru District.

The findings revealed that, the independent sample t –test indicates that the Sig. of .000 is less than the critical value (.005) which implies that the difference of mean scores between public and private schools was significant. This implies that private schools are doing better in the application of information technology on internal control system than their public school counterparts. Therefore, the null hypothesis was rejected and maintained that there is a significant difference in the application of Information Technology on Internal Control System (ICS) in Arumeru District by school stakeholders categorized according to type of schools.

The researchers recommend that schools should increase their budget to support information technology in public secondary schools to enhance their IT facilities, qualified personnel in the usage of information technology, and up to date software for internal control system. Further the researchers recommend that future researchers should research on the usage of IT in teaching.

Key Words: Accounting, Internal auditing, Information System, Internal Control System, Information Technology, Financial report.

Introduction

Rapid changes of technology have changed the way organizations conduct businesses, promote operational efficiency and aid in decision-making. This technology has improved processing time and reduced paperwork. There are also the internet and computer networking that allows one to email files from one place to another without having to transport loads of document. This reduction of paperwork is a blessing according to Yang and Guan (2004).

A study carried out by Papadatou, (2005) and Karagiorges (2006) that the usage of Information Technology (IT) on Internal Control System (ICS) in public and private schools contribute the improvement of risk management and the improvement of the effectiveness in Internal Control System (ICS) in secondary schools by using these five internal control components (Control Environment, Risk Assessment, Control Activities, Information and Communication and Monitoring) These are providing a reasonable level of confidence that the controls are functioning as intended when are monitoring well.

Currently organizations worldwide are replacing the usage of hardcopy documents in the internal controls systems as

they are costly and provide little benefit over an electronic version of the information. However, Internal Controls Systems (ICS) using IT is facing a number of challenges with the advancing of technology including:-keeping accounting data and records in computer management, difficulties in tracking data operations, computer software are costly, poor internet and networking infrastructures, lack of safety, protection of data, and blocking unauthorized access to physical and logical system components. This requires analyzing and evaluating the risks surrounding the field in the process of constructing and developing information systems, and regulatory regimes to prevent errors and irregularities in Internal Control System (ICS) that may result from the risk of control and poor organizational performance, (Tiittanen, 2001). Tiittan, (2001) in addition, affirms that Internal Control Systems (ICS) using Information Technology (IT) in most of private secondary schools that receive external funding are subjected to rigorous internal control in line with the donor agency requirements. Private and Public secondary schools which exhibit internal control deficiencies may risk losing the much needed funding from the donors as they are accountable to them as well as the beneficiaries, the

employees and other stakeholders, (Hermanson, 2003).

Research on Information Technology (IT) to enhance better Internal Control System (ICS) has recently gained interest in literature (Ahmed & Rafiq, 2003). The study by Lotto (2014) on the Impact of Information Technology on Internal Auditing Effectiveness, in Tanzanian organizations; revealed that internal audit profession in Tanzania lags behind in using information technology effectively to support their duties. Khalil (2013) examined the effect of using Information Technology (IT) on Increasing the Efficiency of Internal Auditing Systems in Islamic Banks operating in Jordan. The study found numerous results that show a positive impact of using Information Technology on the independency and privacy of internal auditing in Islamic banks operating in Jordan.

Wang (2011) carried out a research on the impact of information system (IS) on Internal Control System (ICS). The study was carried in Chinese listed companies in China. The results showed that higher level of information technology leads to higher organizational operation efficiency and effectiveness and better performance in law-abiding, including the usage of Information System (IT) in Internal Control System (ICS).

Research Questions

The study will be guided by the following specific research questions:

1. To what extent the usage of Information Technology (IT) on Internal Control System (ICS) take place among Public and Private Secondary Schools in Arumeru District?
2. Is there a significant difference in the application of Information Technology (IT) on Internal Control Systems (ICS) in Arumeru District by school stakeholders categorized according to Public and Private Schools?
3. To what extent Internal Control System (ICS) take place among Private and Public Secondary Schools in Arumeru District?
4. Is there a significant relationship between the application of Information Technology and Internal Control System among secondary schools in Arumeru District?

Hypothesis

There is no significant difference in the application of Information Technology (IT) on Internal Control System (ICS) in Arumeru District by School Stakeholders categorized according to Public and Private Schools

REVIEW OF RELATED LITERATURE

Research on IT to enhance better ICS has recently gained interest in literature (Ahmed and Rafiqet (2002). Lemuria.

(2012) carried out a research on the impact of information technology internal controls on firm performance in business organization in U.S.A. The search revealed that, firms with strong internal controls perform better than those with internal control weaknesses. Maintaining proper controls over information technology is a constant concern for businesses as they try to use technological advances to drive efficiency and growth.

Akosile, (2013) conducted a research on empirical study on a comparative assessment of Internal Control System in Public and Private Universities. The study was carried in South-West, Nigeria. The results of the analysis showed that Internal Control System is in place in both public and private universities. However, in private universities, Internal Control Systems (ICS) are characterized by distribution of staff manual containing internal control procedures and directives while same is lacking in public universities. It could also be concluded that, Internal Control System in public and private universities are the same and both private and public universities experience similar fusion of duties. Findings of the study also lead to the conclusion that ICS is effective in reducing costs and monitoring in both private and public universities.

Krishna, Seetharaman, Meyyappan and Lee (2011) conducted a research in Malaysia, on the role of information technology and how it affects internal audit process in the organization. The study also addresses how technology, Information System (IS) and electronic data processing (EDP) have changed the way organizations conduct its business, promoting operational efficiency and aid decision-making. It also spotlights many aspects of IT risks and controls and highlights whether the right people are overseeing IT risks to the degree they should. The findings showed that effective use of audit technology tools is critical to the success of audit activity. Specifically, ICS in private universities is effective in attainment of goals, management and effectiveness review and detection of irregularities. But ICS is not effective, for the same constructs; in public universities. (Channar, 2015) conducted a research on Internal Control Effectiveness and ITS Relationship with Financial Performance in Kararachi. The findings indicated that Internal Control Effectiveness is strongest in private Banks, followed by public Banks and weakest in Islamic Bank, although the difference is not statistically large, but slight variation exists. Moreover, private Bank had a high level of financial performance; public Banks had moderate level of financial performance whereas Islamic Banks were found to have low financial performance. (Tang, 2011) conducted an empirical study of the effectiveness of internal control over financial reporting: the effect of audit committee quality and participation in IT governance in Hong Kong, China. The findings provide useful empirical evidence for the Hong Kong regulators and policy makers on the evaluation and improvement of corporate governance regulations. The research also provides insights into the

development of requirements for internal controls over financial reporting for professional accounting.

Wang (2011) carried out a research on the impacts of Information Technology (IT) on Internal Control System (ICS) in China. The results showed that higher level of Information Technology leads to higher organizational operation efficiency and effectiveness and better performance in abiding with the law, including the usage of Information Technology (IT) in Internal Control System (ICS). However, the impact of Information Technology on financial reports' reliability was not significant as expected.

Krishna, Seetharaman, Meyyapan and Lee (2011) conducted a research in Malaysia, on the role of information technology and how IT affects internal control (control environmental, risk assessment, control activities, information and communication and monitoring) and provides guidelines and best practices in evaluating techniques available to effectively perform auditing tasks internally in the organization. The study also addressed how technology, Information System (IS) and Electronic Data Processing (EDP) have changed the way organizations conduct its business, promoting operational efficiency and aids decision-making. It also spotlights many aspects of information technology risks and controls and highlights whether the right people are overseeing information technology risks to the degree they should. The findings showed that effective use of audit technology tools is critical to the success of audit activity, but is only one step toward understanding the changes technology is bringing about in business and the auditing profession. It indicated that emerging technologies will continuously change the shape of and approach to business controls, audit approaches and techniques must also change. According to Cook and Winkle (1976) the Internal Control System resembles the human nervous system which is spread throughout the schools (business) carrying orders and reactions to and from the management. In this concept by measuring and evaluating the effectiveness of organization controls. In today's business environment Internal Control System is now providing management with a far broader range of Information Technology concerning the organizations financial, operational and compliances activities to improve effectiveness, efficiency of management performance and activities (Rezaee, 1996). (Chen, 2004) examined the role of firm Information Technology (IT) capability in contributing to internal control and external audit and found result which support the concern that accounting professionals have regarding the impact of the use of Information Technology (IT) on audit, the authors reports that Information Technology (IT) capability has pervasive impact on both the effectiveness of internal control and the components of effective internal control. The findings of (Chen, 2004) suggest that a firm's Information Technology (IT) capability has the additional benefits of supporting the functioning of internal control and the efficiency of the audit process.

According to Galbous, (2004) Information Technology plays an important role in Internal Control System (ICS) and helps the management of organization fulfill its duties by strengthening controls. In addition, internal control includes ascertaining the quality and accuracy of operations, financial information and reports, efficiency of Internal Control System (ICS) and eliminating its weakness, preventing mistakes, the management benefits from this part in accurate performance of responsibilities and suitable decisions. Information Technology (IT) improves the report presentation time and up-to-dated it.

Tucker (2001) Yang and Guan (2004), says that Information Technology (IT) and Electronic Data Processing (EDP) have changed the way organization conduct its business promoting operational efficiency and aid decision making. Godwin (2004) has compared features of the internal audit function between organizations in the private and public sector. The study is based on a survey done in Australia and New Zealand organizations, survey was done to indicate the length of time spent by respondent in internal audit process and it has appeared that internal audit has a higher status in the private sector rather than public sector entities particularly in Information Technology (IT). Information Technology (IT) helps its users improve their performance and enable its user's increase their benefit and their duties with higher quality by using it. Also results shows that using Information Technology (IT) causes auditor to spend less time on probing and performing content tests and accuracy of mathematical calculations of office accounts rapidly (Galbous, 2004).

According to Mwakalinga (2005) worked out on the effectiveness of internal audit function in development project in Tanzania. Mwakalinga selected TASAF as one among development projects implemented in the country. The internal audit independence, professional proficiency, objective of internal audit, management of internal audit department, planning and performance of audit, audit findings as well as audit reports were evaluated to investigate the effectiveness of internal audit function on TASAF supported and sub-projects. The findings revealed that, there was a general feeling by the management group that the internal audit function was independent and was performed by competent staff, to the standard. However, the management was concerned that the auditors were not sufficient, did not have enough resources and working facilities to carry out their work effectively, and some lacked of IT skills and did not share their reports with the management. It was also found out that auditor's effectiveness was affected by the fact that they had little experience in auditing activities at the community level. Also they did not have sufficient working facilities and funds, they lacked adequate skills for auditing computerized system and they did not get sufficient management support in planning performing and reporting their works.

RESEARCH METHODOLOGY

Research Design

This research adopted causal research design approach. The causal research design helped the researcher to make a comparative study on the usage of Information Technology (IT) on Internal Control Systems (ICS) in selected private and public secondary schools in Arumeru district.

Area of the Study

The study was conducted in Arumeru District in Arusha region which is located in the Northern part of Tanzania. The place is having good communication system so it was easy to get information and collect data from the respondents. The targeted respondents were: -teaching staff and non-teaching staff in a selected private and public secondary school in Arumeru District. This study targeted a population of ten schools, five private and five public secondary schools.

Data Collection Instruments

A questionnaire is a data collection tool in which each person is asked to respond to the same set of questions in a predetermined order (Saunders et al., 2003). The researcher designed a questionnaire which was focusing on two groups of 38 respondents: teaching staff and non-teaching staff. The aim of using this method is to get broad-based views from these groups of respondents.

DATA ANALYSIS, INTERPRETATION, AND DISCUSSION

Research Question 1:

To what extent does the application of information technology (IT) on Internal Control System (ICS) take place among the Secondary Schools in Arumeru District?

The mean score of the research respondents is presented in table 1 below:

Table 1: Mean Scores of the Application information technology

S/N	Items	Mean Score	STD DEV.	Interpretation
1	My school has enough facilities and infrastructures to support IT application on ICS	2.8346	.82413	Disagree
2	My School has qualified personnel in the usage of IT for internal control systems	2.3898	.89089	Disagree
3	My School has up to date software for ICS	2.6692	.79497	Disagree
4	There is a good cooperation between IT and ICS	2.3519	..75629	Disagree
5	The top management supports the usage of IT on ICS	2.5472	.97203	Agree
6	There is a limited budget to finance IT	2.5306	.73886	Agree
7	There is regular training for IT and in my School	2.4118	.96284	Disagree

Means Score Interpretation: 3.50-4.00 Strongly Agree (High): 2.50-3.49 Agree (Average): 1.50-2.49 Disagree (Below Average): 1.00-1.49 Strongly Disagree (Low).

In order to determine the extent to which the application of Information Technology (IT) on Internal Control System (ICS) takes place, it was necessary to test seven items as rated by research respondents. According to information provided in Table 1 above, the study revealed that respondents disagreed with their schools having enough facilities and infrastructure to support the application of information technology on internal control systems. The mean and standard deviation was (M=2.4386, SD=.82413). This means that majority in public and private school disagreed that their schools had no enough facilities.

The findings revealed that respondents disagreed with the statement that their schools had qualified personnel in the usage of information technology for internal control

systems. Their mean and standard deviation was (M=2.3898, SD .089089). This indicated that public and private Schools lacked enough and qualified personnel. The mean and standard deviation for those who disagreed with the statement that their schools had up to date software for ICS was (M=2.2692, SD= .75629) respectively. It means that these schools have no up to date software to be used in Internal Control Systems. The table also indicates that the mean score and standard deviation for those who disagreed with the statement that there is a good cooperation between IT and ICS was M = 2.3519 and SD = .75629. This implies that there is no cooperation between information technology and internal control system. The management needs ensure that the two departments are well coordinated in order to enhance the use of IT on internal control systems.

The table 1 further indicates that the respondents agreed that top management supports the usage of IT on ICS by a mean score of 2.5472 and standard deviation of .97203. This

implies that the usage of IT on internal control systems is good. The respondents also agreed that there is a limited budget to finance IT. This shows that the top management needs to increase the budget to support information technology so that schools should have facilities, qualified personnel in the usage of information technology, and up to date software for internal control system.

Finally the respondents disagreed with the statement that there is regular training of IT in their schools with a mean score of 2.4118 and standard deviation of .96284. Lack of training makes the IT staff ineffective and inefficient in performing their duties. Management should train IT staff in order to increase their efficiency and increase the usage of IT on internal control systems. According to Cook and Wincle (1976) it is important to apply information technology in internal control system for effective performance. Also the research conducted in Malaysia on

the role of information technology and how it affects the internal control in organization showed how information technology (IT) has changed the way organizations conduct their businesses, promoting operational efficiency and aids in decision making (Krishna, 2011).

Research Question 2:

Is there significant difference in the application of Information Technology on Internal Control System (ICS) in Arumeru District by school stakeholders categorized according to type of schools?

Due to inadequate application of information technology on internal control system in research question number 1, it was deemed necessary to test the differences in the application of IT between public and private schools under the following interpretations:

Table 2: Comparative Perception on the Application of ICT by Private and Public School

	School	NO.	Mean	Std. Deviation	Std. Error Mean
Application of Information Technology	Private	30	2.9813	.22537	.04115
	Public	30	1.8309	.50349	.09350

Means Score Interpretation: 3.50-4.00 Strongly Agree (High); 2.50-3.49 Agree (Average); 1.50-2.49 Disagree (Below Average); 1.00-1.49 Strongly Disagree (Low).

In table 2: results of respondents from private schools A, B, C, D, E shows that the application of information technology on Internal Control Systems higher (M=2.9813, SD= .2537) while those of respondents from public schools D, E, F, G, H showed that the application of information technology on Internal Control System was lower compared with that of private schools (M=1.8309, SD= .50349). This reveals that internal control system is more applicable in the private sector than in the public sector entities (Godwin, 2004), (Papadatou, 2005), and (Karagiorges, 2006) by saying that the usage of information technology in public and private schools contributes higher effectively to the improvement of risk management and effectiveness work in schools .

Research Question 3:

To what extent does Internal Control System take place among Public and Private Secondary Schools in Arumeru District?

Table 3: Mean Score of Internal Control System (Components)

S/N	Items	Mean Score	Std. Deviation	Interpretation
1	In my school there is environmental control	3.6610	.54489	Strongly Agree
2	In my School there are control activities	3.4746	.70359	Agree
3	There is information and communication control	3.5593	.70151	Strongly Agree
4	In my School monitoring is used for internal control	3.1695	1.11653	Agree

Means Score Interpretation: 3.50-4.00 Strongly Agree (High); 2.50-3.49 Agree (Average); 1.50-2.49 Disagree (Below Average); 1.00-1.49 Strongly Disagree (Low).

Table 3, reveals that respondents strongly agreed that there was environmental control in both private and public schools with a mean and standard deviation of (M=3.6610) and (STD =.54489) respectively. This means that in private and public schools there are good procedures and policies put in place for internal control system to operate. The respondents in item No 2 agreed that in their schools there control activities their mean and standard deviation was (M=3.4746) (STD=.70356). This means that action and policies are in place.

The respondents in item No 3 strongly agreed that there is information and communication control in their schools as shown by the mean and standard deviation (M=3.5593) (STD= .70151). This means that in public and private schools there is a well-

established information and communication controls. The respondents of item No 4 agreed that monitoring is used for internal control in their schools (M=3.1695) (Std. =1.11653). This reveals that internal control system plays an important role in schools and helps the management to fulfill their duties by strengthening controls system. (Cook & Wickle 1976) argues that internal control system resembles the human nervous system which is spread throughout the organization carrying orders and reactions to and from the management by measuring and evaluating the effectiveness of organization controls.

In today's business environment internal control system are now providing management with a Far broader range of information technology concerning the organizations financial, operational and compliances activities to improve effectiveness, efficiency of management performance and activities, (Rezaee 1996) also states that human nervous system works as internal control system which spreads throughout the organization carrying procedures for the schools, taking actions which need to be discussed and implement, follow the policies of the schools to and from the management by measuring and evaluating effectiveness of organization controls.

Research Question 4:

Is there significant relationship between the applications of information technology and internal control system among secondary schools in Arumeru District?

Table 4: Correlations

		The Use of Information Technology	Internal Control System
The Use of Information Technology	Pearson Correlation	1	.592**
	Sig. (2-tailed)		.000
	N	59	59
Internal Control System	Pearson Correlation	.592**	1
	Sig. (2-tailed)	.000	
	N	59	59

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

The relationship between the application of information technology and internal control system among secondary schools in Arumeru District is significant at 0.01 levels (2-tailed). This implies that there is a moderate significant positive relationship between the use of information technology and internal control system. The more the use of information technology the more effective is in internal control system. This means that Information Technology and Internal Control System work together hand in hand to support internal control system to perform well in organizational performance.

Table 5: Independent Sample t- test between Public and Private Schools

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper	
Information Technology	Equal variances assumed	21.37	.000	11.392	57	.000	1.15040	.10098	.94818	1.35261
	Equal variances not assumed			11.262	38.502	.000	1.15040	.10215	.94370	1.35710

Table 5: Independent Sample t- test between Public and Private Schools

The independent sample t –test as shown in Table 5 below, indicates that the Sig. of .000 is less than the critical value (.005) which implies that the difference of mean scores between public and private schools is significant. Therefore, the null hypothesis

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was rejected and maintained the position that there is a significant difference in the application of Information Technology on Internal Control System (ICS) in secondary schools as categorized according to the type of schools.

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Information Technology	Equal variances assumed	21.366	.000	11.392	57	.000	1.15040	.10098	.94818	1.35261
	Equal variances not assumed			11.262	38.502	.000	1.15040	.10215	.94370	1.35710

SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATIONS

Summary of the Findings

In order to determine the extent to which the application of Information Technology (IT) on Internal Control System (ICS) takes place, it was necessary to test seven items as rated by research respondents. The findings revealed that majority of the respondents disagreed with application of information technology on internal control systems in their schools. However, a few agreed with the use of information technology on internal control in their schools.

The results of respondents from private schools show that the application of information technology on Internal Control Systems was higher while those of respondents from public schools showed that the application of information technology on Internal Control System was lower. The results further revealed that Internal Control System take place among Public and Private Secondary Schools in Arumeru District.

The findings revealed that, the independent sample t –test indicates that the Sig. of .000 is less than the critical value (.005) which implies that the difference of mean scores between public and private schools is significant. This implies that private schools are doing better in the application of information technology on internal control system than their public school counterparts. Therefore, the null hypothesis was rejected and maintained that there is a significant difference in the application of Information Technology on Internal Control System (ICS) in Arumeru District by school stakeholders categorized according to type of schools.

Conclusion

The researchers concluded that there is limited budget to finance IT. The top management needs to increase the

budget to support information technology so that schools can be equipped with adequate facilities, trained and qualified personnel in the usage of information technology, and up to date software for internal control system.

Recommendations

1. These include increment of the budget to support information technology especially the public secondary schools in order for them to enhance their IT facilities, qualified personnel in the usage of information technology, and up to date software for internal control system.
2. The Government under the ministry of education and cultural should make sure that they provide Information Technology facilities and infrastructure in public schools.
3. The researchers recommend that future researcher should research on the usage of IT in teaching.

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