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Accounting information system performance in hospital:
A case study

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Abstract

This study aims to examine the impact of user engagement in system development, training and education, top management support, and user capabilities on the performance of accounting information systems. The population of this study consisted of 13 employees from the finance department of the PKU Muhammadiyah Gamping Yogyakarta Hospital who used an accounting information system. This was a mixed methods study, which combined quantitative and qualitative data in one study. Data collection methods included questionnaires and interviews. The SPSS version 22 program was used for data analysis, which included descriptive analysis and multiple regression analysis. The results of the study are that user engagement in system development, user education and training programs, and top management support all have an impact on the performance of accounting information systems. Meanwhile, user capabilities have no effect on accounting information system performance. It can also be expanded by including independent variables and research objects.

Introduction

The advancement of information technology has had a significant impact on the application of accounting information systems (AIS), particularly with the use of computer technology and the internet as forms of information technology that have transformed manual data processing into digital and automatic data processing. However, the use of information systems in an organization is inextricably linked to a variety of issues, including access speed and accuracy, program updates, limited facilities and infrastructure, and accounting information system users (Suhardiyah & Waryanto, 2014)

The goals of developing an information system include providing information for financial activity management and improving the information produced by existing systems in terms of quality, accuracy of presentation, and information structure. Furthermore, according to Susanto (2013), accounting information systems are designed with the primary goal of processing accounting data originating from various sources into accounting information required by various users to reduce risk when making decisions.

Health care organizations, such as hospitals, use accounting information systems. The hospital's main activity is to serve the community in the health sector, but it also manages an important part of the hospital, namely finance or accounting (Rivaningrum & Makhmud, 2015). PKU Muhammadiyah Gamping Hospital is also an accounting information system that is frequently used to identify users in system development because high user engagement increases users' willingness to interact with existing hospital technology systems. Furthermore, understand user education and training programs because education and training programs are very useful in providing or improving skills and a better understanding of Hospital AIS, as well as understanding how to improve top management support and user capabilities. Top management support can help to socialize the system's development.

Previous research has conducted more on the performance factors of accounting information systems in government offices and the banking industry compared to research in the service sector, as was done by Saebani (2017), Teru et al. (2017), Al-Delawi and Ramo (2020), Hla and Teru (2015), and Rifandi and Shofiani (2019). Only a few researchers have conducted related research in the field of services such as hospitals, so it is the focus of researchers to enrich the literature.

Literature Review

Expectancy Theory

The Expectancy Theory is used in this study. According to Robbins and Judge (2015), expectancy theory is the strength of the tendency to act in a certain way based on the strength of the expectation that the action will be followed by a certain output and is dependent on the attractiveness of that output for the individual. This theory focuses on the effort-performance relationship, the performance-reward relationship, and the reward-personal goal relationship are the three relationships. The performance effort relationship is the likelihood that an individual perceives that expends a certain amount of effort will drive performance.

Accounting Information System

The accounting system is a collection of forms, records, and reports that are coordinated to provide financial information to management in order to facilitate company management (Mulyadi, 2016). The information is useful data that has been processed so that it can be used to make right decisions. In general, information is as valuable as other resources such as equipment, materials, labor, and so on. An accounting information system is a group of resources, such as people and equipment, that convert data into information. This information is shared with various decision-makers. Accounting Information System (AIS) is a system that collects, records, stores, and processes data in order to generate information for decision makers (Mujilan, 2012). A good accounting information system's performance is capable of meeting the needs of information system users, allowing system users to complete their work.

User engagement in system development with accounting information system performance

Emphasizes user engagement in the design and development of information systems on how the user's role is in the process of designing information systems and what steps are taken to support and direct their contributions (Susanto, 2013). According to Antari and Diatmik (2015), user engagement is a system development process that is followed by human resource participation in agencies that are developing systems. In the design and development of accounting information systems, user engagement is more emphasized. As a result, the hypothesis can be organized as follows:

H_1: User engagement has a significant impact on the development of accounting information system performance systems.

User training and education with accounting information system performance

Information user training and education is the training and coordination of technicians who will run the system, testing new systems, and making changes to make the designed information system operationally operational (Mulyadi, 2016). User training and education have an impact on the performance of accounting information systems. Education and training for users can improve their ability to identify their information requirements, the seriousness and limitations of Accounting Information Systems, and thus user training and education programs can improve Accounting Information System performance (Anggraini, 2021). The following hypotheses can be developed as a result of this exposure:

H_2: Pelatihan dan Pendidikan berpengaruh signifikan terhadap kinerja sistem informasi akuntansi.

Training and education have a significant impact on accounting information system performance

The outcomes of an accounting information system centered on top management will be used to make various decisions in order to achieve specific goals. As a result, top management has a big hand in how the accounting information system is directed in every activity of developing, updating, or maintaining the system (Rivaningrum & Makhmud, 2015). Romney and Steinbart, (2017) defined top management as "the highest management consisting of a small group of executives," which is commonly referred to as the Board of Directors, Main Director, President Director, Deputy Director, and other executive officers. In addition, the following hypotheses are listed:

H₃: Top management support has a significant effect on the performance of accounting information systems.

Users' Capabilities of accounting information systems

Ability as "the ability or capacity to demonstrate individual capacity to realize various tasks at work." Ability is an assessment of what a person can do now (Robbins & Judge, 2015). Two groups of important factors shape an individual's overall ability, namely intellectual and physical abilities. following understanding of ability: Ability to perform a variety of tasks, both mentally and physically. In addition, the following hypotheses are listed:

H₄: User capabilities have a significant impact on accounting information system performance.

Research Method

This study employed a Mixed Method, which was a combination of quantitative and qualitative data in one study. While the research method used in this study was sequential explanatory. The population of this study consisted of 13 employees from the finance department of the PKU Muhammadiyah Gamping Yogyakarta Hospital who used an accounting information system. In this study, researchers conducted two types of data analysis: qualitative data analysis through interviews and quantitative data analysis via questionnaire distribution. The instrument of this study included questionnaires and interviews. In general, the Likert scale scoring technique was used in this research questionnaire.

Descriptive statistics provide an overview or description of data pertaining to the demographics of the respondents (gender, last education, and age) as well as a description of the research variables (user involvement, user training and education, top management support, and user capabilities). Researchers use absolute frequency distribution tables that show the average, median, range, and standard deviation (Bougie & Sekaran, 2013). Furthermore, a validity test is used to determine whether or not a questionnaire is valid (Bougie & Sekaran, 2013). Reliability test as a tool for measuring a questionnaire that contains indicators of variables or constructs. A questionnaire is said to be reliable if the responses to statements are consistent or stable over time.

The classical assumption test is performed by performing the normality, multicollinearity, and heteroscedasticity tests, all of which aim to test the regression model. The normality test determines whether the confounding or residual variables in the regression model have a normal distribution. The multicollinearity test is used to determine whether or not the regression model discovered a relationship between the independent variables. The heteroscedasticity test is used to determine whether there is an inequality of variance from one residual observation to another in the regression model.

Hypothesis test is done with two approaches, T test and F test. The T test (partial) is used to determine how far one explanatory variable or independently independent variable can explain the variation of the dependent variable, whereas the f test examines the simultaneous effect of the independent variables on the dependent variable. Furthermore, multiple linear regression tests were performed to test the effect of two or more variables on one dependent variable using the multiple

regression mathematical formula (Y = a + b1X1 + b2X2 + e). Finally, a coefficient of determination test was performed to look for a value close to one, indicating that the independent variables provided nearly all of the information required to predict the variation of the dependent variable. The researcher conducted interviews with the finance department of PKU Muhammadiyah Gamping Hospital in Yogyakarta, from which conclusions were drawn.

Result and Discussion

Descriptive Statistics

The variables employed encompass aspects related to the performance of the accounting information system, user engagement, user training and educational background, support from top management, and user competencies. Utilizing descriptive statistics allows for the examination of a single dependent variable in conjunction with four independent variables, as detailed in Table 1.

Table 1. Descriptive Statistics Result

	N	Minimum	Maximum	Mean	Std. Deviation
Accounting Information System Performance	13	35	55	47.85	6.189
User Engagement	13	7	10	8.69	1.109
User Training and Education	13	6	10	8.23	1.166
Top Management Support	13	17	25	21.46	2.570
User Capabilities	13	25	35	29.54	2.989
Valid N (listwise)	13				

Validity Test

Table 2. Validity Test Result

Indicator	r count	r table	Explanation
Accounting Information System Performance			
- Indicator 1	0.825	0.552	Valid
- Indicator 2	0.794	0.552	Valid
- Indicator 3	0.606	0.552	Valid
- Indicator 4	0.918	0.552	Valid
- Indicator 5	0.695	0.552	Valid
- Indicator 6	0.660	0.552	Valid
- Indicator 7	0.864	0.552	Valid
- Indicator 8	0.797	0.552	Valid
- Indicator 9	0.715	0.552	Valid
- Indicator 10	0.715	0.552	Valid
- Indicator 11	0.621	0.552	Valid
User Engagement			
- Indicator 1	0.822	0.552	Valid
- Indicator 2	0.923	0.552	Valid
User Training and Education			
- Indicator 1	0.867	0.552	Valid
- Indicator 2	0.886	0.552	Valid
Top Management Support			
- Indicator 1	0.742	0.552	Valid
- Indicator 2	0.759	0.552	Valid
- Indicator 3	0.818	0.552	Valid
- Indicator 4	0.772	0.552	Valid
- Indicator 5	0.747	0.552	Valid

Indicator	r count	r table	Explanation
User Capabilities			
- Indicator 1	0.669	0.552	Valid
- Indicator 2	0.873	0.552	Valid
- Indicator 3	0.570	0.552	Valid
- Indicator 4	0.891	0.552	Valid
- Indicator 5	0.656	0.552	Valid
- Indicator 6	0.809	0.552	Valid
- Indicator 7	0.811	0.552	Valid

Table 2 shows that all of the indicators used to measure the variables in this study have a large correlation coefficient of r table = 0.552 (r table value for n = 100), indicating that they are all valid.

Reliability Test

**Table 3.** Reliability Test Result

Variable	Cronbach Alpha	Status
Accounting Information System Performance (Y)	0.772	Reliable
User Engagement (X1)	0.875	Reliable
User Training and Education (X2)	0.881	Reliable
Top Management Support (X3)	0.794	Reliable
User Capabilities (X4)	0.782	Reliable

These findings indicate that all variables possess a relatively high Cronbach Alpha coefficient, exceeding the threshold of 0.60. This suggests that all questionnaire variables are appropriate for utilization as measurement instruments.

Classic Assumption Test

Normality test
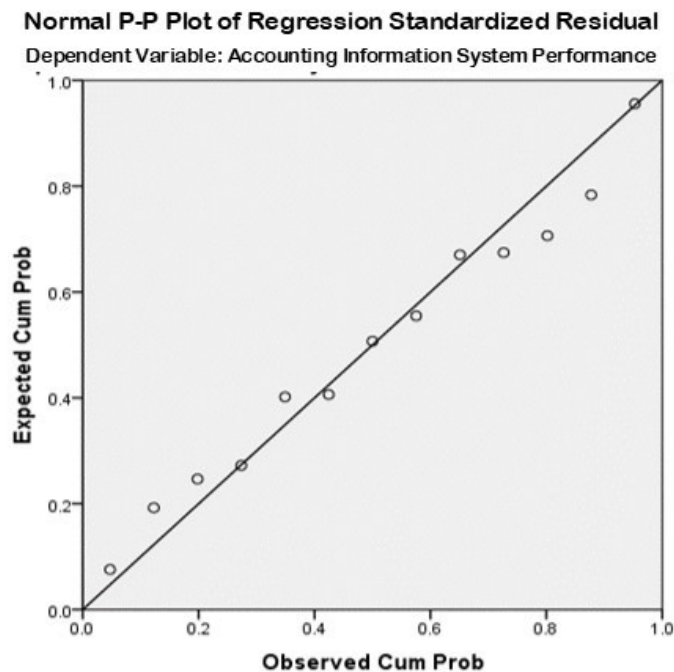
The normal probability plot graph illustrates that the data disperses around the diagonal line and conforms to its trajectory, signifying that the regression model satisfies the normality assumption.

Multicollinearity test

Table 4. Multicollinearity Test Result

Model	t	Sig.	Collinearity Statistics	
			Tolerance	VIP
(constant)	.108	.917		
User engagement	-2.708	.027	.486	2.056
User training and education	6.137	.000	.523	1.913
Top management support	2.583	.032	.380	2.634
User capabilities	1.604	.147	.626	1.597

Table 4 reveals that the variables, namely user involvement, user training and education, top management support, and user capabilities, exhibit VIF values exceeding 0.1 and tolerance values below 10. Consequently, it can be concluded that there is no presence of multicollinearity among the independent variables within this regression model.

Heteroscedasticity test
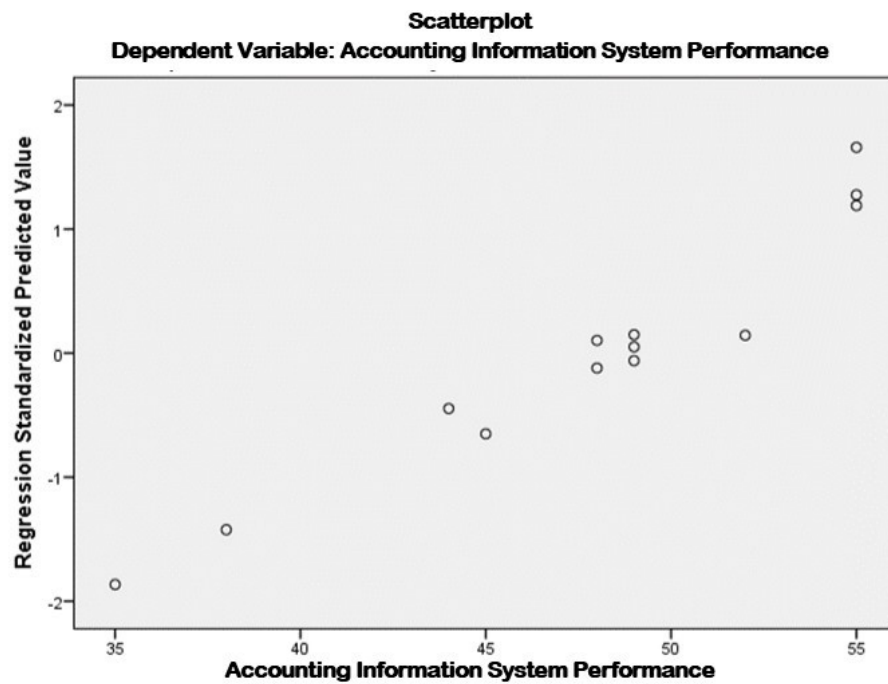
The results from the heteroscedasticity test in the table above indicate that data points are evenly distributed both above and below the zero mark on the Y-axis. This suggests the absence of heteroscedasticity.

Hypothesis test

The computed results indicate that the adjusted coefficient of determination (R^2) stands at 0.935. This signifies that user involvement, user training and education, top management support, and user capabilities can collectively account for 93.5% of the variation in the accounting information system's performance.

The t-test serves as a means to assess the individual capacity of each independent variable (user involvement, user training and education, top management support, user capabilities) to explain the dependent variable (accounting information system performance). In this study, the outcomes of the regression analysis are presented in Table 5.

Table 5. Multiple Regression Test

Variable	t count	Sig.	t table	Result
User engagement (X1)	-2.708	.027	2.306	Accepted
User training and education (X2)	6.137	.000	2.306	Accepted
Top management support (X3)	2.583	.032	2.306	Accepted
User capabilitues (X4)	1.604	.147	2.306	Rejected
F-Statistic Test	28.723			
Std. Error Estimate	1.934			
R Square	.935			
Adjusted R Square	.902			

According to the test results, the value obtained for variable X1 (user involvement) is t count = -2.708 < t table 2,306 with a significant level of 0.027 and a significant limit of 0.05, indicating that the first hypothesis is accepted. Furthermore, the value obtained for variable X2 (user training and education) is t count = 6.137 > t table 2.306 with a significant level of 0.000 and a significant limit of 0.05, implying that the second hypothesis is accepted. According to the test results, the value obtained for variable X3 (top management support) is t count = 2.583 > t table 2.306 with a significant level of 0.032 and a significant limit of 0.05, indicating that the third hypothesis is accepted. The test results show that t count = 1.604 < 2.306 with a significant level of 0.147 and a significant limit of 0.05 was obtained for variable X4 (user ability). It is possible to conclude that the third hypothesis is rejected.

Discussion

The Impact of User Engagement in Accounting Information System Performance Development

This demonstrates the impact of the variable User engagement in the development of Accounting Information System Performance that the first hypothesis is accepted (H1). Users' engagement has a significant impact on the performance of accounting information systems. This is due to the involvement of PKU Muhammadiyah Gamping Yogyakarta Hospital employees in system development at the hospital, as well as responses from respondents to statements in the distributed questionnaires. There is a strong incentive for individuals to hone their skills in order to improve hospital quality and the performance of accounting information systems. Susanto (2013) emphasizes users' engagement in the design and development of information systems on how the user's role is in the process of designing information systems and what steps are taken to support and direct their contributions, in line with what was conveyed by the head of the finance section which emphasized user involvement in running the accounting information system.

The Impact of Training and Education on Accounting Information System Performance

This demonstrates that the second hypothesis is accepted for the variable Training and Education on Accounting Information System Performance (H2). User training and education has a significant effect on the performance of the accounting information system. This is due to the existence of a training and education program for system users at PKU Muhammadiyah Gamping Yogyakarta hospital employees. The head of the finance section explained that training and education in question consists of holding exercises and courses on the system in question. Increased information and skill awareness, as well as hospital support and encouragement in improving the accounting information system's performance. This accounting information system will also run according to its function so that it can be implemented optimally if the user has good technical skills. According to Anggraini (2021), user training and education can improve their ability

to identify their information needs, the seriousness and limitations of the Accounting Information System, so the existence of user education and training programs can improve the Accounting Information System's performance.

Top management support has a significant impact on accounting information systems performance

This demonstrates that the third hypothesis is accepted for the variable Top Management Support on Accounting Information System Performance (H3). The head of the finance section explained that top management support has a significant effect on this because of the encouragement of good cooperation to improve the quality of a hospital so that the performance of the accounting information system runs effectively and efficiently. According to Rivaningrum and Makhmud (2015), top management has a large influence on how the accounting information system is directed in every activity of developing, updating, or maintaining the system.

User Capability Has No Significant Influence on Accounting Information System Performance

This demonstrates that the fourth hypothesis is rejected due to the variable user ability on accounting information system performance (H4). The head of the finance section explained that user capabilities do not significantly influence the performance of accounting information systems. This is influenced by a lack of human resource skills and awareness in increasing the ability to access accounting information systems, which affects the performance of accounting information systems. Robbins and Judge (2015) defines ability as "the ability or capacity to demonstrate individual capacity to realize various tasks at work." Ability is an assessment of what a person can do now. Two groups of important factors shape an individual's overall ability, namely intellectual and physical abilities.

Conclusion

The results of this study can be concluded that to implement an accounting information system at PKU Muhammadiyah Gamping Yogyakarta Hospital requires user involvement, training and education, and top management support, but the aspect of user ability does not have a significant effect. In conclusion, the study underscores the importance of user engagement, training and education, and top management support in enhancing AIS performance within the hospital context. However, it highlights the need for addressing human resource limitations to improve user capability and its potential impact on AIS performance. This is of course a reference for other Hospital Management who expect accounting information systems to function effectively, while user capabilities can be provided through training and education in the application of accounting information systems. This study only focuses on one sample, so that future researchers are expected to add research samples to get a comparison.

References

Aji, S. S. B., & Urumsah, D. (2017). Factors affecting the use of forensic accounting services an empirical study on Indonesian banks. *Asia Pacific Fraud Journal*, *1*(1), 147-163.

Al-Delawi, A. S., & Ramo, W. M. (2020). The impact of accounting information system on performance management. *Polish Journal of Management Studies*, *21*(2), 36–48.

Anggraini, P. N. (2021). Faktor-faktor yang mempengaruhi kinerja sistem informasi akuntansi di lingkungan pemerintah daerah Serdang Berdagai. *Journal Economy and Currency Study*, *2*(1), 16–26.

Antari, K. R. W., & Diatmika, I. P. G. (2015). Faktor-faktor yang berpengaruh terhadap kinerja sistem informasi akuntansi pada Bank Perkreditan Rakyat di Kabupaten Buleleng. *Jurnal Ilmiah Mahasiswa Akuntansi Undiksha*, *3*(1), 22–31.

Bougie, R., & Sekaran, U. (2013). *Research Methods for Business: A skill. Building Approach*. New York: John wiley & Sons.

Ed Vosselman, Ivo De Loo, (2023) Sociomateriality and the metaphysics of accounting information systems: Revisiting agential realism,International Journal of Accounting Information Systems, Volume 49, 100609, ISSN 1467-0895, https://doi.org/10.1016/j.accinf.2023.100609.

Hla, D., & Teru, S. P. (2015). Efficiency of accounting information system and performance measures – Literature review. *International Journal of Multidisciplinary and Current Research*, *3*, 976–983.

Jacek Kryszyn, Kamil Cywoniuk, Waldemar T. Smolik, Damian Wanta, Przemysław Wróblewski, Mateusz Midura (2022). Performance of an openEHR based hospital information system, International Journal of Medical Informatics, Volume 162, 104757,ISSN 1386-5056, https://doi.org/10.1016/j.ijmedinf.2022.104757.

Mujilan, A. (2012). *Sistem Informasi Akuntansi* (1st ed.). Madiun: Widya Mandala Pers.

Mulyadi. (2016). *Sistem Informasi Akuntansi*. Jakarta: Salemba Empat.

Rifandi, M., & Shofiani, P. (2019). Pengaruh sistem pembayaran asuransi kesehatan BPJS terhadap akuntansi pendapatan rumah sakit (studi pada RS PKU Muhammadiyah Gamping). *Relasi Ekonomi*, *15*(1), 51–68.

Rivaningrum, A., & Makhmud, A. (2015). Faktor-faktor yang mempengaruhi kinerja sistem informasi akuntansi pada rumah sakit Saras Husada Purworejo. *Accounting Analysis Journal*, *4*(2), 1–12.

Robbins, S. P., & Judge, T. A. (2015). *Organizational Behaviour* (16th ed.). Pearson Education Limited.

Romney, M. B., & Steinbart, P. J. (2017). *Accounting Information Systems* (14th ed.). Pearson Education Limited.

Saebani, A. (2017). Kinerja sistem informasi akuntansi (Studi pada rumah sakit di Jakarta). *Seminar Nasional Akuntansi dan Bisnis (SNAB)*.

Suhardiyah, M., & Waryanto, R. B. D. (2014). Analisis faktor-faktor yang mempengaruhi kinerja sistem informasi akuntansi (studi kasus pada Universitas PGRI Adi Buana Surabaya). *Majalah Ekonomi*, *19*(1), 47–59.

Susanto, A. (2013). *Sistem Informasi Akuntansi: Struktur Pengendalian Risiko Pengembangan*. Bandung: Lingga Jaya.

Teru, S. P., Idoku, I., & Ndeyati, J. T. (2017). A review of the impact of accounting information system for effective internal control on firm performance. *Indian Journal of Finance and Banking, 1*(2), 52–59.