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Sustainability and Performance of Accounting Information Systems: Evidence service organization

Riyan Hidayatullah Mudzakkir[1], Enny Susilowati Mardjono[2]
[1,2]Universitas Dian Nuswantoro, Semarang
*Corresponding Author: riyanhidayatullahmudzakkir@gmail.com

Abstract

This study aims to determine the factors that influence the sustainability of accounting information system performance with information technology as a moderating variable. This study was conducted at PT. Bank Jateng, Semarang Main Branch using quantitative methods with primary data sources obtained from distributing questionnaires. Respondents in this study were selected based on a purposive sampling method of 78 employees who work using accounting information systems. we find that employees who have personal technical skills and follow training and education leads to positive sustainability for Accounting Information System performance. This study contributes to the literature and contributes managerial information about information technology to the company. The results of hypothesis testing with multiple linear regression analysis indicate that user participation, personal technical skills, training and education programs have a positive effect on accounting information system performance. Information technology as a moderating variable cannot moderate the effect of user participation, personal technical skills, training and education programs on accounting information system performance.

Keywords: user participation, personal technical skills, training and education programs, information technology, accounting information system performance.

INTRODUCTION

Sustainability and Performance of Accounting Information Systems (AIS) in banking companies refers to how these systems are designed, implemented, and managed to support the bank's long-term operations while still meeting dynamic business and regulatory needs. Sustainability and optimal performance of AIS in banking companies are critical because this sector has very stringent requirements regarding compliance, service speed, and data security. With a sustainable and well-performing AIS, banks can more efficiently manage financial operations, comply with regulations, and ultimately support customer satisfaction and corporate reputation.

New discoveries can be influenced by technological advances in the contemporary era of globalization. Before the advancement of information technology, users of accounting information systems had to do most of their work manually. With the rapid development of the technology sector, many businesses have moved to computerized accounting information systems. So that it makes inputting company data easier and faster for management (Warda, 2018). Another benefit of computer technology is also useful in facilitating customers to transact which previously required meeting or visiting the bank location. In addition, because banks have built a computer technology-based system that can be accessed via the internet, saving activities such as checking balances and others can also be done more easily, can be more effective and efficient. This makes it possible to determine good company management or not based on the information system used (Faisal, 2021).

The case at Bank Mandiri was reported by katadata (2019), the information system at Bank Mandiri experienced an error, IT experts found a human error factor. According to IT expert Gildas Deograt Lumy, human error occurred when the transaction was processed. Agung advised the bank to implement an internal information technology system SOP considering transaction errors in order to better manage risk and maximize value. (Liputan6, 2018). Negligence often occurs in work, in that case Bank Jateng provides education and training to its employees. Some types of education and

training that have been carried out include vocational education programs, professional education, skills, seminars, courses, coaching, training, workshops, and special management and training tailored to the needs of the Company (Bank Jateng, 2016).

The level of user satisfaction when using an accounting information system can be used as a factor in determining the success of a system's performance. The overall performance of accounting devices can be analyzed to avoid the failure of the company's overall performance. Several elements influence the overall performance of the accounting information system, including people's participation when introducing the information system, school programs and training of people, and skills (Dewi & Wiratmaja, 2020). Research conducted by Kharisma & Juliarsa (2017) tested user participation in the accounting system which found that user participation had a good and significant impact on the quality of accounting data. Other factors, such as the personal technical skills of users of the accounting information system, affect system performance. The work of information system users to run computers so that they can be skilled and good at using software and hardware that are useful for managing data makes good, quality and reliable information known as personal technical skills. The components of education and training will also affect the quality of the accounting information system whose users will benefit from this education strategy, which can advance their ability to the system will have an impact on being able to use it properly (Ratnasih, 2017). Nugroho (2018) state that technology must be developed in the form of adjustments to meet the latest needs of its users; failure to upgrade information technology can result in asynchronous improvements, and the data provided by the system will ultimately be useless for company management. User capabilities are obtained from their training and education, training and education activities are supported by information technology that will bring significant benefits to users in the form of increased capacity to operate information systems. because of the effectiveness and efficiency of their work.

This study explicitly includes information technology as a moderating variable to test its influence on the relationship between user participation, personal technical skills, and training and education programs on AIS performance. This kind of research is rarely conducted, especially in the specific context of a banking company such as Bank Jateng. The focus on AIS sustainability as the core of the research, including examination of factors such as user engagement, technical capability, and training, provides a new perspective to similar research that generally focuses only on short-term system performance. Does user participation have an influence on the performance of the accounting information system used by Bank Jateng Semarang? Personal technical ability has an influence on the performance of the accounting information system at Bank Jateng Semarang. User training education programs have an influence on the performance of the accounting information system at Bank Jateng Semarang. User involvement moderated by information technology has an influence on the performance of the accounting information system at Bank Jateng Semarang. Personal technical ability moderated by information technology has an influence on the performance of the accounting information system at Bank Jateng Semarang. Training and education programs moderated by information technology have an influence on the performance of the accounting information system at Bank Jateng Semarang.

Referring to various previous research results obtained inconsistent results, so the author will re-examine to find out that individual employee performance on the effectiveness of using accounting information systems has an influence with information technology as a supporter. Based on the background explanation, the researcher is interested in conducting research with the title: "Analysis of Factors Affecting Accounting Information System Performance with Information Technology as a Moderating Variable"

LITERATURE REVIEW AND DEVELOPMENT HYPOTHESIS

Literature Review and Hypothesis Development

Sustainability of Accounting Information Systems

Sustainability of AIS in the banking context relates to the ability of the system to survive and continue to evolve in the face of changes in technology, business needs, and regulations. (Dagiliene & Šutiene, 2019) Some important components of sustainability in banking AIS include:

- **Scalability** : The system must be able to grow along with the growth of large transaction data and the increasing complexity of banking services.
- **Adaptability** : A sustainable system must be able to adapt to stringent regulatory changes in the banking sector, including changes in accounting standards and tax provisions.
- **Resource Efficiency** : Sustainability also means that the system can optimize the use of resources, such as manpower, time, and infrastructure, which supports the continuity of company operations without burdening the budget.
- **Data Security and Compliance** : AIS in banks must be able to maintain the security of customer data and company operations from cyber threats and remain in accordance with regulations, such as GDPR or Bank Indonesia regulations.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) theory has been developed three times, the first by Davis (1993)defining that TAM is user acceptance of the use of information technology systems. The concept in this theory talks about how easy it is to handle the personal technical skills possessed by people who use information systems. Personal technical skills can make it easier for people to use information systems and increase user satisfaction with accounting information systems. This benefits the business and can increase user involvement in improving the system (Faisal, 2021).

Accounting Information System

According to Romney (2018), accounting information systems are procedures for storing, recording, collecting, and handling various information that produces data for leaders. Individuals, cycles and directions, information, programming, data innovation foundations, internal controls, and safety efforts are all included in this class. Accounting information systems, according to Turner, (2020) include cycles, strategies, and systems that capture accounting information into accurate records, process accounting information by ordering, summarizing, combining, detailing summaries of accounting information to internal and external users.

Information Technology

According to Putri (2020), the adequacy of the utilization of accounting information systems can be influenced by the refinement of data innovation. Data innovation is a significant point of view in corporate associations, where data innovation will be important when used in associations to achieve the main and functional goals of the association. The data innovation system will help companies to further develop the implementation of companies involving data innovation systems in an original and proficient manner (Alsharari & Ikem, 2023).

User Participation in Accounting Information System Performance

To achieve the goal, user participation is a form of direction and self-control. In addition, individual involvement in planning, developing and implementing useful information systems to ensure user satisfaction is known as user participation (Moradi, 2020). Venkatesh, V.; Davis, (2000)understands that TAM is used to determine people's understanding of using data innovation in their ongoing practice. Wibowo (2018) research results say that the interest in utilizing information systems affects the presentation of data frameworks in business banks in the city of Surakarta. In a study led by Muliana (2017), also explained that client support significantly affects accounting information systems.
H1: User participation has an effect on the performance of accounting information systems.

Personal Technical Ability on Accounting Information System Performance

Employees working on accounting information systems will also have better technical skills if they are satisfied. However, users of information systems are less satisfied as a result of inadequate employee accounting information preparation skills or lack of resources. To complete a task, ability and skill cannot be separated (Kusumawati & Ayu, 2019). Mc Clelland's (1961) motivation theory explains that every individual has strong support to succeed. This drive guides the person to try harder to get the award. The

results of Ruslinda and Amelia's research (2021), that the individual's special capacity affects the data system exhibition. Faisal et al., (2021), also revealed that the special capacity of the accounting information system has a positive relationship with the presentation of the accounting information system.
H2: Personal technical capabilities have an effect on the performance of accounting information systems.

User Training and Education Program for Accounting Information System Performance
Before accepting changes to the new system, someone will initially know about this development and then try to understand it, this can be achieved through legitimate preparation. Preparation can increase worker confidence in dealing with the new system. Through this preparation, the employee feels better with the new system and he will also feel less dismissed and he will feel more confident in fulfilling his business obligations with new hardware. With workers who have a satisfactory level of training, they will have great thoughts in learning new things (Sukriani 2018). The results of research from Dewi & Wiratmaja (2020) that preparation and training programs greatly affect the accounting innovation performance system. And further research from Maryani, (2020) and Abu (2023) observed that preparation and training programs greatly affect the accounting innovation performance system.
H3: Training and education programs have an impact on the performance of accounting information systems.

User Participation in Accounting Information System Performance with Information Technology as a Moderating Variable
The existing information system must be developed by involving users of the information system to produce relevant and accurate accounting data. (Trimah, 2020). Theory of Reasoned Action (TRA) developed by Azjen and Fishben which emphasizes that the involvement of users of accounting information systems supported by information technology can improve the performance of accounting information systems (Pedroso & Gomes, 2020). Users find it easier to run new information systems because the capabilities possessed by users will increase and users get convenience in developing systems where the required technology is available. Tarigan (2021) data innovation as a moderating variable on client support for accounting innovation performance systems.
H4: Information technology as a moderating variable in user participation in accounting information system performance.

Personal Technical Ability on Accounting Information System Performance with Information Technology as a Moderating Variable
The user's ability to operate the information system can help, but if it is not supported by qualified information technology, then the user's ability will be wasted, conversely if the information technology used is too sophisticated and the ability is lacking, the system performance will decrease (Warda, 2018). The Human Organization Technology (HOT) hypothesis created by Moradi (2020). is another structure that can be used to assess the data framework, this hypothesis places an important part in the accounting information system, especially (people), (associations), and innovation. (innovation) and the fairness of the relationship with each other. research by Marina & Erlina (2021) and Bhagaskara & Damayanthi, (2020) obtained the results of data innovation as a directing variable on the special capacity of the private sector in the presentation of the accounting information system.
H5: Information technology as a moderating variable on personal technical capabilities towards accounting information system performance.

Education and Training Programs on Accounting Information System Performance with Information Technology as a Moderating Variable
Training and education programs supported by information technology can provide more benefits to users and companies, with the new capabilities obtained by users from training and education will improve the performance of accounting information systems (Kusumawati & Ayu, 2019)(Alsharari & Ikem, 2023). The Innovation Acceptance Model (TAM) created by Fred Davis (1989) is a model of client recognition of the use of data innovation systems. The motivation behind this model is to

understand the fundamental variables of data innovation client behavior towards the recognition of data innovation itself. Muliana's research, (2017) which reveals the impact of data innovation as a directing variable in schools and program preparation on the presentation of accounting information systems. Kusumawati & Ayu, (2019) also received research on the type of data innovation as a directing variable in teaching and program preparation on the accounting innovation performance system.
H6: Information technology as a moderating variable in education and training programs on accounting information system performance.

METHODS

The type of data used in this study is primary data. This data was obtained directly by the researcher from respondents in this case, namely employees who use the accounting information system of PT. Bank Jateng, Semarang Main Branch and Bank Jateng Kudus Branch. The sample selection used the purposive sampling technique. The hypothesis was tested using the multiple linear regression analysis method.

Purposive Sampling
Sample criteria 1. Using accounting information system software in completing work. 2. Following training and education in the field of accounting information systems accounting information. 3. Having the ability to operate accounting information systems. 4. Participating in developing accounting information systems. 5. Following the development of information technology. Based on the questionnaire distributed by researchers, the data processed were 78 questionnaires.

Table 1. Purposive Sampling Method

No	Information	Amount
1.	Respondents	150
2.	Samples that meet the criteria	98
3.	Sample answers	81
4.	Inappropriate sample	3
5.	Samples used	78

Source: Data processed by researchers

Operational Definition of Variables

Table 2. Operational Definition of Variables

Variables	Draft	Reference
User Participation (X1)	User participation starts from the planning, analysis, design, selection, implementation, and operation or development stages of the information system.	Faisal, Basyri & Hero (2021)
Personal Accounting System Technical Ability (X2)	The ability of information system users to use the system is obtained from education and experience.	Faisal, Basyri & Hero (2021)
User Training and Education Program (X3)	Requires education and training so that employees are more proficient in utilizing the system, so training and education programs can provide benefits to employees and system users in operating the company's operational activities.	Faisal, Basyri & Hero (2021)
Accounting Information System Performance (Y)	Assessment of the effectiveness of information systems uses user satisfaction, system usage and information system quality as measures.	Dharmawan & Ardianto (2017)
Accounting Technology (Z)	Is a technology that users use to make it easier to complete their work which is their responsibility, so that it will improve the performance of the company and individuals to achieve the company's goals.	Nugroho (2018)

Source: Data processed by researchers

RESULT AND DISCUSSION

Descriptive Statistics

The data obtained will be used as analysis material using the SPSS 20 analysis tool. Table 3 presents the average, minimum, maximum and standard deviation values.

Table 3. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
User Participation	78	17	25	21.94	2,085
Personal Technical Skills	78	18	25	22.24	1,752
Education and Training Programs	78	17	25	22.42	1,755
Accounting Information System Performance	78	18	25	22.05	1,823
Information Technology	78	18	25	22.10	2,099

Source: Data processed by researchers

Table 4 shows the conclusion that all variables have a Tolerance value > 0.10 and VIF < 10, meaning they are free from multicollinearity symptoms.

Table 4. Multicollinearity Test

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
User Participation	.089	.120	.102	.744	.459	.238	4.204
Personal Technical Skills	.360	.157	.346	2.287	.025	.196	5.105
Education and Training Programs	.520	.112	.501	4.627	.016	.382	2.616
Information Technology	-.066	.108	-.076	-.609	.544	.288	3.469

Source: Data processed by researchers

Table 5 shows that the variable of user participation in improving the information system has a positive effect on the performance of the accounting information system which must be seen from the t-test having a level of 0.033 or <0.05 so that it is very likely to be assumed that H1 is accepted. This shows that user participation has a positive impact on the performance of the AIS according to this conclusion, user participation in system development **has an effect** on the performance of the accounting information system. In line with the TAM3 theory put forward in the study, Moradi (2020) also found that user participation that increasingly uses the accounting information system will improve system performance.

According to research by Faisal (2021), Tevi Maryani (2020) and Praptiningsih (1967). In their research, it is stated that the higher the involvement of users in developing their systems, the more it affects the performance of accounting information systems. User satisfaction of accounting information systems and their participation in the system are two indicators of information system performance. Research by Ida Bagus (2020) states that user involvement in developing information systems affects the performance of accounting information systems. Companies or organizations need to pay attention to user participation in developing and using accounting information systems to improve the performance of these information systems. From the results of the study, it can be concluded that there is a positive relationship between user participation and the performance of accounting information systems. The higher the level of user participation in using accounting information systems, the better the performance of the information system.

The personal technical ability variable has a positive influence on the performance of the accounting information system as seen in the t-test which has a significance level of 0.030 or <0.05, then H2 is accepted. In line with the TAM3 theory put forward in Wopat's research, it was

(2021)found that the personal technical ability of users has a positive influence on the performance of the accounting information system. The results of this study indicate that the higher the personal technical ability of users in using the accounting information system, the better the performance of the information system. So that personal technical ability has an effect on the performance of accounting information systems. Strengthened by research by Faisal (2021), Tevi Maryani (2020), Trimah (2020) and Praptiningsih (2019). The studies revealed that the increasing involvement of users in system development has an impact on the performance of accounting information systems. The performance of accounting information systems can also be seen from the satisfaction of users of accounting information systems and user participation of the information system itself.

Ida Bagus' research (2020) said that the personal technical ability of information system users affects the performance of accounting information systems. Companies or organizations need to pay attention to the personal technical ability of users in the development and use of accounting information systems to improve the performance of the information system.

The training and education program variables have a positive effect on the performance of the accounting information system which can be seen in the t-test which has a significance level of 0.014 or <0.05, then H3 is accepted. This means that education and training programs **have an effect** on the performance of the accounting information system.

This study is supported by Trimah et al. (2020), Wiratmaja (2020) and Putu Ardiwinata et al. (2019)proving that the higher the education and training, the better the performance of the accounting information system. Training and education programs have a positive influence on the effectiveness of the use of accounting information systems. This study shows that effective training and education programs can improve individual performance in using AIS. The TAM3 theory also supports education and training for users of accounting information systems which aims to facilitate work.

Education and training programs also affect the performance of accounting information systems. In addition to education and training programs, other factors such as user participation, user involvement, personal technical skills, superior support, organizational size, and information technology sophistication also have an influence on the performance of accounting information systems.(Mahardika & Suardhika, 2018).

Table 5. Multiple Regression Analysis and Moderation Test

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
User Participation	.070	.115	.080	.605	.033
Personal Technical Skills	.329	.148	.316	2.218	.030
Education and Training Programs	.503	.108	.484	4.644	.014
Interaction between User Participation and Information Technology	.013	.057	.627	.234	.816
Interaction between Personal Technical Capabilities of Accounting Information Systems and Information Technology	.051	.077	2.239	.660	.511
Interaction between User Training and Education Programs and Information Technology	.008	.070	.364	.119	.906

Source: Data processed by researchers

The fifth hypothesis test (H4) was conducted using a residual test with the information technology moderating variable. The results of the residual test stated that the information technology variable did not has an effect on the user participation variable (X1) on the performance of the accounting information system with a significance level of 0.816 or > 0.05.

This result is supported by research from Permana (2020) which states that information technology will not make user participation better and cannot maximize the performance of accounting information systems. Information technology must also be considered by users, because

technological advances are currently very fast. So user participation must always follow technological developments. Research Putu Ardiwinata & Sujana, (2019) says that user participation in information systems does not affect the performance of accounting information systems, especially if information technology is used as a moderating variable. And also other research by Nugroho, Frasca A., et al. (2018) shows that user participation commitment does not affect technology.

The fifth hypothesis test (H5) was conducted using a residual test with information technology as a moderating variable. The results of the residual test indicate that the information technology variable does not affect the personal technical ability variable (X2) on the performance of the accounting information system with a significance level of 0.511 or > 0.05. According to Ratnasih et al. (2017) If the user of an information system is able to operate the system, the system will be more helpful in supporting activities. However, the user's ability becomes less useful if the system used does not match his/her ability. Therefore, it is necessary to improve the ability and understanding of the system.

The personal technical ability of information system users affects the performance of accounting information systems, especially if information technology is used as a moderating variable. (Mahardika & Suardhika, 2018). Research by Kholifah (2017), states that personal technical ability, user involvement, training, top management support, and technological sophistication affect the performance of accounting information systems. With the help of information technology, user participation will be more assisted in its implementation.

The sixth hypothesis test (H6) was conducted using a residual test with a moderating variable of information technology. The results of the residual test stated that the information technology variable had no influence on the training and education program variable (X3) on the performance of the accounting information system with a significance level of 0.906 or > 0.05.

According to I Putu Deddy et al. (2020), the term education and training for users of accounting information systems refers to a short-term educational process system that teaches current users how to use basic skills to complete work and achieve goals. Training and education programs can provide new skills and insights to make it easier for users to operate accounting information systems. And research by Ida Bagus (2020), Mahardika & Suardhika (2018) and Dwi Marina & Erlina Wati (2021) also said that education and training programs do not affect the performance of accounting information systems, especially if information technology is used as a moderating variable. Training and education programs, personal technical skills, user involvement, top management support, and technological sophistication affect the performance of accounting information systems.

CONCLUSION

The results of the data analysis show that (1) User participation has been proven to have an effect on the performance of the accounting information system. (2) Personal technical ability has been proven to have an effect on the performance of the accounting information system. (3) Education and training programs have been proven to have an effect on the performance of the accounting information system. (4) Information technology as a moderating variable has not been tested to have an effect on user participation on the performance of the accounting information system. (5) Information technology as a moderating variable has not been tested to have an effect on personal technical ability on the performance of the accounting information system. (6) Information technology as a moderating variable has not been tested to have an effect on training and education programs on the performance of the accounting information system. With a sustainable and well-performing SIA, supported by employees who have good personal technical skills supported by good training and education programs, banks can more efficiently manage financial operations and ultimately support customer satisfaction and the company's reputation.

This research has practical implications for corporate management, information system developers, the banking industry, and policy and technology. For management, it is important to optimize ongoing training, increase user involvement in AIS development, and ensure adequate technical skills through training. System developers need to design user-friendly and flexible systems to support training. For the banking industry, the research results encourage strengthening regulations

and standards for technology training. In terms of policy, regulations are needed that require routine training programs and standardization of technology competencies. Technology must also support users, increase automation, and ensure system sustainability amidst evolving business needs.

This study has several limitations, including the scope that is limited to the banking sector, especially at PT. Bank Jateng, with specific locations in the Semarang and Kudus branches, so that the results are difficult to generalize to other sectors or locations. The information technology moderation variable did not show a significant effect, possibly due to the inaccuracy of the measurement model or lack of data variation. The quantitative approach with questionnaires also limits the exploration of qualitative aspects, such as subjective user experience or organizational dynamics. In addition, other factors such as top management support, task complexity, and organizational culture were not studied. The small sample size (78 respondents) and data collection within a certain time are other limitations, along with the potential for bias in self-reported data from respondents. Future research can be conducted qualitatively to complement quantitative findings and explore user experiences with accounting information systems (AIS) in greater depth. Additionally, expanding the geographical and sectoral scope can enhance generalizability. Moreover, incorporating variables such as top management support or task complexity and using a larger, more representative sample can help broaden understanding and improve the validity of research findings.

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