



THE IMPACT OF TECHNOLOGICAL DEVELOPMENT ON THE ACCOUNTING SYSTEMS OF PUBLIC INSTITUTIONS IN GHANA

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Abstract: The main purpose of this study is to investigate the impact of adoption of technology on the accounting systems of public institutions in Ghana. The study also assesses the extent of technological adoption and application in accounting systems of public institutions in Ghana. Finally, the study assesses the challenges faced by public institutions in the implementation of technology in their accounting systems. A descriptive study design was used to gather information from 127 respondents from selected public institutions in the Tamale Metropolis. Both purposive and stratified random sampling methods were used to select the respondents. Questionnaires were respectively administered to the respondents. The data was analyzed by means of descriptive and inferential statistics using the SPSS version 29. The Z-test statistics was used to test the hypothesis to establish significance. The study established that the level of adoption of technology in the public institutions is high. The study also revealed that the use of technology in the accounting system of public institutions has positive significant on the accounting systems of public institutions. Majority of the respondents revealed that the use of technology in the accounting systems of public institutions has, among others, contributed to improved decision making, enhanced accountability, strengthened effective budgeting, and aiding long-term financial planning. The use of technologies in public institutions has come with challenges. Include resistance to changes and modern ways of doing things, lack of financial resources for staff training, audit difficulties associated with use of technology, the complexity of accounting software packages and lack of political support for public financial management reforms. Since the adoption of technology has significant positive impact on the accounting systems of public institutions in Ghana, it is recommended that Government and donor organizations should support public Sector entities with computers and capacity of staff to enhance the implementation of government reforms.

Index Terms – public institutions, technology, accounting, systems, financial management

1. Introduction

Financial management is usually a more important task including developing and managing financial management systems and policies. The profession of accountancy has experienced unprecedented change during the past 20 years. It has moved from paper-based to Information and Communication Technology (ICT)-based, and the Internet has become a prevailing tendency. Similar to other professions in the service sector, recent technological developments provide accountants the opportunity to incorporate information systems in their profession. Growth in accounting practices and information system is coming from the adoption of ICTs into accounting practices of most public institutions. Most public institutions have devised a way of recording and reporting transactions (Yeboah et al., 2014). Technology has made an undeniable impact on the accounting industry. Before accountants had computers, they had to use calculators to manually reconcile financial documents against paper ledgers. Records were significantly less

accurate than they are today, and calculation errors were difficult to catch. The advent of computer-based accounting technology dramatically changed the accounting industry. The most significant technological changes occurred after accounting software became widespread. Of all the information technology advancements that have shaped the accounting industry, software has had the largest impact. In this 21st century, technology companies developed innovative software for accountants to use on computers. Instead of using handwritten ledgers and calculators, accounting professionals could now automate equations in an electronic spreadsheet. Spreadsheet software allowed public accounting professions to spend less time on tedious tasks and focus more on finding solutions for high-level issues.

Since World War II, the international community has not faced as much a threat to stability as is currently posed by spiraling poverty in developing countries, particularly in Africa. Yet a closer look at how governments in these countries deploy available resources shows a record of less than optimal performance on delivery of value-for-money and accountability Charko, (2010). Governments and development partners are, however rising to the challenge by embarking on comprehensive programmes to reform the public sector at both the macro and micro levels. Governments and their development partners are employing a variety of innovative initiatives to ensure that the benefits of public expenditure reach the targeted beneficiaries to reduce poverty and accelerate development. According to Charko, (2010), one of the areas of the financial reforms is the area of financial supervision, where the reforms have led to a revolutionary shift towards the integration of public financial systems. Most African governments, supported by development partners, have consequently made significant investments in the development of financial management information systems (FMIS) to automate functionalities of public financial management for greater allocative efficiency, budget credibility and transparency (Diamond & Khemani, 2005). The World Bank explained ‘good governance’ to consist of a public service that is efficient, a judicial system that is reliable, and an administration that is accountable to the public (World Bank, 1992). It is in the light of this ‘good governance’ that public financial management reforms become very imperative. This ‘Good governance’ is behind the financial management reforms resulting in the development of some of the modern technologies used in public sector accounting systems such as Integrated Financial Management Information Systems (IFMIS).

Ghana after independence in 1957 carried out a number of administrative reforms in the various sectors of the economy for the purpose of effective performance and delivery to enhance “good governance”. In Ghana for instance, the advocacy for Ghana Integrated Financial Management Information System (GIFMIS) stems from the need to mitigate the drawbacks of the thereto specialized approach (Charko, 2010). Beside the GIFMIS, there are other technological tools Ghana has adopted such as Digital Integrated Personnel and Payroll Data-base (DIPPD), Budget and Public Expenditure Management System – 2 (BPEMS – 2), and Electronic Payslip systems to streamline the public sector financial systems. Based on this reason, the current research is to find out how the public sector financial management reforms with new technologies such as GIFMIS and IPPD2 have impacted on the accounting systems of public institutions in Ghana.

1.2 Problem Statement

Since Ghana’s return to constitutional rule in 1992, several technological reforms have been adopted in the public sector to improve effectiveness and efficiency in financial management practice of the government business. Some of these reforms included the adoption of technology in computer software such as BPEMS2, IPPD and the GIFMIS. According to Terkper in (2015), despite all the adopted reforms, the state still losses up to a tune of \$72 Million through the lack of transparency in the accounting systems of public institutions in Ghana. Also, the introduction of technology in the accounting systems of public institutions seeks to reduce workload of public service and made convenient in production of reliable results. This is still a challenge according to Terkper (2015). All these technological reforms are intended to replace manual systems of accounting which are mostly associated with plethora of laborious hours on work, maneuvering by public sector workers to compromise the system to their personal benefits and many others resulting in inefficiency and ineffectiveness in government business. Even though the government of Ghana and her international partners (World Bank, International Monetary Fund (IMF), European Commission, and many others) have invested huge sums of funds to improve the financial performance of public institutions, there are still much to be desired such as lack of accuracy, transparency and reliability of current information on budgetary allocations, commitments, actual revenues and expenditures, delay in payment processing and financial reporting and delay in the production of financial reports. There are also reports of poor feedback mechanisms for assessing budgetary performance and lack of a uniform Chart of Accounts, which make the

comparison of the performance of various budgets difficult. With all these revelations and insights of introducing technology into the public financial management system, it is clear that, it has not been rosy with the adoption of technology in the accounting systems of public institutions. The question that most people, including the various users of financial reports often ask is, Does the incorporation of technology into the accounting systems of public institutions as a way of public financial management reform affect accounting systems positively or negatively? government continue to spend more on reforms and technological development, yet contribution to productivity growth has been declining steadily Yeboah et al., (2014). The current study therefore intends to close the knowledge gap by investigate the impact of the adoption of technology in the public financial management reform on the accounting systems of public sector institutions in Ghana. The fewness of researches in the field of accounting and technology in public institutions in Ghana influenced the researcher's choice of this research study.

1.3 Objective of the Study

The main objective of this study is to investigate the impact of adoption of technologies in public financial management reform on the accounting systems of public institutions in Ghana. The study looks at the following specific objective:

1. To assess the extent of acceptance and usage of technology in the accounting systems of public institutions in Ghana.
2. To assess the challenges faced by public institutions in Ghana in implementing technology in their accounting systems.
3. To investigate the impact of technological development on the accounting systems of public institutions in Ghana.

2. LITERATURE REVIEW

Advancements in information and technology have enabled companies to computerize their information systems. Accounting information systems have also been computerized as a result of significant improvements in the technology. As accounting information systems are being computerized, accountants must gain the skills to use computerized systems Ghasemi et al., (2011). The use of computerized Accounting information systems has brought opportunities for companies to perform the accounting functions more effectively and efficiently because the use of computerized accounting has brought significant time and cost savings. Use of information technology to perform accounting functions has brought a chance for companies to progress toward paperless offices. Companies applying a production system may as well apply it more effectively if they use computerized systems. Such tools as electronic data interchange and electronic funds transfer can provide companies with opportunities to apply production system more effectively and save money Ghasemi et al., (2011).

According to Yeboah et al., (2014), since the inception of ICT, computerized accounting systems have allowed accountants to quickly process large amounts of financial information through the accounting system. Quicker processing time for individual transactions lessens the amount of time needed to close each accounting period. Complex and difficult transactions that would have taken months or years to prepare would be done quickly and faster at a far cheaper cost. Over the past few years, technology has advanced to adapt to changing needs in the workforce. Technological advancements have largely impacted financial management systems recently. Accounting industry worldwide has benefited a lot especially in accounting information system. Accounting information system is a structure that a business uses to collect, store, manage, process, retrieve, and report its financial data so it can be used by accountants, consultants, business analysts, managers, chief financial officers (CFOs), auditors, regulators, and tax agencies. Specially trained accountants work in-depth with AIS to ensure the highest level of accuracy in a company's financial transactions and record-keeping, as well as make financial data easily available to those who legitimately need access to it, while keeping data intact and secure. An accounting information system is a way of tracking all accounting and business activity for a company.

2.1.1 Accounting System

Accounting is the chronological and systematic recording, processing, summarizing and reporting of information relating to the economic activities of business units. The aim of accounting is to provide information relating to the financial position, financial performance and cash flows of individuals, companies and public institutions (Teiuşan,

2009). Accounting is fit into description of a system because of its nature. It receives inputs in the form of transaction data recorded manually or with the aid of an accounting software which is usually a component of an Enterprise Resource Planning (ERP) package. The data is then processed manually or with accounting software in the case of computerized accounting. That is, accounting as a system exists in two main forms: manual accounting system and computerized accounting system.

2.1.2 The Manual Accounting System

Since the invention and popularization of the double entry system of accounting in 14th century in Italy, the accounting that has been in practice is the manual accounting system (Alexander, 2002). The manual accounting system is the kind that makes use of handwritten records in large notebooks called ledgers. The use of books for manual accounting led to the development of terms like “bookkeeping” (Ury, 2011). The work of Waterfield and Ramsing (1998), emphasized that the accounting system in an entity can be a simple manual system where transactions are recorded in a chronological or date-wise manner as debits and credits. In their study, they described manual accounting system as starting with journalizing of transactions in the general journal and other supporting journals like purchases and sales. Recordings in the journals mainly have to do with determining which accounts will be debited and which will be credited. From the journals, the general journal transactions are posted to the general ledger and those in other supporting journals are posted to their respective ledgers. Their study also highlights that, the actual activity of accounting is done in the ledgers. The advantages of manual accounting system include: reliability, skilled labour which is readily available, manual accounting resources are relatively cheaper, and independence from computers and its associated problems such as computer failure, harking and so on. Nonetheless, manual accounting is not without demerits. Dacosta et al (2012), states that manual accounting system is slow, raises workload of accountants, and hinders internal control reporting. In addition, manual accounting is repetitive and routine in nature and thus creates boredom. The use of books makes backing up information very burdensome. This had led to loss of important financial records in developing countries like Ghana in the event of fire outbreaks

2.1.3 The Technological (Computerized) Accounting System

Technological or computerized accounting is defined by Wood & Sangster (2005) as a total suit of components that together comprises all inputs, storage, transactions, processing, collecting and reporting of financial transaction data. Individuals and companies both big and small manage their money and assets one way or another. They hire accountants to help them carry out the mathematical requirements of accounting and balancing their books. Before the introduction of information technology into accounting, these accounting protocols were performed manually.

It is evident that the concept of technology and the concept of accounting are significantly divergent. However, Teiuşan (2009) believes that we can marry the two, and such a marriage leads to the creation of what Teiuşan called technology-assisting accounting which is a reference to computerized accounting. According to Teiuşan, technology-assisted accounting: “a term with a general character; it refers to the accounting kept with the help of the computer or to the use of the computer to automate the operations in the activity of the person in charge of accounting, the accountant; it is a concept used to define the computer applications in the accounting activity

2.1.4 Technology and Accounting System in Ghana

The work of Dacosta et al (2012) was directed at investigating the effects of technological development in accounting on Ghanaian banks. The study was focused on Amanano Rural Bank, and revealed that the bank’s adoption of technological accounting software actually expedites the operations of the bank with respect to both their customers and staff. For example, customers’ information could now be instantly fetched and supplied to the cashier just after keying-in few particulars of the customer. The introduction of technology in accounting system therefore ensured that transactions were affected with ease and at a faster pace. In a contrast study, Simpson (2012) shifted from the private sector to the public sector and sought to study the developments in public sector accounting in a post-independence Ghana. Simpson noted that the fewness of researches in public sector accounting in emerging economies like Ghana influenced his choice of the public sector accounting for his research. The study found that entire public sector accounting practices and reporting procedures are being computerized.

2.2 Overview of Public Financial Management (PFM) in Ghana

Public Financial Management (PFM) relates to the way governments manage public resources (both revenue and expenditure) and the immediate and medium-to-long-term of search resources on the economy or society. PFM is a set of rules and regulations, frameworks and procedures utilized by sovereign countries (and sub-national governments), to generate income, distribute public revenues, dispense public funds, accounts for the fund and appraise results (Lawson, 2015). Over the years, the PFM has faced serious challenges that make public monies susceptible to misapplication and corruption. The weaknesses of PFM reforms in Ghana found in many assessment reports include the following:

- Weak budget formulation, preparation and lack of ownership
- Weak expenditure monitoring and budgetary control
- Lack of proper accounting and monitoring system
- Lack of quality and timely data on government resources
- Outmoded regulatory framework

Prior to the adoption of Integrated Financial Management Information System (IFMIS), the government had implemented the Budget and Public Expenditure Management Systems (BPEMS) in the early 2000s to address the problems in PFM. The main goal of BPEMS was to improve fiscal discipline and macroeconomic stability. BPEMS encountered some serious challenges leading to its failure. Efforts to improve the PFM system in Ghana was renewed leading to the repackaging of BPEMS into the Ghana Integrated Financial Management Information (GIFMIS)

2.2.1 The Ghana Integrated Financial Management Information System (GIFMIS)

Ghana Integrated Financial Management Information System (GIFMIS) was introduced in May 2009 to replace the Budget and Public Expenditure Management System (BPEMS) Project, which was in operation between 1999 and 2008. The project was scheduled to be the 4th Component of the e-Ghana Project with a pooled donor fund of US\$ 120.52 Million. Objectives of the GIFMIS, was launched in 2014 for the 2015 budget. A well-considered system, it was aimed at onboarding all entities financed by the national budget, including all MDAs as well as government-funded schools, hospitals and MMDAs. The overall objective of extending the system to assemblies is to monitor revenue collection, disbursement and judicious utilization of internally generated revenue funds, as well as to prevent fraud (GBN, 2018). Designed in conjunction with the consulting firm KPMG, the approach to developing the GIFMIS was inclusive: various stakeholders were interviewed, and a study was conducted on what would work in the context and according to budget procedures, manuals and acts. The results of the study were used by the vendor from Portugal who was hired to develop the GIFMIS as an on-premises, web-based system that could be used by users on computer, tablet or smartphone with an internet connection. Moreover, a blueprint document was developed, which outlined the characteristics of the system, the step-by-step use of functionalities, and the design of reports. Encourage competence, clearness and answerability in the management of public finance through good reasoning and transformation of budgeting and public expenditure management of the Government of Ghana (GoG).

2.2.2 The Integrated Payroll and Personnel Database (IPPD) in Ghana

Payroll has been one of the significant reform instruments in the public financial management of Ghana. Managing public finance effectively prompted the introduction of the Integrated Personnel and Payroll Database (IPPD) framework. It was launched as an integrated computer system to handle staff data for government employees, teachers and health personnel and to improve workforce and payroll control. The initial IPPD was provided by Consillersen Gestion et Informatique (CGI) of Paris, France and executed within the period of three (3) years (1993 to 1995). The data inputted into the IPPD were gotten from staff records in the files, however, the data obtained from these records were considered to be deficient or inaccurate, as well as inability to cover non-pensionable posts. Pension data, for instance, were obtained from the Controller and Accountant General Department (CAGD) pension system. This prompted the disappointment got from the first IPPD in such instance like a date could be entered and approved for a date of birth, either in error or as a default. Individual identities were difficult to know as the full names of employees could not be inputted into the system. This generated a lot of confusion. Status of employees, for instance, could be recorded inactive with no matching effective date. Also, the system was not users' friendly, and also has dysfunctional report generation ability. Due to the foregoing abnormalities or inconsistencies, the system, on the whole, has to be shut down for at least fourteen days on a monthly basis. Despite the shortcomings, substantial effort and creativity were engendered to keep the system functional and ongoing. Part of the effort was the replacement of the initial IPPD with an oracle-based package, Digital Integrated Personnel and Payroll Information System called IPPD2. This

IPPD2 provided fortified human resource management functionality. Unfortunately, data cleansing exercise was not done before old data considered unreliable were migrated from IPPD1 to IPPD2. This invariably suggests that the inaccurate data were inherited with its challenges into the IPPD2. Verification exercise started in 2003 to ascertain the reliability of the data moved into IPPD2 by Accountant General's Department, for instance, to address mistakes in dates of birth. However, the exercise was truncated partly because of the paucity of funds for the acquisition of network infrastructure, workstation, hardware, installation of IPPD2 in MDAs. On the whole, no huge progress was made on the IPPD2 project. Some of the ugly tragedies that followed in 2003 due to the truncation of the development of IPPD2 were illegitimate payment of unmerited salary to the tune of ₵3.25 billion to staff. Besides, an increase of ₵1.18 billion was detected by the Auditor-General despite the usage of IPPD2 (International Record Management, 2008). Given the foregoing, it was deemed fit to re-examine the IPPD2 project with donor partners in 2004. While the review lapsed, salary payment was delayed for some months, and that portends that its collapse was inescapable. Without mincing words, the first reexamination brought huge success by ending manual payments as well as the introduction of payroll discipline via the issuance of ID number. Despite this success story, the staff strength of government employees was unknown. It was not possible to know the staff's strength due to questionable and fragmented data and procedural error in updating the payroll. Consequently, the system was marred with irregularities and fraud as submitted by Auditor General's Reports (International Record Management, 2008). To worsen the situation, the personnel records at the disposal of the employing authorities were poor in quality, containing incomplete contents and above all the records were not accessible. This shows that the records were not properly documented. A 'Public Sector Employee Census' carried out in 2003 had it that there was no single destination where information related to government employees was available. Yet, their salaries were paid from the Government of Ghana's Consolidated Fund. Apart from the above, staff files and job titles were missing or were not available for many staff. Consequently, personnel issues were treated on a verbal basis as opposed to the use of archival documents. This increased the number of ghost workers due to the discrepancies between the list prepared locally and the one submitted from the Ministries. Apparently, this suggests that the centre was not in charge. The inherent danger here is that, workers were paid without proper verification with regards to their status as genuine staff or not. This scenario prompted payroll irregularities and fraud courtesy of procedural errors, poor record-keeping, intrigues among government employees, weak internal control system of the personnel and payroll records. Despite all these challenges, the government considers it crucial to improving personnel and payroll management. In an attempt to achieve this, the government puts purity of data or data cleansing as a top priority in the IPPD as a strategy and basic condition for personnel and payroll reform. Interestingly, actualizing a coordinated human resource information system was a key objective for the government. However, the implementation of the integrated personnel and payroll system was a job half done by the government in Ghana as just 50% of the public service was covered. Consequently, the government has little control over staffing levels and thereby paving ways for uncontrollable fraud (International Record Management Trust, 2008)

2.3 Theoretical Framework

The researchers consider Innovation Diffusion Theory (IDT) and Technology Acceptance Model (TAM) more attractive and applicable to this study

2.3.1 Innovation Diffusion Theory (IDT)

The Innovation Diffusion Theory postulated by Roger in 1983, explains the aim of people to adopt a technology as a methodology for carrying out a traditional activity. As for innovation in general, the determinants are: relative advantage, complexity, reliability, capacity to check and perceptibility. In order to improve upon their operational efficiency, many public institutions like the banks have adopted ICT through the development of websites and mobile applications to suit the need of the public. This theory is really about how another innovative thought, process, or some usage of an old one, moves from creation to utilization. As per IDT, from a social context, technological innovation is communicated among members through different channels. The phases through which a technological innovation passes are: knowledge (exposure to its existence, and understanding of its functions); persuasion (the forming of a favourable attitude to it); decision (commitment to its adoption); implementation (putting it to use); and confirmation (reinforcement based on positive outcomes from it) (Arnaboldi and Claeys, 2008). Innovation decisions may be optional (where the individual or organization has a real opportunity to accept or reject the idea) collective (where a decision is reached by consensus among system members) or authority-based (where a decision is enforced by another individual or organization with the power, status or technical expertise required). Barnes and Corbitt (2013) advise managers to identify the advantages of each given technology and the benefits of using it and determine what technology to use in their operations, as well as the related costs and disadvantages of running the technology.

He advises the general issues to consider as the quantity and variety of performance the technology can achieve, the compatibility with the current technology used by the organization, and the technology's maturity level. Accounting systems therefore relies heavily on ICT. This therefore affirms the fact that technological development enhances accounting systems of an institution.

2.3.2 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is an information system theory developed by Davis (1989) which shows how users appreciate and use technology. The model focuses on how technology is adopted and used with emphasis on the user acceptance. It has two major theoretical frameworks: the perceived usefulness of the system and perceived ease of use (Vogel & Cheung 2013). Perceived use, as defined by Davis (1989), states that, it is the degree to which an individual think that using a specific system will enhance their job performance, whereas the degree of ease of use perceived relates to the extent of the ease of using a particular system. This indicates that people or users are more willing to embrace or use a different IT system if it can improve job procedures. Moreover, it is not only perceived usefulness that affects the attitudes of the user, but also the IT system's complexity or flexibility (Lin, Fofanah & Liang, 2011). Flexible IT system involves very little or minimal effort to use and hence a high likelihood of acceptability. This implies that the removal of manual system of operating under the BPEM to the use of GIFMIS which requires the use of machines, the workers will appreciate and accept the new technology only when the user thinks that using this system will enhance their job performance. The personnel attitude to use or not to use GIFMIS systems will depend on the complexity or the flexibility of the IT system installed. This theory is relevant to the study because this theory will require vigorous trainings be conducted for the stakeholders so that they will be in a better position to accept the new technology and implement the GIFMIS.

3. RESEARCH METHODOLOGY

3.0 Introduction

This study investigates the impact of technological development in the public financial management on the accounting systems of public sector institutions in Ghana. This section of the study focuses on the method adopted for the study, research design, sampling procedures, tools for data collection, data collection processes and analytical procedures adopted to achieve the objective of the study.

3.1 The Design of the Survey

Research design according to Osuala (2001) is the blueprint or plan which determines the nature and scope of a study to be carried out or proposed. The study used a descriptive survey, as well as a research model from the field survey. Creswell (2003) defines the descriptive survey as a data collection method to test the hypothesis or answer research questions about the current status of the subjects under study. According to Mugenda (2013), a descriptive research is used when the problem is well designed. Descriptive research can help transform raw data into a form that will make it easy to understand and interpret (Mbwesa 2006). The study relied on the mixed method strategy to gather primary data because it allows both quantitative and qualitative methods to overcome weakness of each other.

3.2 Population of the study

The population is the totality of the respondents being considered for the study. When you consider the individuals, areas, and elements that can be used in the study, it is not possible to gather all data from the whole population (Fianu, 2016). In this study, the population is the various heads, auditors, accountants and procurement officers of selected public sector institution in the Tamale Metropolis. These officers were conveniently selected because of their expertise and experience which puts them in a best position to answer the research questions. These public institutions are the Audit Service, Controller and Accountant General Department (CAGD), Local Government, Ghana Education Service (GES), Ghana Health Services, Judicial Service, University for Development Study (UDS), Tamale

Technical University (TaTU), Tamale College of Education and Bagabaga college of Education. The public institutions were selected using a purposive sampling method.

3.3 Sampling

Sekaran et al., (2013) wrote that sampling is the process of selecting a sufficient number of elements from a population. Thus, by studying the sample and understanding the properties or characteristics of the sample, researchers can generalize the properties of the sample to the population. The research used stratified purposive

sampling technique. Stratified purposive sampling is the process of selecting the population base on the objective of the study and dividing the population into subgroups, for instant, low income, high income (Teddlie & Fen, 2007). The use of stratified purposive sampling helps reduces error and bias. The sample frame of this study consists of two population groups: the heads of the selected institutions and other senior officers of the selected public institutions in the Tamale metropolis as (Heads' group) and accountants, auditors and procurement officers who are key users of accounting technologies as (accountants' group). In all, 68 officers of the 'heads group' were purposively selected and 62 officers were purposively selected for the 'accountants' group' were sampled. Table 3.1 represents the sampling frame of the target population in the metropolis of Tamale:

Table 3.1: Sample Distribution

Institution	Heads' group	Accountants' group
GES	10	5
Local Government/RCC	10	10
Judicial Service	2	2
CAGD	10	10
GHS	6	5
Tamale Technical University	10	10
University for Development Study	10	10
Tamale College of Education	5	5
Bagabaga College of Education	5	5
Total	68	62

Owners Construct, 2023

3.4 Data Collection Method

According to Bhattacharjee (2012) data collection is the process of gathering information to serve or prove some facts. Primary data is information that is collected directly from the respondents (Sekaran and Bougie, 2013). Observation, interview and questionnaires are example of data collection instruments that can be used to collect primary data (Bryman & Bell, 2011). Structured questionnaire was used to collect primary data. The questionnaire was self-administered. They were hand delivered to respondents in the institutions and collected immediately they were done answering the questions hence reducing bias. A five (5) point Likert scale (From 1 strongly disagree to 5 for strongly agree) was used and before conducting the survey, the reliability of the instrument (questionnaire) was tested and calculated with Cronbach's alpha (0.79), which is more than rule of thumb of 0.70 by (Hair et al., 2014). In undertaking this study, the researchers took into consideration good ethical principles. Participants were informed about the purpose of the interview and assured that results would remain anonymous. This strategy assisted in ensuring that people were opened and honest with their comments, without fear of being identified.

3.5 Data analysis and Tools

Data from the field were edited and coded appropriately to make meaning out of them. The study used the coding to speed up data entering and comprehensive analysis. The software used was the IBM Statistical Package for Social Science (SPSS) version 29. It was used to analyze the descriptive statistics mainly through percentages and frequencies of the demographic characteristics of the respondents. The information was displayed by the use of tables. To establish the validity of the research instruments, the researchers sought the opinions of experts in the field of study. This facilitated the necessary revision and modification of the research instrument thereby enhancing validity. According to Walliman (2001), reliability refers to the consistency of measurement and is frequently assessed using the test-retest reliability method. Reliability is increased by including many similar items on a measure, by testing a diverse sample of individuals and by using uniform testing procedures. The hypotheses were statistically tested with Z-test to test. The hypothesis formulated by the researchers in this study are detailed below.

3.6 Hypothesis of the Study

1. a) The alternative hypothesis (H_1)

The level of adoption and application of technology in the accounting systems of public institutions in Ghana is high.

b) Null hypothesis (H_0)

The level of adoption and application of technology in the accounting systems of public institutions in Ghana is low.

2. a) The alternative hypothesis

Public institutions in Ghana face challenges implementing new technology in their accounting systems.

b) Null hypothesis (H_0)

Public institutions in Ghana do not face challenges implementing new technology in their accounting systems.

3. a) The alternative hypothesis (H_1)

Adoption of Technology in public financial management system has significant impact on the accuracy and reliability of financial systems in Ghana

b) Null hypothesis (H_0)

Adoption of Technology in public financial management system has no significant impact on the accuracy and reliability of financial systems in Ghana

4. RESULTS AND DISCUSSIONS

4.0 Introduction

The study investigates the impact of adoption of technology in the accounting systems of public institutions in Ghana. The paper specifically assessed the extent of adoption and application of technologies in the accounting systems of public institutions in Ghana in their quest to pursue public financial management reform. The study also assessed the challenges faced by public sector institutions in implementing new technology in their accounting systems as they pursue public financial management reforms. Finally, the study as its main purpose investigate the impact of adoption of technology in the accounting systems of public institutions in Ghana in the pursuance of public financial management reforms. The results obtained from the analysis of the data are presented in this chapter. The findings and discussions are divided into two sections. The first section is the demographic background and the second section discusses the empirical findings on the hypothesis test. A total of 130 questionnaires were issued by the researchers. 68 questionnaires were administered to the Group of Heads out of this number 65 were filed and returned. Also, 62 questionnaires were issued to the accountants' group and all were filed and returned. So, a total of 127 questionnaires were filed and returned.

4.1 Demographic Factors

4.1.1 Demographic Factors of the Respondents

Table 4.1 shows the demographic distribution of respondents in the public institutions compiled from the field survey.

Table 4.1 Demographic Factors of the Respondents

Variables	categories	Frequency	percentage
Age of respondent			
	15-24 years	14	11.0
	25-34 years	30	23.6
	35-44 years	55	43.3
	45-54 years	20	15.8
	55 years and above	8	6.3
Sex of respondent			
	Male	101	79.5
	Female	26	20.5
Education background			
	HND/Diploma	18	14.2
	Bachelor Degree	57	44.9
	Master Degree	37	29.1
	Any other(specify)	15	11.8

Source: Owners construct 2023

Out of 127 respondents, 101 were males representing over 79% of the total number of respondents and 26 were female representing over 20%. The study also reveals that over 11% of the respondents fall into the age group of 15 – 24, over 23% fall within the age bracket of 25 – 34, over 43% falls within 35 – 44, over 15% also falls within the age bracket of 45 – 54 and over 6% fall in the age group of 55 and above. The results further indicate that more than 14% of the respondents have diploma education, over 44% have bachelor education, over 29% hold master qualification, and more than 6% any others which include vocational, 'A' level and 'O' level.

4.2 Empirical findings

Based on the study objectives, the following hypotheses were formulated;

1. **H₁**; The level of adoption and application of technology in the accounting systems of public institutions in Ghana is high.
H₀; The level of adoption and application of technology in the accounting systems of public institutions in Ghana is low.
2. **H₁**; Public institutions face challenges in implementing new technology in their accounting systems.
H₀; Public institutions face do not face challenges in implementing new technology in their accounting systems.
3. **H₁**; The adoption of technology in the public financial management reform has significant positive impact on the accounting systems of public sector institutions in Ghana
H₀; The adoption of technology in the public financial management reform has no significant positive impact on the accounting systems of public sector institutions in Ghana

4.2.1 Objective One: To investigate the extent of accepting and using of technology as part of public financial management reform in the public institutions in Ghana

The question that required response from the respondents based on this objective is: Has your organization adopted and applied accounting technologies such as GIFMIS and IPPD2 in your accounting systems? Table 4.2.1a and b below contains responses by Heads' group and Accountant's group respectively in the various public institutions in the Tamale Metropolis.

Key: 1=Strongly Agree (SA), 2=Agree (A), 3=Strongly Disagree (SD), 4=Disagree (D), 5=Uncertain (U).

**Table 4.2.1a Response to the extent of adoption and application of Technology.
(Heads Group)**

Response	Frequency	Percentage
Strongly agreed	31	47.7
Agreed	23	35.4
Strongly disagreed	7	10.8
Disagreed	3	4.6
Uncertain	1	1.5
Total	65	100

Owner's survey, 2023

**Table 4.2.1b Response to the extent of adoption and application of Technology.
(Accountants Group)**

Response	Frequency	Percentage
Strongly agreed	23	37.1
Agreed	18	29.0
Strongly disagreed	8	12.9
Disagreed	10	16.1
Uncertain	3	4.9
Total	62	100

Owner's survey, 2023**Test of Hypothesis**

The hypotheses stated earlier in this study are hereby tested using the Z-test.

1. **H₁**; The level of adoption and application of technology in the accounting systems of public institutions in Ghana is high.
2. **H₀**; The level of adoption and application of technology in the accounting systems of public institutions in Ghana is low.

In testing this hypothesis, the data generated were used and the result obtained is presented in the table 4.3a below.

Table 4.2.1c Z-Test Computations for Test of Hypothesis (Heads Group)

Response	Scores (χ)	Frequency (f)	$f\chi$	$X - \bar{x}$	$(X - \bar{x})^2$	$f(X - \bar{x})^2$
SA	5	31	155	0.77	0.593	18.383
A	4	23	92	-0.23	0.053	1.219
SD	3	7	21	-1.23	1.513	10.591
D	2	3	6	-2.23	4.973	14.919
U	1	1	1	-3.23	10.433	10.433
Total	-	65	275			55.545

Owner's survey, 2023 Note: $\bar{X}_1 = 4.23$, $S_1^2 = 0.86$, $n = 65$

Table 4.2.1d Z-Test Computations for Test of Hypothesis (Accountants Group)

sponse	Scores		f χ	X - \bar{x}	(X - \bar{x}) ²	f(X - \bar{x}) ²
	(χ)	(f)				
SA	5	23	115	1.23	1.513	34.799
A	4	18	72	0.23	0.053	0.954
SD	3	8	24	-0.77	0.593	4.744
D	2	10	20	-1.77	3.133	31.330
U	1	3	3	-2.77	7.673	23.019
Total	-	62	234			94.846

Owner's survey, 2023 Note: $\bar{X}_2 = 3.77$, $S_2^2 = 1.53$, $n = 62$

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(n_1-1)(S_1^2) + (n_2-1)(S_2^2)}{n_1 + n_2 - 2} \left[\frac{1}{n_1} + \frac{1}{n_2} \right]}}$$

X_1 = mean of the sample of Heads Group

X_2 = mean of the sample of Accountants Group

S_1^2 = variance of the sample of Heads Group

S_2^2 = variance of the sample of Accountants Group

n_1 = sample size of the Heads Group

n_2 = sample size of the Accountants Group

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(n_1-1)(S_1^2) + (n_2-1)(S_2^2)}{n_1 + n_2 - 2} \left[\frac{1}{n_1} + \frac{1}{n_2} \right]}}$$

$$Z = \frac{4.23 - 3.77}{\sqrt{\frac{(65-1)(0.86) + (62-1)(1.53)}{65 + 62 - 2} \left[\frac{1}{65} + \frac{1}{62} \right]}}$$

$$Z = 2.38$$

The hypotheses stated earlier in this chapter are tested using the Z-test as shown above base on the first objective of the study. In testing this hypothesis, the data generated was used and the result obtained is presented in Table. Our computed Z value is 2.38

Decision: Reject the H_0 since Z-computed is 2.38 greater than Z-critical Value of 1.96. This implies that the level of adoption and application of technological development such as GIFMIS and IPPD2 in the accounting systems of public institutions in Ghana is high.

4.2.2 Objective Two: To find out the challenges faced by public sector institutions in implementing new technology in their accounting systems.

The question that required response from the respondents based on this objective is: do your institution face challenges in implementing the new technology in your accounting systems? Table 4.4a and b below contains responses by Heads group and Accountants groups respectively in the public institutions in Ghana.

Key: 1=Strongly Agree (SA), 2=Agree (A), 3=Strongly Disagree (SD), 4=Disagree (D), 5=Uncertain (U).

Table 4.2.2a the challenges face by public sector institutions in implementing new technology in their accounting systems (Heads Group)

Response	Frequency	Percentage
Strongly agreed	45	69.3
Agreed	17	26.2
Strongly disagreed	1	1.5
Disagreed	1	1.5
Uncertain	1	1.5
Total	65	100

Owner's survey, 2023**Table 4.2.2c the challenges face by public sector institutions in implementing new technology in their accounting systems (Accountants Group)**

Response	Frequency	Percentage
Strongly agreed	26	41.9
Agreed	11	17.8
Strongly disagreed	17	27.4
Disagreed	6	9.7
Uncertain	2	3.2
Total	62	100

Owner's survey, 2023**Test of Hypothesis**

The hypotheses stated earlier in this study are hereby tested using the Z-test.

H₁: Public institutions in Ghana face challenges implementing new technology in their accounting systems.

H₀: Public institutions in Ghana do not face challenges implementing new technology in their accounting systems.

In testing this hypothesis, the data generated were used and the result obtained is presented in the table 4.3.2c and b below.

Table 4.2.2c Z-Test Computations for Test of Hypothesis (Heads Group)

Response	Scores (χ)	Frequency (f)	$f\chi$	$X - \bar{x}$	$(X - \bar{x})^2$	$f(X - \bar{x})^2$
SA	5	45	225	-0.06	0.004	0.180
A	4	17	68	-1.06	1.124	19.104
SD	3	1	3	-2.06	4.244	4.244
D	2	1	2	-3.06	9.364	9.364
U	1	1	1	-4.06	16.484	16.484
Total	-	65	329			49.376

Owner's survey, 2023 Note: $\bar{X}_1 = 5.06$, $S_1^2 = 0.76$, $n = 65$

Table 4.2.2d Z-Test Computations for Test of Hypothesis (Accountants Group)

Response	Scores (χ)	Frequency (f)	$f\chi$	$X - \bar{x}$	$(X - \bar{x})^2$	$f(X - \bar{x})^2$
SA	5	26	130	1.15	1.323	34.398
A	4	11	44	0.15	0.023	0.253
SD	3	17	51	-0.85	0.723	12.291
D	2	6	12	-1.85	3.423	20.538
U	1	2	2	-2.85	8.123	16.246
Total	-	62	239			83.726

Owner's survey, 2023 Note: $\bar{X}_2 = 3.85$, $S_2^2 = 1.35$, $n = 62$

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(n_1-1)(S_1^2) + (n_2-1)(S_2^2)}{n_1 + n_2 - 2} \left[\frac{1}{n_1} + \frac{1}{n_2} \right]}}$$

X_1 = mean of the sample of Heads Group

X_2 = mean of the sample of Accountants Group

S_1^2 = variance of the sample of Heads Group

S_2^2 = variance of the sample of Accountants Group

n_1 = sample size of the Heads Group

n_2 = sample size of the Accountants Group

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(n_1-1)(S_1^2) + (n_2-1)(S_2^2)}{n_1 + n_2 - 2} \left[\frac{1}{n_1} + \frac{1}{n_2} \right]}}$$

$$Z = \frac{5.06 - 3.85}{\sqrt{\frac{(65-1)(0.76) + (62-1)(1.35)}{65 + 62 - 2} \left[\frac{1}{65} + \frac{1}{62} \right]}}$$

$$Z = 6.65$$

Base on the second objective of this study, the hypothesis is tested, the data generated was used and the result obtained is presented in Table 4.3.2c and d. The Computed Z value is 6.65

Decision: Reject the null hypothesis (H_0), since Z-computed value 6.65 is greater than Z-critical Value of 1.96. This implies that public institutions in Ghana face challenges implementing new technology in their accounting systems.

4.2.3 Objective Three: To investigate the impact of the adoption of technology in the public financial management reform on the accounting systems of public institutions in Ghana.

The question that required response from the respondents based on this objective is: do you agree that the adoption of technology in the public financial management reform has positive impact on the accounting systems of your institution? Table 4.4a and b below contains responses by Heads group and Accountants groups respectively in the public institutions in Ghana.

Key: 1=Strongly Agree (SA), 2=Agree (A), 3=Strongly Disagree (SD), 4=Disagree (D), 5=Uncertain (U)

Table 4.3.3a the impact of adoption and application of technology on the accounting systems of public institutions in Ghana (Heads Group).

Response	Frequency	Percentage
Strongly agreed	39	60
Agreed	18	27.7
Strongly disagreed	5	7.7
Disagreed	2	3.1
Uncertain	1	1.5
Total	65	100

Owner's survey, 2023

Table 4.2.3b the impact of adoption and application of technology on the accounting systems of public institutions in Ghana (Accountants Group).

Response	Frequency	Percentage
Strongly agreed	31	50.0
Agreed	11	17.7
Strongly disagreed	13	21.0
Disagreed	5	8.1
Uncertain	2	3.2
Total	62	100

Owner's survey, 2023

Test of Hypothesis

The hypotheses stated earlier in this study are hereby tested using the Z-test.

H₁: the adoption and application of technology have positive impact on the accounting systems of public institutions in Ghana.

H₀: the adoption and application of technology have no positive impact on the accounting systems of public institutions in Ghana.

In testing this hypothesis, the data generated were used and the result obtained is presented in the table 4.3.3c and d below.

Table 4.2.3c Z-Test Computations for Test of Hypothesis (Heads Group)

Response	Scores (χ)	Frequency (f)	$f\chi$	$X - \bar{x}$	$(X - \bar{x})^2$	$f(X - \bar{x})^2$
SA	5	39	195	0.58	0.336	13.104
A	4	18	72	-0.42	0.176	3.168
SD	3	5	15	-1.42	2.016	10.080
D	2	2	4	-2.42	5.856	11.712
U	1	1	1	-3.42	11.696	11.696
Total	-	65	287			49.760

Owner's survey, 2023 Note: $\bar{X}_1 = 4.42$, $S_1^2 = 0.77$, $n = 65$

Table1: 4.2.3d Z-Test Computations for Test of Hypothesis (Accountants Group)

Response	Scores (χ)	Frequency (f)	$f\chi$	$X - \bar{x}$	$(X - \bar{x})^2$	$f(X - \bar{x})^2$
SA	5	31	155	0.97	0.941	29.171
A	4	11	44	-0.03	0.001	0.011
SD	3	13	39	-1.03	1.061	13.793
D	2	5	10	-2.03	4.121	20.605
U	1	2	2	-3.03	9.181	18.362
Total	-	62	250			81.942

Owner's survey, 2023 Note: $\bar{X}_2 = 4.03$, $S_2^2 = 1.32$, $n = 62$

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(n_1-1)(S_1^2) + (n_2-1)(S_2^2)}{n_1 + n_2 - 2} \left[\frac{1}{n_1} + \frac{1}{n_2} \right]}}$$

X_1 = mean of the sample of Heads Group

X_2 = mean of the sample of Accountants Group

S_1^2 = variance of the sample of Heads Group

S_2^2 = variance of the sample of Accountants Group

n_1 = sample size of the Heads Group

n_2 = sample size of the Accountants Group

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(n_1-1)(S_1^2) + (n_2-1)(S_2^2)}{n_1 + n_2 - 2} \left[\frac{1}{n_1} + \frac{1}{n_2} \right]}}$$

$$Z = \frac{4.42 - 4.03}{\sqrt{\frac{(65-1)(0.77) + (62-1)(1.32)}{65+62-2} \left[\frac{1}{65} + \frac{1}{62} \right]}}$$

$$Z = 2.16$$

Base on the third objective of this study we tested the hypothesis, the data generated was used and the result obtained presented in Table 1. The computed Z value is 2.16

Decision: Reject the null hypothesis (H_0), since Z-computed value is 2.16 greater than Z-critical Value of 1.96. This implies the adoption and application of technology have positive impact on the accounting systems of public institutions in Ghana.

4.3 Discussion of the Result

4.3.1 Objective One

The first objective of the study is to assess the level of adoption and application of technologies in the accounting systems of public institutions in Ghana. The result of the analysis obtained in section 4.2.1 indicates that majority of the respondents strongly agreed that they are using most of the accounting technologies as part of the public financial management reforms. The analysis further revealed that most of the institutions employ Ghana Integrated Financial Management Information System (GIFMIS) and the Digital Integrated Personnel and Payroll Data-base (DIPPD) also known as IPPD2. This was the main reason why the Z-test rejected the null hypothesis which states that the level of adoption and application of technology in the accounting system of public institutions in Ghana is low. Since the Z-test statistic value obtained was 2.38 greater than the Z-critical value of 1.96 which falls on the rejection region of the null hypothesis. Hence, the null hypothesis is rejected, assuming a 95% confidence interval. Some of the respondents strongly agreed that the use of the technology enhances the formulation of budget in the in the accounting systems of public institutions. Some also were with the assertion that technology has enhanced local government to formulate and analyze operational and capital budgets as well as administration of performance measurement programs. Budgeting technology and the systems have the ability to change current requirements for budget formulation. This finding has positive relationship with the finding of (Bruno et al., 2013). His finding indicates that technology helps in budget formulation. His study concluded that technology is widely used in public institutions due its variety of benefits. The findings of the study of Frimpong et al., (2018) showed that despite certain challenges identified with the use of computerized accounting in Ghana, its usage is very predominant among businesses in the country.

4.3.2 Objective Two:

The second objective of this study was to examine the challenges faced by public institutions in the adoption and implementation of technology in their accounting systems. The result of the analysis obtained in section 4.2.2 showed that majority of the respondents strongly agreed that they face challenges in implementing the new technologies in the public financial management reform. They indicate some of the challenges to include resistance to changes and modern ways of doing things, lack of financial resources for staff training, audit difficulties associated with use of technology, the complexity of accounting software packages and lack of political support for public financial management reforms. The Z-test statistics result of this study indicates that public institutions do face challenges in implementing technology in their accounting systems since the computed Z-test statistics value obtained was 6.65 which falls on the rejection region of the hypothesis. Hence, the null hypothesis was rejected since the Z-test value is 6.65 is greater than Z-critical value of 1.96, assuming a 95% confidence interval. The outcome is in line with that of Frimpong et al., (2018). Their study revealed that the complexity of accounting software packages, high cost of accounting software, fear of computers and technology as a whole and resistance to changes and modern ways of doing things are some of the factors that prevent businesses from switching from manual to computerized accounting. Yeboah et al., (2014) also reveal that lack of Information Technology expertise, suitability and cost of accounting software and data security were seen as a major challenge to the adoption and use of Information and Communication Technology in public institution. According to Yeboah et al. Though Information and Communication Technology has the potential to improve the efficiency and effectiveness of public sector accounting in Ghana, it must be backed by constant employee training and regular software upgrades to meet international accounting standards

4.3.3 Objective three

The third objective is the main purpose of this study. This objective was to investigate the impact of the adoption of technology as part of the public financial management reform on the accounting systems of public institutions in Ghana. From the table 4.2.3 the analysis indicates that, majority of customers strongly agreed that technology has impacted positively on the accounting systems in the public institutions in Ghana. Majority of the respondents revealed that the use of technology in the accounting systems of public institutions has, among others, contributed to improved decision making, enhanced accountability, strengthened effective budgeting, and aiding long-term financial planning. The analysis again revealed that the impact of technology on the accounting systems of the institutions is the ability to develop and use computerized systems to track and record financial transactions, timely delivery of financial statements, producing error free financial statements and the creation of avenue to access financial information. The result produced a Z-test-statistics of 2.16 greater than the critical value of 1.96. Hence, the null hypothesis was rejected, assuming a 95% confidence interval. This implies that the adoption and application of technology have positive impact on the accounting systems of public institutions in Ghana. This result is in line with the result obtained by Ghasemi et al., (2011) whose study reveals that the biggest impact IT has made on accounting is the ability of companies to develop and use computerized systems to track and record financial transactions. IT networks and computer systems have shortened the time needed by accountants to prepare and present financial information to management. This system allows companies to create individual reports quickly and easily for management decision making. Other capabilities of computerized accounting systems are: increased functionality, improved accuracy, faster processing, and better external reporting. The study of Yeboah et al., (2014) also revealed positive effects of Information and Communication Technology, such as timely delivery of financial statements, producing error free financial statements and the creation of avenue to access financial information. Frimpong et al., (2018) highlighted the positive impact of technology on accounting systems by urging Businesses to invest in computerized accounting because it simplifies and speeds up accounting operations and any investment thereof with regards to accounting software new releases and updates in the short and long terms is worth doing.

4.4 Conclusion

This study set out to investigate the impact of technological development on accounting systems in public institutions in Ghana. The study has other two objectives: To assess the level of acceptance and usage of technological tools in public institutions as way of public financial management reform in Ghana and finally to assess the challenges faced by public institution to implement technology in their accounting systems in their quest to pursue public financial management reform. The study used questionnaires to collect primary data from respondents. Respondents for this study, who are mainly employees of public institutions in Ghana, precisely those public institutions in Tamale Metropolis of Ghana. The respondents were conveniently drawn from eleven (11) public institutions in the Tamale Metropolis mostly heads of the institution and other senior staffs in one Group (Heads group) and the key users of accounting technology who are the accountants, budget officers, procurement officers, internal auditors etc. in another group (Accountants group). The major findings of the study were that the adoption and application of technological development in the accounting systems of public institutions in Ghana is high. Most of the respondents strongly agreed and stated the following benefits and the reasons why the use of these accounting technologies is high in the public institutions. The respondents strongly agreed that the use of the technology enhances the formulation of budget in the accounting systems of public institutions. Some also were with the assertion that technology has enhanced local government to formulate and analyze operational and capital budgets as well as administration of performance measurement programs. Technology in the accounting systems have the ability to change current requirements for budget formulation. Also, most of the respondents strongly agreed that there are challenges faced by public institutions in Ghana in their quest to implement the technologies in their accounting systems and the result revealed some of these challenges to include: Resistance to changes and modern ways of doing things, lack of financial resources for staff training, audit difficulties associated with use of technology, the complexity of accounting software packages and lack of Political Support for Public Sector Accounting Reforms. Finally, the result indicates that there is significant impact of technological development on accounting systems of public institutions in Ghanaian. Majority of the respondents revealed that the use of technology in accounting systems of public sector institutions has, among others, contributed to improved decision making, enhanced accountability, strengthened effective budgeting, and aiding long-term financial planning. The analysis again revealed that the impact of technology on the accounting systems of the institutions is the ability to develop and use computerized systems to track and record financial

transactions, timely delivery of financial statements, producing error free financial statements and the creation of avenue to access financial information.

4.5 Recommendations and Suggestions

Based on the finding of this study, the following recommendations are provided in the paragraphs below for policy direction:

Government and donor organizations should support public Sector entities with computers and capacity of staff to enhance the implementation of government reforms. There should also be the provision of internet facilities to the rural districts to enhance their accounting performance.

There should be collaboration between academia and government financial management actors such as Controller and Accountant General Department (CAGD), sub-vented organizations, public corporations and companies and the Ghana Audit Service. This will go a long to strengthen the reforms or technology adoption and application or other reforms that government want to embark on in public financial management.

To the district assemblies, it is recommended that, they must ensure that, all the necessary factors that are put in place to enhance the implementation of accounting technologies are strictly adhered to. The factors which includes the organizational structures, values, culture, ethical considerations, political support among others must be strictly adhered to which would promote segregation of duty and prevent collusion and hence would enhance accountability

In light of the discoveries obtain from the investigation, the paper presumes that technological development such as GIFMIS and IPPD2 are veritable device for public sector financial management reform because to some extent it has the advanced efficiency, effectiveness, accountability, transparency, security of information management and exhaustive financial reporting.

This study also gives contribution to parties, individual or institutions. Hence the current research can be as reference for further research in future, especially those researches related to technological development and accounting systems.

In future researchers may look at the adoption of ICT by privately owned institutions in Ghana and compare with public institutions. The analysis will bring out ICT adoption differences and similarities between public and private institutions in Ghana

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