



The Effect of Accounting Information System on the Decision-Making Process of Addis Ababa City Electric Utility's

Minwyelet Wendyifraw Yigrem, MBA¹, Cherinet Yigrem, PhD¹, Hanna Yeshinegus, PhD²,
Achamyeleh W. Yigrem, MBA²

^{1,2} Admass University Department of Accounting and Finance: Africa Avenue, Addis Ababa, Ethiopia

¹ Howard University, Department of Biology, 415 College St. NW Washington DC20059

ABSTRACT: One of the supporting information systems utilized in performing managerial tasks including planning, organizing, controlling, and decision-making for the better utilization of the resources available is Accounting Information Systems. The main objective of this study was to determine the effect of Accounting Information Systems on the decision-making process in the case of Addis Ababa City Electric Utility related to inventory management, Internal control system, bill collection (sales,) and financial statements. The researcher used both primary and secondary data and used explanatory research methods. The researcher used a random sampling technique and distribute questionnaires to the Addis Ababa City Electric Utility staff and used Pearson correlation and linear multiple regression to check the relationship and effect between the variables respectively. The finding of this study showed that accounting information systems have a positive and significant effect on inventory management, financial statement, bill collection, and internal control system in the decision-making process. As a result, the researcher came to the conclusion that the accounting information system significantly and favorably influences the decision-making process. For better decision-making, the study recommends businesses employ accounting information systems.

KEYWORDS: Accounting Information System, Bill Collection (sales), Decision-Making Process, Financial Statements, Inventory Management, Internal Control System.

1. INTRODUCTION

1. Background of the study

A system for gathering, recording, storing, and processing data to create information for decision-makers is known as an accounting information system. It consists of personnel, guidelines and instructions, information, software, hardware, internal controls, and security measures (Romney, 2015).

There are six components of AIS: the people who use the system, the procedures and instructions used to collect, process, and store data, the data about the organization and its business activities, the software used to process the data, the information technology infrastructure, including the computers, peripheral devices, and network communications devices used in the AIS and, the internal controls and security measures that safeguard AIS data. These six components enable AIS to fulfill three important business functions:

1) gather and save information about the staff, resources, and activities of the organization. Business operations that are often repeated by organizations include buying raw materials or making sales. 2) transform data into information to enable management to organize, carry out, monitor, and assess processes, resources, and employees, and, 3) set up sufficient measures to protect the organization's resources and data. Since AIS provides accounting data, AIS expertise and understanding are essential to an accountant's professional success. One of the most crucial things that accountants do is interact with AIS. (Romney, 2015).

Well-designed AIS can add value to an organization by:

1. Improving the value and lowering the price of goods or services. AIS, for instance, can keep an eye on equipment so that operators are informed right away if performance deviates from accepted quality standards. This maintains product quality while lowering expenses and waste (Romney, 2015).

2. Increasing effectiveness. A just-in-time production strategy, for instance, depends on timely information since it necessitates continuous, precise, and current knowledge about raw material inventories and their locations (Romney, 2015).



3. Sharing information Sharing skills and knowledge can boost productivity and provide a company with a competitive edge. CPA companies, for instance, use their information systems to enable communication across offices and to share best practices. Employees can search the corporate database to find specialists who can help a specific client, making the global experience of a CPA company accessible to each local client (Romney, 2015).

4. Increasing the supply chain's effectiveness and efficiency. Direct customer access to inventory and sales order entry systems, for instance, can lower sales and marketing expenses while enhancing customer retention rates. (Romney, 2015).

5. Enhancing the internal control framework. An effective internal control framework for AIS can assist safeguard against fraud, mistakes, system failures, and disasters. (Romney, 2015).

6. Improving decision-making. Improved decision-making is vitally important and is discussed below in more detail (Romney, 2015).

The Accounting Information System (AIS), which deals with data processing, is the most crucial component of the Management Information System (MIS). In order to help its end user, make decisions, AIS identified, recorded, analysed, summarized, and communicated economic information Buljubašić (2015) According to Romney (2006) an accounting information system is a system that compiles documents, stores them, and then processes the information to create data for decision-makers. Meanwhile, according to Burdick (2004), Accounting information systems are defined as a group of resources, including people and equipment that are used to transform financial data and other data into information. Decision-makers are informed of this information. According to Baganoff (2010) understanding an accounting information system is a collection of data and processing techniques that generates the required information for its consumers. As a collection of parts, AIS gathers accounting data, stores it for later usage, and then processes it for end users. The theories put forth lead to the conclusion that the accounting information system is a combination of physical and non-physical sub-systems or components that work together to transform financial data into financial information. The component of an accounting information system includes hardware, software, mental processes, databases, and network communication technology (Azhar, 2004).

The purpose of an accounting information system is to gather, process, and store data on the economic activities of business enterprises so that stakeholders may make decisions about the businesses (David, 1999). Having a good and reliable accounting system has become a major concern for all managers as it leads to better management decisions and analysis of an organization's performance.

Many researchers have studied the use of accounting information systems in the decision-making process. For example, Ježovita (2015) examined the value of accounting data and data from annual financial statements in the process of making business decisions, and Adenike (2017) examined how the accounting information system prevents fraud and poor management, and how well it supports decision-making.

Ethiopian scholars have also conducted research on the effect of accounting information systems and decision-making processes. For instance, Tefera (2003) examined that complete, timely and, accurate accounting information leads to better decision-making, and based on Gebremedihin's (2019) study, the decision-making process is significantly impacted by the accounting information system.

The purpose of this study is to close a knowledge gap about how Addis Ababa City Electric Utility's Accounting Information Systems affect decision-making. The study covered issues that other researchers had not examined, with a particular focus on internal control systems, financial statements, bill collection (sales), inventory management, and how can AIS assist with efficient decision-making processes.

2. Objective of the Study

This study aims to achieve the following objectives:

1. To identify the effect of AIS on management's decision making the case of Addis Ababa City Electric Utility
2. To identify the effect of Inventory management when using AIS on the decision-making process in the case of Addis Ababa City Electric Utility
3. To identify the effect of Bill collection (sales) when using AIS on the decision-making process in the case of Addis Ababa City Electric Utility



4. To identify the effect of the financial reports when using AIS on the decision-making process the case of Addis Ababa City Electric Utility
5. To identify the effect of the internal control system when using AIS on the decision-making process in the case of Addis Ababa City Electric Utility

1.3. Hypothesis of the Study

1. The following theory was developed in light of the problem statement above:
2. H0: AIS has no significant effect on decisions making process.
3. H1: AIS has a significant effect on the decision-making process.
4. Ha0: Inventory management has no significant effect on the decision-making process.
5. Ha1: Inventory management has a significant effect on the decision-making process.
6. Ha0: Bill collection (sales) has no significant effect on the decision-making process.
7. Ha2: Bill collection (sales) significant effect on the decision-making process.
8. Ha0: Financial statement has no significant effect on decisions- making process.
9. Ha3: Financial statement has a significant effect on decisions- making process.
10. Ha0: Internal control system has no significant effect on the decision-making process.
11. Ha4: Internal control system has a significant effect on the decision-making process.

2. METHODOLOGY OF THE STUDY

2.1. Research Design

The study used both descriptive and explanatory research designs. The primary purpose of the study was to examine the effects of AIS on the decision-making process in the case of Addis Ababa City Electric Utility. An explanatory research design was used in this study to see the direction of the relationship and strength between independent and dependent variables. The explanatory research design was used to explain and predict the cause-and-effect relationships between variables.

2.2. Target Population

The target population for this study was 3000 Addis Ababa City Electric Utility employees. The target population for the study covers departments of Addis Ababa City Electric Utility and four districts under Addis Ababa City Electric Utility (EAAD, SAAD, and NAAD & WAAD) and thirty customer service centers found in Addis Ababa.

2.3. Sampling techniques and sample size

A sample size of 353 respondents was determined by the Slovin (1960) formula.

Has been used to determine the minimum sample size= $n=N/1+Ne^2$

$$n=N/1+Ne^2=3000/1+3000(0.05)^2$$

$$n=3000/1+3000(0.05)^2$$

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$$n=3000/1+3000(0.05)^2$$

From the total population, 353 samples have been taken by random sampling technique.

2.4. Data Type and Data Source

For the purpose of this study, the researcher collects data using both primary and secondary sources. Primary data will be gathered using questionnaires and interviews given to a sample of Addis Ababa City Electric Utility employees. Secondary data was gathered from a variety of books, journals, archival research, and websites in preparing the literature reviews to clarify most of the issues.

2.5. Data Analysis

The purpose of data analysis is to identify whether research assumptions will be correct or not and to highlight possible new views on the problem under study. The ultimate purpose of the analysis is to answer the research questions outlined in the objectives with the collected data. After the data is collected and coded the data is analysed using inferential statistics analysis both correlation and multiple regression analysis were used through the use of Statistical Package for Social Scientists (SPSS) version 26 relevant methods of data analysis. Multiple regression analysis allows the exploration of interrelationships among a set of variables and is



used to address a variety of research questions. It helps to explore the relationship between one continuous dependent variable and a number of independent variables, (Hildingsson, 2013).

3. RESULT AND DISCUSSION

3.1. Research distribution

The researcher distributed 353 questionnaires to Addis Ababa City Electric Utility employees in Addis Ababa. But 340 questionnaires were fully filled and returned with a response rate of 96.32%.

Table 3.1. Demographic information of Respondents

Variable	Category	Frequency	Percent
Gender	Male	192	56.47
	Female	148	43.53
Total		340	100
Age	20-30	76	22.35
	31-40	164	48.24
	41-50	62	18.24
	Above 50 years	38	11.18
Total		340	100
Education	Certificate	2	0.59
	Diploma	50	14.21
	First degree	236	69.41
	Above first degree	52	15.29
Total		340	100
Experience	0-5 years	56	16.47
	5-10 years	64	18.82
	10-15 years	90	26.47
	Above 15 years	130	38.24
Total		340	100
Department	Finance	92	27.06
	Automation (ICT)	32	9.41
	PLW	34	10
	HR	20	5.88
	Contract Administration	12	3.53
	Customer Service	68	20
	Distribution	82	24.12
Total		340	100

Source: survey, 2022

The result of the general information of the study population is presented in table 4.1. Demographic information of respondents. The result shows that out of 340 respondents (56.47%) were males and 43.53% were females. The majority of the respondents (48.24 %) were in the age range of between 31-40 years, 22.35% were in the age range 20-30, 18.24% were in the age range 41-50 and 11.18 % were in the age range above fifty years. And the education status of respondents is (69.41 %) have an education



qualification of the first degree, 15.29% have an education qualification of the above first degree, 14.71% have an education qualification of diploma, and 0.59% have an education qualification of the certificate.

Table 4.1. Demographic information of respondents shows that data was collected from Addis Ababa city electric utility head office and four districts. In addition, ninety-two (27.06%) were in Finance, thirty-two respondents (9.41%) were in Automation (ICT), thirty-four respondents (10.00%) were in PLW, twenty respondents (5.88%) were in HR, twelve respondents (3.53%) were in Contract Administration, sixty-eight respondents (20.00%) were in Customer Service, and eighty-two respondents (24.12%) were in Distribution. And table 4.1. Demographic information of respondents above shows that the majority of the respondents (38.24%) were above 15 years of work experience in Addis Ababa City Electric Utility, 26.47% worked from ten to fifteen years of work experience, 18.82% of the respondents were from five to ten years work experience and the remaining 16.47% of the respondents have an experience up to five years.

3.2. Correlation Analysis

The researcher applied Pearson’s correlation as it is the most widely used method of measuring the degree of relationship between two variables.

This study used both descriptive and explanatory designs to reach its objectives. Correlation analysis is one explanatory design that is intended to identify the relationship between independent variables, AIS, and dependent variables, in the decision-making process. Based on the assumption of the linear relationship between the variables, the Pearson correlation method is used to identify the relationship between the variables.

As it is shown in table 3.3 correlation analysis below all independent variables and dependent variables are positively and significantly correlated. The correlation coefficient between Internal control and the decision-making process is 0.640 and significance at a significance level of 0.01 implying that a good internal control system improves management’s decision-making. Inventory management and decision-making are positively correlated with a coefficient of 0.0.613 at a significance level of 0.01. If the organizations have good inventory management systems this implies that there is good management’s decision. The correlation between financial statements and decision-making is positive and significant at a significance level of 0.01 and a correlation coefficient of 0.623. This implies timely financial reports improve management’s decision-making. Bill collection (sales) and decision-making are positively correlated with a coefficient of 0.637 and a significance level of 0.01. This implies that when the bill collection (sales) of the organization increases it improves the income and management’s decisions.

Table 3.2. Correlation analysis

		Correlations				
		Decision making	Internal control	Inventory management	Financial statement	Bill collection
Decision making	Pearson Correlation	1	.640**	.613**	.623**	.637**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	340	340	340	340	340
Internal control	Pearson Correlation	.640**	1	.454**	.545**	.555**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	340	340	340	340	340
Inventory management	Pearson Correlation	.613**	.454**	1	.697**	.685**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	340	340	340	340	340
Financial statement	Pearson Correlation	.623**	.545**	.697**	1	.614**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	340	340	340	340	340
Bill collection	Pearson Correlation	.637**	.555**	.685**	.614**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	340	340	340	340	340

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



3.3. Regression Analysis

Regression analysis is used to identify the effect of AIS on the decision-making process. Hypotheses are tested by using this analysis. The researcher identified both general and specific objectives by using a regression method. The multivariate linear regression method is used to run the regression analysis. All decisions are made at the significance level of 0.05. The model is summarized by using adjusted R squared. ANOVA analysis is conducted by F-statistics. The significance of independent variables in explaining the dependent variable is decided by using both p-value and t-statistics. Before running the regression analysis, classical model assumptions were tested.

3.4. Validity

The degree to which the requirements of the scientific research method were adhered to while producing research findings can be used to explain the validity of a study. Oliver (2010) believes that for all types of studies, validity is a must. There are various types of research validity, the major ones of which are listed by Cohen L. M. (2007). As well as face validity, concurrent validity, internal validity, external validity, criterion-related validity, and content validity. All of the variables in the research report were taken from earlier studies, as was noted in the section on the literature review. Through a review of the literature and the modification of instruments from other studies, this study addressed content validity.

3.5. Reliability

Every time a single observer is the source of data, reliability is an issue because we have no surefire way to prevent the impact of that observer's subjectivity (Babbie, 2010).

Wilson (2010) asserts that subjectivity and reliability difficulties are frequently linked and that once a researcher adopts a subjective perspective on the study, the dependability of the work will be jeopardized.

Only variables with multiple measurement questions can be used to measure Cronbach's alpha, a reliability indicator that measures the variation accounted for in the real score of the underlying construct. While 0.5 is a good starting point, 0.7 is a better option. Therefore, Cronbach's alpha statistics are used to evaluate the questionnaire's reliability.

All Cronbach's alpha indexes are over 0.7, as shown in table 3.3 reliability analysis below, indicating that the variables are reliable for measuring AIS in the organization.

Table 3.3. Reliability Analysis

Variables	Cronbach's Alpha	N of Items
Reliability	0.933	16
Inventory management	0.816	3
Financial statement	0.909	4
Bill collection	0.876	3
Internal control	0.811	3
Decision making	0.827	3

Source: Own computation, 2022

3.6. Multicollinearity Test

Gujarati (2004) states that the multicollinearity problem arises when there is a linear relationship among explanatory variables that the result could not obtain estimates of all parameters. This causes large variance and standard error with a very low t- ratio and wide confidence interval. Different methods are often suggested to detect the existence of multicollinearity problems. The variance inflation factors (VIF) technique is used for continuous explanatory variables and the contingency coefficient (CC) method is used for dummy variables. For continuous variables, if the value of VIF is 10 and above, the variables are said to be collinear. Similarly, if the value of CC is greater than 0.75, the variables are said to be collinear. To detect the problem of multicollinearity the VIF technique is used prior to executing the regression analysis. As presented in table 3.5, multicollinearity test the values of VIF are well below 10 and suggest that there is no problem of multicollinearity among the study independent variables.



Table 3.4. Multicollinearity Test

Variables	Collinearity Statistics	
	Tolerance	VIF
Reliability	.644	.142
Inventory management	.407	2.455
Financial statement	.439	2.280
Bill collection	.446	2.244
Internal control	.624	1.602

Table 3.5. Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.761 ^a	.579	.574	.56436	1.807

Source: Own computation, 2022

Table 3.6 which is the ANOVA summarizes the model of the study by R-squared and Adjusted R-squared and Durbin-Watson. This summary is used to identify the role of AIS in this study in explaining decision-making. As it is shown in the table, R squared is 0.579, and adjusted R squared is 0.574 suggesting that 57.9% variation in the dependent variable is explained by independent variables used in the model. This implies that 57.9% of varieties of decision-making processes of Addis Ababa City Electric Utility are affected by using AIS. And 42.1% is explained by other variables.

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Table 3.6. ANOVA

Model	Sum of Squares	DF	Mean Square	F	Sig.
Regression	146.654	4	36.664	115.112	.000
Residual	106.699	335	.319		
Total	253.353	339			

Source: Own computation, 2022, DF= degree of freedom, F= frequency, Sig. =significance

ANOVA is presented in table 3.6 this analysis is used to address the general objective and main research question of the study. In addition, this analysis is used to identify the appropriateness of the model in estimating the effect of AIS on the decision-making process. The researcher used a multivariate linear regression method to run regression analysis. The f-statistic is significant at 0.01 indicating that the model used is appropriate to explain the effect of AIS on the decision-making process. This implies that using AIS in AACEU affects decision-making.

Table 3.7. Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.644	.142	.172	4.524	.000
IM	.174	.050	.194	3.499	.001



FS	.154	.047	.174	3.244	.001
BC	.201	.051	.208	3.911	.000
IC		.047	.342	7.624	.000

The effect of using AIS is presented in table 3.7 coefficients above. The researcher used unstandardized coefficients and their sign to analyse the effect on decision-making. The specific objectives are addressed and research questions were answered based on this table. All variables used in the model are positive and statistically significant implying that they have a significant positive effect on decision-making on using AIS. The study summarized hypotheses for alternative hypotheses and the hypotheses were tested using the p-value.

3.7. Hypothesis Testing and Discussion of Results

Inventory management and decision-making Ha1: Inventory management has a significant positive effect on decision-making. The results in table 4.8 hypothesis summary show that there is a positive effect of the independent variable (inventory management) on the dependent variable (decision making) at ($\beta = .194, p = .000$). Beta value shows the strength and direction of the independent variable (inventory management) on the dependent variable (decision making). The significance value is shown by the “p” value. So, it is proved that hypothesis Ha1 is accepted. Thus, the null hypothesis is rejected.

Bill collection (sales) and decision-making Ha2: Bill collection (sales) has a significant positive effect on decision-making. Secondly, the results in the table show that there is a positive impact of the independent variable (Bill collection) on the dependent variable (decision making) at ($\beta = .208, p < 0.05$). Beta value shows the strength and direction of the independent variable (Bill collection) on the dependent variable (decision making). The significance value is shown by the “p” value. So it is proved that hypothesis Ha2 is accepted. Thus, the null hypothesis is rejected. Financial statement and decision making Ha2: Financial statement has a significant positive effect on decision making. Third, the results in table 4.8 hypothesis summary show that there is a positive impact of the independent variable (financial statement) on the dependent variable (decision-making) at ($\beta = .174, p < 0.05$). Beta value shows the strength and direction of the independent variable (financial statement) on the dependent variable (decision making). The significance value is shown by the “p” value. So it is proved that hypothesis Ha3 is accepted. Thus, the null hypothesis is rejected.

Internal control and decision-making Ha4: Internal control has a significant positive effect on decision-making. The results in table 4.8 hypothesis summary show that there is a positive impact of the independent variable (internal control) on the dependent variable (decision making) at ($\beta = .342, p < 0.05$). The beta value shows the strength and direction of an independent variable (internal control) on the dependent variable (decision-making). The significance value is shown by the “p” value. So it is proved that hypothesis Ha4 is accepted. Thus, the null hypothesis is rejected.

Table 3.8. Hypothesis Summary

No	Hypothesis	Sig.	Decision
Hypothesis 1	Inventory management has a significant positive effect on the decision-making process	0.001	Accepted
Hypothesis 2	Bill collections (sales) have a significant positive effect on the decision-making process	0.001	Accepted
Hypothesis 3	Financial statements have a significant positive effect on the decision-making process	0.000	Accepted
Hypothesis 4	The internal control system has a significant positive effect on the decision-making process	0.000	Accepted

NB: the result was based on the Hypothesis Tested

4. CONCLUSIONS

Based on the research into how Addis Ababa City Electric Utility's accounting information system affects decision-making, the timely and accurate creation of high-quality accounting information and the dissemination of that information to decision-makers



depend on the accounting information system. Existing literature provides support for the link between AIS and decision-making, but it's vital to emphasize that further research is needed to look at any confounding variables. This study demonstrated a substantial correlation between the use of accounting information and decision-making, indicating that doing so will improve management decisions. As a result, it may be said that the accounting information system influences decision-making. Based on the results, this study recommends companies use accounting information systems (AIS) for better internal control, financial statement, inventory management, and bill collection to improve decision-making and increase organizational performance. Therefore, it is better for management to adopt AIS, monitor its use, and enhance decision-making.

ACKNOWLEDGEMENTS

We would like to acknowledge departments of Addis Ababa City Electric Utility and four districts under Addis Ababa City Electric Utility (EAAD, SAAD, and NAAD & WAAD) including the 353 employees who participated in the questionnaire and the thirty customer service centers found in Addis Ababa for their cooperation in this study.

CONFLICT OF INTEREST

The author and all participants of this study declare that there is no conflict of interest in this research work.

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Cite this Article: Minwelet Wendyifraw Yigrem, MBA, Cherinet Yigrem, PhD, Hanna Yeshinegus, PhD, Achamyeleh W. Yigrem, MBA (2023). The Effect of Accounting Information System on the Decision-Making Process of Addis Ababa City Electric Utility's. International Journal of Current Science Research and Review, 6(1), 356-366