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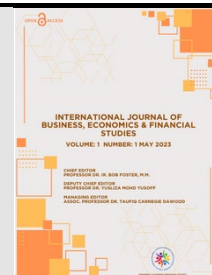
Original Article

Factors that Influence the Effectiveness of Accounting Information Systems: A Case Study of Government Agency in North Nias Regency, Indonesia

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Abstract

An Accounting Information System (AIS) is a system that collects, records and processes financial data and non-financial data related to financial transactions to produce information for decision-making. The decision-making process plays an important role in achieving organizational goals. This study aimed to analyze the factors that influence the effectiveness of Accounting Information Systems (AIS) at the government agency in North Nias Regency. The factors tested are user capability, top management support and education and training. The effectiveness of AIS is the study's dependent variable, while user capabilities, top management support and education and training are independent variables. This research was conducted on employees using AIS at the Regional House of Representative Secretariat, Education Office, and Civil Registry Office of North Nias Regency. The research population was 40. The sampling technique used saturation sampling. The type of data used is primary data. Data were obtained by using research questionnaires. Methods of data analysis using multiple linear regression analysis methods. The analysis results show that user capability, top management support, and education and training have a positive and significant effect on the effectiveness of AIS either partially or simultaneously.

1. Introduction

The decision-making process plays an important role in achieving organizational goals. The availability of timely information is one of the crucial factors that support the success of decision-making. An Accounting Information System (AIS) is a system that collects, records, and processes financial data and non-financial data related to financial transactions to produce information for decision-making (Ardana & Lukman, 2016). One of the functions of AIS is to convert data into information so that management can plan, execute, control, and evaluate activities, resources, and personnel (Agung, 2015).

AIS must be highly effective to be useful for the organization. The environmental conditions that interact with the AIS can determine the effectiveness of the AIS itself. Starting from the user or users, the technology used to the leadership in the organization plays an important role in increasing the effectiveness of AIS.

According to Utomo (2019), the sophistication of information technology and the knowledge of accounting staff have a positive and significant effect on the effectiveness of accounting information systems. (Puspitawati, 2015) also stated the same thing. Her research showed that user ability had a positive and significant effect on the effectiveness of accounting information systems.

Users of the AIS must meet the qualifications required for the AIS to be effective in the organization. Users are employees who have direct contact with AIS. The employee must master the ins and outs of operating the AIS so that that information can be provided promptly. There are many ways that the organization can take to improve the ability of employees, one of which is through education and training. Education and training have a positive impact on improving employee competence (Alainati et al., 2010).

In addition to user capabilities, education and training, organizational leaders also have an important role in supporting the effectiveness of AIS. Top management support is very important to realize the AIS required by the organization. According to Fatimah (2013), top management support is very important in implementing a system, especially in innovation situations, due to the manager's power regarding the required resources. (Pardani & Damayanthi, 2017), (Purnomo, 2014), and (Dewi et al., 2020) found that top management affects the effectiveness of accounting information systems.

AIS is indispensable in every organization, both companies and government agencies. Government agencies are even very important to pay attention to the effectiveness of the AIS used because the activities of these agencies are closely related to services to the community. The Regional House of Representative Secretariat, Education Office, and Civil Registry Office of North Nias Regency are several government agencies tasked with providing administrative services related to the wider community's interests. As an extension of the government, these agencies are obliged to provide the best service to the community. Therefore, everything must be prepared properly. The devices must support service activities so the community is satisfied with the services provided. AIS, as a tool often used as a mainstay to accelerate the process of public services, must have high effectiveness.

The effectiveness of AIS will be more easily improved if the factors that affect its effectiveness have been identified. Therefore, research on it needs to be done. This study aims to analyze the factors that influence the effectiveness of the accounting information system at the Regional House of Representative Secretariat, Education Office, and Civil Registry Office of North Nias Regency. The analyzed factors are user capability, top management support, and education and training. This study contributes to enriching the results of previous research studies related to the effectiveness of AIS by providing new evidence regarding the most dominant factors that affect its effectiveness, especially from the point of view of government agencies. The results of this study will also contribute as input for the Regional House of Representative Secretariat, Education Office, and Civil Registry Office of North Nias Regency to improve the quality of services, especially the provision of quality information through increasing the effectiveness of the AIS.

2. Literature Review
2.1. Effectiveness of Accounting Information Systems
According to Kieso et al. (2016), an accounting Information System is a system that collects and processes transaction data and presents financial information to interested parties. Accounting information systems process data into quality information. According to Romney & Steinbart (2015),

there are three functions of the Accounting Information System, namely:

- Collect and store data on the organization's activities, resources and personnel. Organizations have some business processes, such as making sales or purchasing raw materials, that are repeated frequently.

- Turning data into information so management can plan, execute, control, and evaluate activities, resources and personnel.

- Provide adequate controls to secure the data assets of the organization or company.

Accounting information systems that are useful for organizations are information systems that have high effectiveness. The effectiveness of an accounting information system is a measure that gives an idea of how far the planned targets can be achieved from a set of resources that are arranged to collect, process and store electronic data, then turn them into useful information and provide the required formal reports with good quality and shorter time for users.

Delone and McLean in Jogiyanto (2017) suggest six dimensions that can be used to measure the effectiveness of accounting information systems, as follows:
a. System Quality.
b. Information Quality.
c. Service Quality.
d. Use.
e. User satisfaction.
f. Net Benefit.

2.2. User Capabilities
User capability is the ability of a person to complete a task by utilizing every available resource, especially technology. User capability will determine the effectiveness of AIS. AIS can be utilized optimally if employees have adequate competence to operate it. On the other hand, AIS becomes useless if the employee's ability to operate it is insufficient, even though the technology is very sophisticated. According to Robbins & Judge (2008), there are several indicators of personal capability, as follows:
1. Knowledge
Knowledge as users of information systems can be seen through:
- Have knowledge of accounting information systems.
- Understanding task knowledge as a system user

2. Abilities (Abilities)
Ability as a user of information systems can be seen from:
- Ability to run existing information systems.

- Ability to express information needs.
- Ability to do tasks from work.
- Ability to align work with tasks.

2.3. Top Management Support

Top management is the highest leader of an agency or organization. According to Hasibuan (2008), top management activities aim to lead the organization in determining its goals and basic policies (basic policy). Top management support is critical to the success of a program, including those related to AIS. The top management has the authority to determine the criteria and design of the AIS to be used. According to Arfan & Ishak (2005), top management support is important in determining the effectiveness of accounting information systems in organizations. Several indicators can be used to measure top management support, as stated by Komala (2012) as follows:

1. Authority where management provides support for the required information.
2. Participation where management participates in supporting the selection of hardware and software, system implementation, maintenance and problem solving related to information systems.
3. Commitment where management supports planning for sustainable system development.

2.4. Education and training

According to Mangkuprawira (2011), training for employees is a process of pursuing certain knowledge, skills, and attitudes so that employees are more skilled and able to carry out their responsibilities better, according to standards. Training is an overall activity to provide, obtain, improve and develop work competencies, productivity, discipline, attitudes and work ethic at certain skill and expertise levels with the level and qualifications of the position or job (Moeheriono, 2012). Education and training is one of the important factors in the development of human resources (Sumarsono, 2009). There are several indicators of education and training, according to Dasar (2011), which are as follows:

1. Training prior to system development, including.
2. Training in analyzing and designing systems.
3. Training in systems technology.
4. Training on the new system.

Virtually successful system implementation requires careful attention in training employees as users of information systems, in some cases, new employees must be recruited and trained, in other cases, employees must be taught to work with report forms and new procedures.

3. Materials and Methods

This research is quantitative descriptive. The main variable studied is the effectiveness of AIS as the dependent variable, while the independent variables used are user capabilities, top management support, and education and training.

Table 1. Definition of Operational Variables

Variable	Indicators	Scale
AIS Effectiveness (Y)	System Quality Information Quality Service Quality Use User satisfaction Net Benefit	Interval
User capability (X₁)	1. Knowledge 2. Ability	Interval
Top management support (X₂)	1. Authority 2. Participation 3. Commitment	Interval
Education and training (X₃)	1. Training before system development 2. Training on the new system	Interval

This research was conducted on employees using SIA at the Regional House of Representative Secretariat, Education Office, and Civil Registry Office of North Nias Regency. The research population is 40 people. The sampling technique uses saturated sampling because the population does not reach 100. Researchers distributed questionnaires to all research respondents, but only 35 returned questionnaires.

The data used in this study is primary data. The data was collected using a questionnaire distributed to research respondents. Data analysis using multiple linear regression analysis method. Data analysis techniques consist of: instrument tests, classical assumption test and hypothesis testing. The instrument test consists of: a validity test and a reliability test. Meanwhile, the classical assumption test consists of normality, multicollinearity, and heteroscedasticity tests. Hypothesis testing includes the coefficient of determination test (Adjusted R^2), simultaneous significance test (F test), and partial significance test (t test). The regression equation to be analyzed is as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Y is AIS Effectiveness, X1 is user capability, X2 is top management support, X3 is education and training, α is constant, β is the regression coefficient, and e is an error.

4. Results and Discussion
4.1 Validity and Reliability Test

A summary of the results of the validity test is presented in Table 2 below:

Table 2. Result of Validity Testing

Variable	Statement	Pearson Correlation	Sig. (2-tailed)	Note
AIS effectiveness	Q1Y	0.714	0.000	Valid
	Q2Y	0.792	0.000	Valid
	Q3Y	0.791	0.000	Valid
	Q4Y	0.698	0.000	Valid
	Q5Y	0.693	0.000	Valid
	Q6Y	0.761	0.000	Valid
User capability	Q1X1	0.825	0.000	Valid
	Q2X1	0.855	0.000	Valid
	Q3X1	0.904	0.000	Valid
	Q4X1	0.906	0.000	Valid
Top management support	Q1X2	0.805	0.000	Valid
	Q2X2	0.858	0.000	Valid
	Q3X2	0.828	0.000	Valid
Education and training	Q1X3	0.819	0.000	Valid
	Q2X3	0.749	0.000	Valid
	Q3X3	0.845	0.000	Valid
	Q4X3	0.841	0.000	Valid

An instrument is declared valid if the value of Sig. (2-tailed) < 0.05 and the Pearson Correlation is positive. Based on the test results with the product moment technique, it is known that the value of Sig. (2-tailed) all instrument items are smaller than 0.05 and the Pearson Correlation is positive. This shows that the research instrument is valid.

Table 3. Result of Reliability Test

Variable	Cronbach Alpha	Reliability
AIS Effectiveness	0,830	Reliable
User capability	0,894	Reliable
Top management support	0,773	Reliable
Education and training	0,826	Reliable

Reliability testing in this study used Cronbach's Alpha. An instrument is declared reliable if the value of Cronbach's Alpha > 0.6. The test results show that the value of Cronbach's Alpha for all variables is greater than 0.6. Thus, it can be concluded that the research instrument used is reliable.

4.2 Classic assumption test
4.2.1 Normality test
Normality test using Kolmogorov-Smirnov test. If the Asymp. Sig. (2-tailed) value > 0.05, then the research data is normally distributed.

Table 4. Result of Normality Test

	Unstandardized Residual
N	35
Asymp. Sig. (2-tailed)	0,147

Table 4 shows the Asymp. Sig. (2-tailed) values of 0.147. The value is greater than 0.05. Thus, it can be concluded that the data is normally distributed.

4.2.2. Multicollinearity test
The regression model is free from multicollinearity problems. This conclusion is based on the Tolerance value of all variables greater than 0.1 and the Variance Inflation Factor (VIF) value of all variables less than 10.

Table 5. Result of Multicollinearity Testing

Variable	Tolerance	VIF	Description
User capability	0,390	2,567	There is no multicollinearity
Top management support	0,293	3,408	There is no multicollinearity
Education and training	0,382	2,615	There is no multicollinearity

4.2.3 Heteroscedasticity test
The research model is free from heteroscedasticity problems. This is evidenced by the results of the Glejser test, where the significance probability value of all independent variables is greater than 0.05.

Table 6. Result of Heteroscedasticity Testing

Variable	Sig.
User capability	0.431
Top management support	0.531
Education and training	0.269

4.3 Hypothesis testing
The summary of the results of the regression analysis is presented in Table 6 below:

Table 7. Result of Summary of Regression Analysis

	Unstandardized Coefficient	
	B	Sig.
(Constant)	7.407	0.000
User capability	0.509	0.000
Top management support	0.452	0.030
Education and training	0.290	0.031
Adjusted R Square		0.838
F Statistic		59.672
Sig.		0.000

The adjusted R Square value is 0.838. This shows that the effectiveness of AIS can be explained by user capabilities, top management support, and education and training of 83.8%. In comparison, the remaining 16.2% is explained by other variables not included in the research model. This is supported by the F test results, which show a significance probability value of 0.000. This significance probability value is smaller than 0.05, so it can be concluded that user capability, top management support, and education and training simultaneously significantly affect AIS's effectiveness.

On the basis of the results of the t-test, it is known that the regression coefficient of the user capability variable is 0.509 (positive sign) with a significance probability value of 0.000. The significance probability value is smaller than the alpha value of 0.05. Thus, it can be concluded that user capability has a positive and significant effect on the effectiveness of AIS. Furthermore, the regression coefficient value of the top management support variable is 0.452 (positive sign) with a significance probability value of 0.030. The significance probability value is smaller than the alpha value of 0.05. Thus, it can be concluded that top management support has a positive and significant effect on the effectiveness of AIS. Finally, the education and training variables have a regression coefficient value of 0.290 (positive sign) with a significance probability value of 0.031. The significance probability value is smaller than the alpha value of 0.05. Therefore, it can be concluded that education and training have a positive and significant effect on the effectiveness of AIS.

4.4. Discussion

The hypotheses proposed in this study are all proven and accepted. User capability was found to have a positive and significant effect on the effectiveness of AIS. The higher the user's capability, the more effective the AIS will be. User capability is the most influential variable on the effectiveness of AIS in government agencies in North Nias Regency. This is indicated by the regression coefficient value of the user capability (0.509) which is higher than the regression coefficient of other variables. The results of this study are in line with research by Puspitawati (2015), Faridah & Noviyanti, (2018) and Utomo (2019). User capability will determine the effectiveness of AIS. The effectiveness of AIS is measured based on the achievement of targets determined through the use of AIS. Achieving this target is highly dependent on the performance of the employees working on it. The higher the employee's ability to operate the AIS, the faster the work will be completed.

Top management support also has a positive and significant influence on the effectiveness of the AIS. Therefore, the greater the top management support or in this case the agency leadership to the AIS, the higher the effectiveness of the AIS. The results of this study are in line with the research of Dewi et al. (2020), Pardani & Damayanthi (2017) and Purnomo (2014). The leadership of the organization or agency has the authority to determine various programs within the agency that leads it. Leadership support for the design of the AIS as well as the updating of the AIS will determine the quality of the AIS that will be used. Therefore, leaders of government agencies in North Nias must have high awareness to be involved in determining the design of the AIS. In addition, agency leaders also need to periodically check the performance of the AIS used so that the need to update the AIS can be identified. All of these activities determine the level of effectiveness of the AIS.

Education and training were found to have a positive and significant effect on the effectiveness of AIS. This means the higher the training intensity, the more effective the AIS will be. The results of this study are in line with the research of Adisanjaya et al. (2017), Lestari et al. (2017) and Sukmayanthi et al. (2023). Education and training are the best means to improve employee competence. The training intensity also determines the level of employee mastery of a competency. Therefore, the Regional House of Representative Secretariat, Education Office, and Civil Registry Office of North Nias Regency need to provide every employee with education and training related to AIS. It aims to improve employees' capabilities to have adequate competence in operating AIS.

5. Conclusion

This study concludes that user capability has a positive and significant effect on the effectiveness of AIS. Top management support has a positive and significant effect on the effectiveness of AIS. Education and training have a positive and significant effect on the effectiveness of AIS and user capability, top management support, education and training simultaneously have a significant effect on the effectiveness of AIS. The results of this study serve as input for the Regional House of Representative Secretariat, Education Office, and Civil Registry Office of North Nias Regency, and in general, other government agencies in North Nias Regency, to improve the quality of services, especially the provision of quality information through increasing the effectiveness of the AIS. The most important thing to do is increase the capability of employees through education and training related to the operation of the AIS used in their respective agencies.

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