

# Determinants of Computerized Accounting Information System Adoption by Hospitals in Addis Ababa, Ethiopia

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## Abstract

The purpose of this study is to investigate factors that affect adoption of computerized accounting information system by hospitals in Addis Ababa. It examines the effect of cost-benefit perception, perceived ease of use, human resource, firm size and management commitment on computerized accounting information system adoption. The study adopts explanatory research design along with census survey of all of 52 hospitals in Addis Ababa. Primary data was collected from these hospitals. The main findings indicate that adoption of computerized accounting information system is significantly affected by perceived ease of use, human resource and management commitment. Furthermore, cost-benefit perception and firm size are not significantly related to adoption of computerized accounting information system. The study recommends that hospitals should attempt to employ qualified and competent personnel; accounting information system vendors should provide packages that are easy to use and management to support accounting information system implementation.

**Keywords:** Computerized accounting information system, perceived ease of use, Addis Ababa

## 1. Introduction

It has frequently been said that accounting is the language of business. If that is the case, then an accounting information system is the intelligence or the information providing vehicle of that language. Accounting information system is a system that gathers, records, stores, and processes data to produce information for decision makers. (Romney and Steinbart, 2012)

Accounting information system is defined as a computer-based system that processes financial information and supports decision tasks in the context of coordination and control of organizational activities (Nicolau, 2000).

An accounting information system can be either manual system or a computerized system that use information technology or something in between. The procedure is the same without regarding the approach taken. Accounting information system must gather, enter, process, store and report financial information. The manual or computer hardware and software are the tools used to produce the information (Romney and Steinbart, 2012).

Computerized accounting information systems have replaced manual-based accounting system in virtually all businesses and organizations giving accountants, managers, employees and stakeholders' access to important accounting information (Albright 2006).

According to Gwangwava et al (2012), computerized accounting system has three main advantages than manual accounting system: computerized systems automate and simplify the process of recordkeeping, allowing all transactions to be recorded in electronic format and posted automatically to ledger; computerized accounting systems are more accurate, make fewer mistakes than manual accounting systems; and computerized accounting systems are real time and provide updated information on account balances and the status of accounts.

As we live in the age of technological advancement, the role of computerized accounting information systems is of greater importance in managing an organization and implementing internal control systems. Accounting information systems allows a company to manage its business with potential benefits of improved process flow, reduced inventories, better data analysis and customer service, and increased profit margins (Gwangwava et al, 2012).

The significance of accounting information system in the economy of a nation has been recognized universally, particularly in the contribution to the economic management of developing economy, where the contribution of accounting information system towards growth, creating job opportunity and social progress is highly important. The role played by accounting firms has been enhanced by the development of accounting information system, which has contributed to the professional values added to these organizations (Laudon, 1991). Truth to be told, computerized accounting information system employed by software experts to process accounting information systems with a good support of financial statements have reduced the human error factor, compared to manual systems (Dalci and Tanis, 2009). Accounting information system also provide information on actual budgets of the organization that will help the company's management to plan and control business operations, but an appropriate framework that determine the usage and impact of accounting information system is yet to be determined. According to Ahmed et al (2016), accounting information system is beneficial and valuable to the all types of business regardless their size, it can provide help during all the process of decision making and enhance business performance and strategies. Consequently, many organizations should adopt and practice accounting information system in order to manage, execute and control adequately in all areas and

functions.

According to Yuvaraj and Kibret (2013), accounting information system plays a vital role if it has a potential for making administrative decision otherwise it misleads user's idea and also that lead them to make wrong decisions.

Despite all the advantages associated with the use of computerized accounting information system, hospitals in Ethiopia are still disinclined to adopt this technology. Ethiopian firms have poor accounting records for the purpose of avoiding tax and other obligations, which creates twofold problem. Poor records make it difficult for companies to get reasonably valued credit and then to manage their affairs effectively if they do get credit. Failing to make efficient decision based on financial information is a feature of firms in Ethiopia due to multiple books kept by businesses, so that most companies do not have audit-worthy financial records (Yuvaraj and Kibret, 2013).

Malik and Khan (2009) conducted a study in Pakistan and found that common challenges for implementing computerized information system include poor electricity supply, lack of computer infrastructure, insufficient and unsustainable funding and inadequate education. Ismail et al (2010) conducted a study and explore lack of commitment, inability to provide extensive information technology infrastructure, difficulty of obtaining suitable hardware and software as well as lack of skilled information technology personnel are factors that hinder implementation of computerized information system of tertiary hospital in Malaysia.

Business organizations in Ethiopia are characterized by low level of technological adoption and inefficient accounting system because of poor accounting records and non compliance of their accounting reports with international accounting standards (Talegeta, 2014; Wegen, 2014).

However, to the best of the researcher's knowledge studies have not been made to identify the determinants of adopting computerized accounting information system by hospitals in Ethiopia in general and Addis Ababa in particular. Therefore the objective of the study is to identify factors that affect adoption of computerized accounting information system by hospitals in Addis Ababa.

## **1.1 Objectives of the study**

### **1.1.1 General Objective**

The general objective of the study was identifying the determinants of adoption of computerized accounting information system in hospitals in Addis Ababa region.

### **1.1.2. Specific Objectives**

- To investigate the relationship of computerized accounting information system adoption with management commitment and human resource.
- To examine the relationship between adoption of computerized accounting information system and perceived ease of use, cost-benefit perception and firm size.

## **2. Literature Review**

An accounting information system is a collection of resources such as individuals and equipment designed to transform financial and other data in to information. This information is communicated to a wide variety of decision makers. Bookkeeping data frameworks perform this change whether they are basically manual frameworks completely computerized (Bodnar and Hopwood, 2013).

Computerized accounting information system is an electronic based system that processes financial data and underpins errand of decision making within the setting of monetary administration and firm exercises. (Nicolau, 2000).

As discussed in various literatures, adoption of computerized accounting information system can be affected by several factors. Factors that have gained more focus in this study are discussed in detail in the following sections.

### **2.1 Cost- Benefit Perception**

Perceived net benefit is the belief that the technology will provide benefit of greater value than its costs. The potential advantage of accounting information technologies consists of cost savings and performance improvement. Cost-benefit perceptions tend to have an impact on non adoption of accounting information systems. The essential and common assumption in analyzing consumer behavior is value maximization. Guo and Feng (2008) argued that chief executive officer who perceived the potential net benefits (excess of benefits over costs) of using accounting information technologies is more likely to adopt them than a chief executive officer who does not perceive the net benefit of the technology.

### **2.2 Human Resource**

Human resources are most likely to be core sources of continuous competitive advantage of organizations (Barney and Wright, 1998). According to Arocas and Camps, (2012), human asset have an impact on

organizational performance. However, human resource is also main part of accounting information system as they are involved in data entry, processing, and output. ALshbiel and Al-Awaqleh, (2011) in their study reported a positive relationship between human resource and adoption of computerized accounting information system in the hospitals of Jordan. Ahmed et al (2016) found a significant correlation between human resource and intention to adopt computerized accounting information system. Gibson et al (2000) found that lack of skilled personnel is the main problem for small businesses not to adopt information technology in Canada.

### **2.3 Perceived Ease of Use**

Perceived ease of use can be defined as the degree to which an individual believes that using a particular system would be free of physical and mental effort (Davis 1993). According to Muhammad et al (2017), perceived ease of use means the user perceived that the system is very simple to use. Therefore, it is believed that users' behavioral intention to use the system increases when system is perceived not difficult to use. Users that perceive accounting information systems to be easy to use are more likely to adopt the technology than those that do not. In line with this, Legrisa (2003) suggested that perceived ease of use is one of the most important factors in explaining accounting information technology adoption. Thus the behavioral intention of chief executive officer to adopt accounting information technologies is influenced by their perception of the characteristics of electronic means. Therefore, chief finance officers who perceive accounting information technologies to be easy to understand and use, are more willing to adopt electronic means. On the other hand Nasri and Charfeddine, (2012) in their study found that there is no significant relationship between perception of a system as simple to use and behavioral intention to use.

### **2.4 Firm Size**

Information technology was limited to large companies in previous decades and can be used by small and medium enterprises to enhance their performance (Ahmed et al, 2016). According to Gwangwava et al (2012), firm size of a business also influences the intention to adopt accounting information systems. The size of firm gives money related assets to acquire a new innovation and empowers spending on innovative activities. Larger firms are more likely to be able to invest large amounts of capital, time and learning in order to use the technologies than smaller firms.

### **2.5 Management Commitment**

Management commitment is a style of leadership where both the manager and the subordinate participate together in the foundation of work objectives, define authority levels, and clarify the performance commitments. Management commitment is an underwriting to characterize, defend and support the main activities from the earliest starting point to development of a project (Englund and Bucero, 2006).

Management commitment is very essential since without commitment of top management implementation of many information system projects will fail. This is because management is a noteworthy supporter of information system implementation in terms of guaranteeing the availability of resources, human resources and visibility of system implementation (Schwalbe, 2006).

According to Cooper (2006), responsibility of top management is engaging in and maintaining behaviors that others achieve the goals. Management commitment will improve the effectiveness of accounting information system. Thong, et al. (1996) argue that if there is low level of top management support then top management may not involved in aspects of information system implementation. They found that management commitment improve the effectiveness of information system implementation, because they provide the resources needed for information system projects. Rahayu (2012) on his study found that management commitment has adequate effect on accounting information system implementation.

## **3. Research Methodology**

As the objective of the research is to examine the relationship between computerized accounting information system and its determinant factors, explanatory research design has adopted. The target population for the study is hospitals in Addis Ababa city. According to Addis Ababa city health bureau there are a total of 52 hospitals, 12 of them are state run and 40 are privately owned hospitals in the city. For the purpose of this study since the target population is too small census survey has been conducted. The study has used primary data collected through structured questionnaires which is constructed on a likert scale and the gathered data was analyzed with the help of STATA14 software.

### **Model Specification**

Implementation (adoption) of computerized accounting information system can be affected by a number of factors. For the purpose of this study, the dependent variable (adoption of computerized accounting information system) is measured by questions developed on a likert scale basis and respondents are asked to rate each question ranging from strongly disagree to strongly agree. For this reason (ordered ranking nature of the

dependent variable i.e computerized accounting information system adoption), ordered logistic regression model has been employed.

In this study adoption of computerized accounting information system will be explained by cost-benefit perception, human resource, perceived ease of use, firm size and management commitment which can be specified as follows:

$$ACAIS = \beta_0 + \beta_1CBP + \beta_2HR + \beta_3PEOU + \beta_4FS + \beta_5MGTC + \varepsilon$$

Where:

ACAIS- Adoption of Computerized Accounting Information System

CBP- Cost- Benefit Perception

HR- Human Resource

PEOU-Perceived Ease of Use

FS- Firm Size

MGTC- Management Commitment

$\varepsilon$  – error term

#### 4. Data Analysis

Cost-benefit perception, human resource, infrastructure, perceived ease of use, firm size and management commitment were the independent variables tested by adopting binary logistic regression model.

The study used questionnaire to collect primary data. 52 questionnaires were distributed and 50 of them are returned which bears a response rate of around 96%.

##### 4.1 Determinants of Computerized Accounting information System: Ordered Logistic Regression Analysis

The result of ordered logistic regression shows that human resource, perception of ease of use and management commitment were found to be statistically significant factors for the adoption of computerized accounting information system.

**Table 1: ordered logistic regression result**

Log likelihood = -13.962809						Number of obs = 50	
						LR chi2(6) =132.82	
						Prob > chi2 =0.0000	
						Pseudo R2 = 0.8263	
Acais	Coef.	Std. Err.	Z	P>z	[95% Conf. Interval]		
Cbp	.8540054	.9015893	0.95	0.344	-.9130771	2.621088	
Peou	1.987319	.9580668	2.07	0.038	.109542	3.865095	
Hr	.9400499	.3496509	2.69	0.007	.2547468	1.625353	
Fs	.2787842	.3856464	0.72	0.470	-.4770689	1.034637	
Mgtc	1.464091	.4272886	3.43	0.001	.6266209	2.301561	
/cut1	11.35044	2.46836			6.512542	16.18834	
/cut2	14.55477	2.829309			9.009425	20.10011	
/cut3	18.34725	3.509141			11.46946	25.22503	
/cut4	21.506626	3.937305			13.84929	29.28324	

Source: stata14, 2018

As it is shown in the above table, there is a positive but statistically insignificant relationship between adoption of computerized accounting information system and cost-benefit perception. There is no difference in adopting computerized accounting information system between hospitals who perceive excess of benefits over costs of using it and who don't perceive. This result is contradicted with Guo and Feng (2008) who found cost-benefit perception positively and significantly affects the adoption of computerized accounting information system.

Perception of ease of use and adoption of computerized accounting information system found to be having a positive and significant relationship in this study. This result suggests that if a hospital who perceives the technology as easier to use and implement, the likely hood of adopting it will be high than hospitals who don't perceive it as easy to use. This finding is also supported by Legerisa (2003) who found perceived ease of use an important factor for explaining computerized accounting information system. A study conducted by Abera (2017), found insignificant relationship between complexity of the system and adoption of it by large and medium enterprises in Addis Ababa. This is also supported by Nasri and Charfeddine (2012) who found perceived ease of use hasn't a significant effect for the adoption of computerized accounting information system.

In this study, human resource is found having a positively significant impact on the adoption of computerized accounting information system in hospitals of Addis Ababa. This implies that organization who have qualified and competent manpower are more likely to adopt computerized accounting information system. This is also supported by Ahmad etal (2013) who found that human resource is significantly correlated with adoption of computerized accounting information system. Additionally, Alshbiel and Alawaqleh (2011) in their

study found that human resource has a positive and significant impact on the adoption of computerized accounting information system.

As it is depicted in the table, firm size did not appear to have a significant effect on the adoption and implementation of computerized accounting information system by hospitals in Addis Ababa. This suggests that hospitals adopt computerized accounting information system regardless of their size (i.e either big or small companies will adopt it). This result is in contradiction with the findings of Fagbemi and Olaoye (2016) who found firm size in terms of capital base has a direct association with the adoption of accounting information system. Similarly, the finding in this study is against the finding in Gwangwava et al (2012) who found a positive and significant relationship between adoption of computerized accounting information system and firm size.

Finally, this study found that management commitment and computerized accounting information system adoption have a positive and significant relationship. The result is towards the argument that the more management commitment and support, the more likelihood adoption of computerized accounting information system. This finding is supported by Sharma and Yetten (2003) who concluded that management commitment (management support) to be one of the critical factors in the successful implementation of computerized accounting information systems. Similarly, Schwalbe (2006) argues that without top management commitment support, implementation of computerized accounting system will fail. Ahmad et al (2013) also found there is significant relationship between management commitment and computerized accounting information system.

## 5. Conclusion and Recommendation

The major objective of this study is identifying factors of computerized accounting information system adoption by Hospitals in Addis Ababa. The determinant factors that are examined in this study are cost-benefit perception, perceived ease of use, human resource, firm size and management commitment.

The findings imply that perceived ease of use (positive), human resource (positive) and management commitment (positive) are the significant factors that affect the adoption of computerized accounting information system by hospitals in Addis Ababa.

Accordingly, perception of potential excess of benefits received over costs of using computerized accounting information system will increase the adoption of it. Moreover, if there is competent and qualified human resource to operate the system in the organization, there is a high probability of adopting computerized accounting information system. Additionally, an organization with highly commitment and support from management is more likely to adopt computerized accounting information system.

Based on the findings the following recommendations are forwarded.

- Human resource has a positive and significant impact on the decision of the firm to adopt or not adopting computerized accounting information system. Hospitals should attempt to employ qualified and competent employees to use computerized accounting information systems and have to give software training for their employees, so that they can adopt it. This can be done in collaboration with higher education institutions to come up with appropriate curriculum and department to provide qualified graduates.
- As the finding in this study indicates that perceived ease of use has a positive significant impact on adoption of computerized accounting information system, it is recommended that accounting information system vendors should strive to provide custom made accounting information packages that are easy to use.
- The study finds a strong support for the argument that companies with high management commitment are more likely to adopt computerized accounting information system than companies with little or no commitment and support. The study recommends that management should support accounting information system implementation, ensuring availability resources and facilitation of training to accountants.

## References

- Ahmed, A., Rand, A., & Raed, M. (2016). Interrelated factors influencing the adoption decision of AIS Applications by SMEs in Jordan. *International Business Research*, 9(10), 46-62.
- Ahmad, A., Mohammed, H., Nik, K., & Jamal, A. (2013). Factors that Affect Accounting Information System Implementation and Accounting Information Quality: A Survey in University Utara Malaysia. *American Journal of Economics*, 3(1), 27-31.
- ALshbiel, O., Al-Awaqleh, A. (2011). Factors Affecting the Applicability of the Computerized Accounting System, *International Research Journal of Finance and Economics*, Issue 64
- Barney, B., & Wright, M. (1998). On becoming a strategic partner: the role of human resources in gaining competitive advantage. *Human Resource management*, 37 (1), 31-46.
- Bodnar, H., & Hopwood, S. (2004). *Accounting Information Systems, 9<sup>th</sup> Edition*. Upper Saddle River, New Jersey: Pearson Education Inc.

- Chow, M., Herold, D. K., Choo, T. M., & Chan, K. (2012). Extending the technology acceptance model to explore the intention to use second life for enhancing healthcare education. *Computers & Education*, 59(4), 1136-1144.
- Cooper, D. (2006). *The Impacts Management Commitment on Employee Behavior: A Field Study*, Kindom of Bahrain: American Society of Safety Engineers, Middle East Chapter, Proffesional Development Conference and Exhibition.
- Dalci, I, & Tanis, N. (2009). "Benefits of Computerized Accounting information systems on the JIT Production System, *Review of Social, Economic & Business Studies*, vol. 2, pp. 45 -62.
- Davis, D. (1989). Perceived usefulness, perceived ease of use and user acceptance of information technology, *MIS Quarterly*, 11 (13), 319-339.
- Englund, R, & Bucero, A. (2006). *Project Sponsorship: Achieving Management Commitment for Project success*. John Wiley & sons. Inc., San Francisco.
- Fagbemi, O., & Olaoye, A. (2016). An Evaluation Of Accounting Information System And Performance Of Small Scale Enterprises In Kwara State, Nigeria, *DBA Africa Management Review*, 6(1), 1-16.
- Gibson, N., Holland, P., & Light, B. (2000). Enterprise Resource Planning: A Business Approach to Systems Development. *32nd Hawaii International Conference on System Sciences, Maui, HI, IEEE Computer Society Press, Los Alamitos*.
- Guo, J., & Feng, X. (2008). The Adoption of Accounting Information Technology in SMEs in West China. *MIS Quarterly*, 13 (3), 319-340.
- Gwangwava, E., Chinhoi, R., & Faitira, M. (2012). Evaluation of Factors Influencing Adoption of Accounting Information System by SME in Chenoa. *Interdisciplinary Journal of Contemporary Research Business*, 4(6), 1126-1136.
- Ismail, A. (2010). *The Impact of Information Technology on Performance: The Mediating Role of Management Accounting Systems*.
- Khan, E., & Malik, S. (2009). Implementation of an Electronic Hospital Information System in a Developing country: A case study of Pakistan, masters Dissertaiton Amnaan University.
- Laudon, C, (1991 ). Data Quality and Due Process in Large Inter-organizational Record Systems. *Communications of the ACM*, 29(1), 4-11.
- Legrisa, A. (2003). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly* 13 (3), 319-340.
- Muhammad, K., Siti, S., & Aidi, A. (2017). The Influence of Perceived Usefulness and Perceived Ease of Use on the Continuous Intention to Use Electronic Collection System in Nigerian Hospitals: A Conceptual Approach. *Asian Journal of Multidisciplinary Studies*, 5(6), 225-229.
- Nasri, W. & Charfeddine, L. (2012). Factors affectiong the adoption of internet banking in Tunisia: an integration theory of acceptance model and theory of planned behavior, *Journal of high technology management research*, 23(1); 1-14.
- Nicolaou, A.(2000). A Contingency Model of Perceived Effectiveness in Accounting Information Systems: Organizational Coordination and Control Effects. *International Journal of Accounting Information Systems*, 1, 91-105.
- Rahayu, K. (2012). The factors that support the implementation of accounting information system: A survey in Bandung and Jakarta's taxpayer offices, *Journal of global management*.
- Romney, M., & Steinbart, P. (2012). *Accounting information systems*, 12<sup>th</sup> ed.
- Schwalbe, K. (2006). *Introduction to Project Management: Course technology*, Thomson Learning. Inc. Cengage Learning, Inc., Boston, Massachussetts, USA.
- Sharma, R., & Yetton, P. (2003). The Contingent Effects of Management Support and Task Interdependence on Successful Information Systems Implementation, *MIS Quarterly research*, 27(4), 533-555.
- Talegeta, S. (2014). Innovation and barriers to innovation in small and medium enterprises in Addis Ababa. *J. Small Bus. Entrep. Dev.* 2(1), 83-106.
- Thong, L., Chee-Sing, Y., & Raman, S. (1996). Top Management Support, External Expertise and Information Systems Implementation in Small Businesses. *Information Systems Research*, 7(2), 248-267.
- Wegen, D. (2014). Small and micro enterprises (SMEs) in Addis Ababa, Ethiopia: Development and poverty reduction through information and telecommunication technologies, with particular to hotel industry. Dissertation paper submitted to the University of West London. UK.
- Yuvaraj, S., & Kibret, B. (2013). Evaluating the Design of Accounting Information System and its Implementation in Ethiopian Manufacturing Industries. *Research journal of science and IT management*, 2(7), 16-29.