THE INFLUENCE OF USER INVOLVEMENT AND PERSONAL TECHNICAL SKILLS ON THE PERFORMANCE OF ACCOUNTING INFORMATION SYSTEMS AT PT PINDAD

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Abstract

This research explores the impact of user involvement and technical competence on the effectiveness of the Accounting Information System (AIS) at PT Pindad. As a member of the Defend ID holding, PT Pindad supports the strategic goals of Indonesia's state-owned enterprises (BUMN) in enhancing the national defense sector through the integration and restructuring of information systems. In February 2024, the company launched a system revitalization initiative, implementing SAP powered by High-performance Analytic Appliance (HANA) across its subsidiaries. The primary objective of this study is to assess how user participation and individual technical capabilities influence the performance of the newly adopted AIS. The study applies an associative research method using a stratified sampling technique, with 40 respondents participating. Multiple linear regression analysis was employed to examine the relationship between the independent variables (user involvement and technical competence) and the dependent variable (AIS performance). The results show that user involvement significantly impacts AIS performance, accounting for 41.76%, while technical competence contributes 42.24%. Collectively, both variables explain 84% of the system's performance, with the remaining 16% attributed to other factors not addressed in this study.

Keywords: User Involvement, Technical Competence, Accounting Information System Performance

INTRODUCTION

Currently, Indonesia's military strength ranks 13th out of 145 countries based on the Global Firepower (GFP), which ranks the military strength of countries worldwide based on 60 factors to determine the Power Index score. These factors range from the quantity of military units, financial condition, to logistics and geographical capabilities. On March 2, 2022, PT Len Industri (Persero) officially became the State-Owned Enterprises (SOE) Holding for the Defense Industry (INDHAN). The Defense Industry SOE Holding, named Defend ID (Defence Industry Indonesia), consists of PT Len Industri (Persero) as the holding parent company and four other members, namely PT Dirgantara Indonesia, PT PAL Indonesia, PT PINDAD, and PT Dahana.

Defence Industry Indonesia (Defend ID) was established to expand the defense industry market to regional and international scales, including enhancing bargaining power in technology transfer cooperation with foreign partners. In February 2024, PT Pindad, as a member of the Defend ID holding, carried out a Restructuring and Revitalization Program by improving the information system. This involved changing the existing information technology system across all subsidiaries under Defend ID from an SAP-based Enterprise Resource Planning (ERP) system to an SAP-based High-performance Analytic Appliance (HANA). The establishment of the defense industry SOE holding and the system change are expected to be solutions for developing a national defense industry that is advanced, strong, independent, and competitive. Defend ID creates independence in the fulfillment of defense and security equipment (ALPALHANKAM) for the Indonesian National Armed Forces (TNI) and National Police (Polri).

The goal of the system changes is expected to improve the effectiveness of system usage. The involvement of users in the accounting information system refers to the people who are involved in the system development process, which can enhance the performance of the accounting information system through the delivery of information or the development of systems that meet the needs of these users. Research conducted by Nyoman Pramana Budiartha & Maria Mediatrix Ratna Sari (2023), titled "The Influence of Information Technology Sophistication, User Involvement, and Personal Technical Capability on the Performance of Accounting Information Systems," explains that user involvement, personal technical ability, and the sophistication of information technology have a positive impact on the performance of the accounting information system.

Personal technical capability refers to the competencies and characteristics possessed by an individual, including knowledge, skills, and attitudes required in performing their tasks within the workplace, particularly in relation to their role as users of the information system. This capability is crucial for the performance of the information system. Research conducted by Patebong et al. (2023), titled "The Influence of User Involvement and Personal Technical Capability on the Performance of Accounting Information Systems with Work From Home as a Moderating Variable," explains that user involvement and personal technical ability have a positive impact on the performance of accounting information systems.

REVIEW OF LITERATURE

User Engagement

According to Azhar Susanto (2021:254), user involvement refers to individuals such as operators and managers (end users) who utilize developed information systems.

Engagement in the development of accounting information systems reflects both mental and emotional commitment by employees within team settings, motivating them to actively contribute toward group objectives and assume responsibility in the system development process (Thoriq et al., 2022:90).

Azhar Susanto (2021:368) outlines several dimensions of user involvement in accounting information systems, which include:

1. Relationship – participation in the system development process,
2. Insight – enhancing understanding among users and management,
3. Responsibility – reducing the burden of accountability in conflict scenarios,
4. Time – decreasing the time needed for implementation or use,
5. User Desires – meeting user expectations more precisely,
6. Value, Satisfaction, and Support – generating valuable and satisfactory information,
7. Cost–lowering system maintenance expenses through user involvement.

Personal Technical Competence

As defined by Azhar Susanto (2021:49), personal technical competence refers to a user's ability to carry out various tasks related to the application of tools and rules at different stages within the accounting information system development cycle. Higher levels of technical competence promote the effective utilization of accounting systems, leading to enhanced system performance and increased operational efficiency. Robbins (2022:60) further breaks down personal technical competence into three key elements: knowledge, ability, and skills—each of which plays a crucial role in the user's capability to operate and adapt to the system effectively.

Accounting Information System Performance

Mulyadi (2021:45) defines the performance of an accounting information system as the extent to which the system delivers financial information that is accurate, timely, and relevant for managerial decision-making. System performance is considered a benchmark for determining an organization's effectiveness in achieving its objectives. According to Marshall B. Romney and Paul John Steinbart (2020:246), the performance of accounting information systems can be evaluated using eight key indicators: Content, Accuracy, Format, Ease of Use, Timeliness, Duration of Use, Routine Use, and Nature of Use.

RESEARCH METHOD

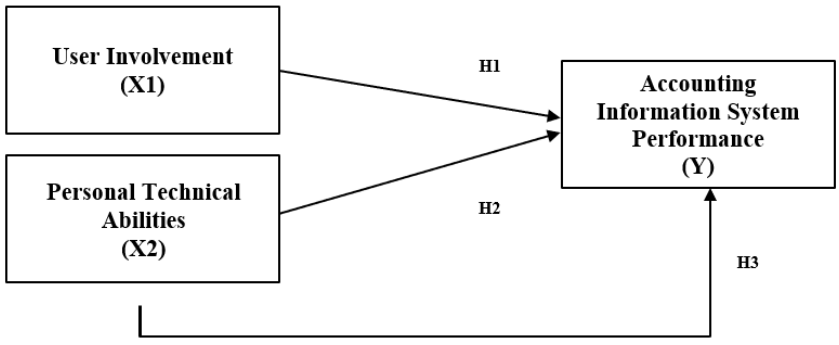

Figure 1.
Research Method
Source: Processed Data (2025)

A hypothesis is defined as a provisional statement or assumption that will be empirically tested for its validity in the context of research (Creswell, J. W., 2023:121). The hypotheses proposed in this study are:

- H1: There is a significant effect of user involvement on the performance of the accounting information system.
- H2: There is a significant effect of personal technical competence on the performance of the accounting information system.
- H3: There is a significant combined effect of user involvement and personal technical competence on the performance of the accounting information system.

Research Object

This study focuses on user involvement and personal technical competence as the independent variables (X), and the performance of the accounting information system as the dependent variable (Y).

Type of Research

This study employs an associative research method with a survey approach. According to Creswell (2023:150), associative research is designed to explore the relationship between two or more variables. The relationships can be causal, reciprocal, or symmetrical in nature (Creswell, 2023:151).

Population and Sample

According to the Big Indonesian Dictionary (KBBI), a population refers to the total number of individuals or entities in a given area. In research, it includes any group of people, objects, or phenomena that can be sampled. The sampling technique used in this study is stratified sampling, where the population is divided into distinct homogeneous groups or strata based on specific characteristics. From each stratum, a random sample is drawn (Creswell, 2023).

The unit of analysis in this research consists of employees or users of the SAP HANA system at PT Pindad. To determine the appropriate sample size, the formula from Hair et al. (2019) was used. This guideline suggests that the minimum number of respondents should be between 15 and 20 times the number of independent variables included in the regression model. This study uses two independent variables (X1 and X2) and one dependent variable (Y). Accordingly, the minimum required sample size is:

- $15 \times 2 = 30$ respondents (minimum)
- $20 \times 2 = 40$ respondents (ideal)

Therefore, to ensure the validity of the multiple regression analysis, this study uses 40 respondents, consistent with the ideal threshold recommended by Hair et al. (2019).

Table 1
Operational Definition of Variables

Variable	Definition	Dimension	Indicator	Scale	No
User Involvement (X1)	User involvement refers to people who will use the developed	**Relationship**	Users have access to communicate their system needs to the developers.	Interval	1

Variable	Definition	Dimension	Indicator	Scale	No
	information system, such as operators and managers (end users). Azhar Susanto (2021:254)	**Insight**	Users understand the benefits of the system in supporting their work.	Interval	2
		Responsibility	Users feel responsible for maintaining data accuracy.	Interval	3
		Desire	Users have the desire to use the system to its fullest potential.	Interval	4
		Time	Users are involved in using the information system to accelerate the development process.	Interval	5
		Satisfaction, Trust, and Support	Users obtain tangible benefits and trust that the information system can improve work efficiency.	Interval	6
		Cost	Users understand the information system well to reduce maintenance costs caused by user errors.	Interval	7
Technical Ability of Individuals (X2)	Technical ability is the user's capacity to carry out various tasks in the approach of how to use tools and regulations that complement one or more stages in the development cycle of an accounting	**Knowledge**	Users have a sufficient basic understanding of the accounting information system used in the company.	Interval	1
			Users know how the system can assist in processing and reporting financial information.	Interval	2

Variable	Definition	Dimension	Indicator	Scale	No
	information system. Azhar Susanto (2021:49)	**Ability**	Users are able to complete tasks effectively using the features available in the accounting information system.	Interval	3
			Users can adjust the system's features according to their work process needs.	Interval	4
		Skills	Users can communicate and coordinate effectively with colleagues in utilizing the accounting information system.	Interval	5
			Users can adapt to technological changes in the accounting information system.	Interval	6
AIS Performance (Y)	AIS performance refers to the level of achievement in providing accurate, timely, and relevant financial information for managerial decision-making. Mulyadi (2021, p.45)	**Content**	The information presented by the system is complete and relevant.	Interval	1
		Accuracy	The information provided by the system is accurate and trustworthy.	Interval	2
		Format	The information presentation format in the system is easy to understand.	Interval	3
		Ease of Use	A system that is easy to operate increases usage intensity and comfort.	Interval	4

Variable	Definition	Dimension	Indicator	Scale	No
		Timeliness	Information is available in a timely manner to support quick and efficient decision-making.	Interval	5
		Duration of Use	The system is used for a long enough duration to support daily work activities.	Interval	6
		Routine Use	The system is used routinely in operational activities.	Interval	7
		Nature of Use	The system is used in various tasks and types of work.	Interval	8

Data Source: Processed from Various Sources, 2025

Data Collection Technique

This study employed questionnaires as the primary method for data collection, supported by a literature review, internet-based research (online research), and field observations. The data were measured using a Likert scale, which is commonly used to assess individuals' or groups' attitudes, opinions, and perceptions regarding social phenomena. According to Creswell (2023:172), the Likert scale is frequently utilized in quantitative research to evaluate the degree or intensity of agreement with the statements presented in the questionnaire. Data for this study on the influence of user involvement and personal technical skills on the performance of accounting information systems at PT Pindad were collected using a structured questionnaire. The questionnaire was distributed to employees who use the accounting information system at PT Pindad. Additionally, data were gathered through literature reviews and field observations to support and validate the findings. Responses were measured using a Likert scale to capture the attitudes and perceptions of users regarding the variables studied.

Likert Scale Weight / Score

No.	Selected Answer	Weight / Score
1	Strongly disagree	1
2	Disagree	2
3	Undecided	3
4	Agree	4
5	Strongly agree	5

Data Source: Creswell (2023: 172)

Data Analysis Method

The data analysis in this study employs Multiple Linear Regression Analysis, supported by several tests including Validity Test, Reliability Test, Classical Assumption Test, Partial Significance Test (t-test), Overall Significance Test (F-test), and the Coefficient of Determination Test (R^2). This study analyzes the influence of user involvement and personal technical skills on the performance of accounting information systems at PT Pindad using Multiple Linear Regression Analysis. The analysis is supported by tests for validity and reliability to ensure data accuracy and consistency. Additionally, classical assumption tests are conducted to verify that the regression model meets required statistical conditions. To evaluate the individual impact of each independent variable, partial significance tests (t-tests) are performed, while the overall effect of the variables on system performance is assessed through simultaneous significance testing (F-test). The coefficient of determination (R^2) is used to measure the proportion of variance in accounting information system performance explained by user involvement and personal technical skills.

RESULTS AND DISCUSSION

The validity and reliability test results indicate that the variables User Involvement (X1), Personal Technical Ability (X2), and Accounting Information System Performance (Y) are both valid and reliable. This conclusion is supported by their compliance with the established acceptable standards as outlined below:

Variable	X1 (User Involvement)	X2 (Personal Technical Ability)	Y (AIS Performance)
Validity Standard	≥ 0.3	≥ 0.3	≥ 0.3
Validity Realization	0.796 – 0.879	0.731 – 0.842	0.587 – 0.870
Cronbach's Alpha Standard	≥ 0.6	≥ 0.6	≥ 0.6
Cronbach's Alpha Realization	0.920	0.863	0.891

Data Source: Primary Data, 2025

The Classical Assumption Test results indicate that the data follows a normal distribution, with no issues of multicollinearity or heteroscedasticity detected. Therefore, it can be confirmed that the regression model used is free from assumption violations and satisfies the criteria for a valid linear model.

The Multiple Linear Regression Equation is expressed as:

$$\mathbf{Y = a + b_1X_1 + b_2X_2}.$$

From the regression analysis, the equation obtained is:

$$\mathbf{Y = 3.075 + 0.474X_1 + 0.479X_2}.$$

- The constant $\mathbf{a = 3.075}$ indicates that if both user involvement (X_1) and personal technical skills (X_2) are zero, the performance of the accounting information system (Y) will have a value of 3.075.

- The coefficient **b_1 = 0.474** means that if user involvement (X_1) increases by one unit while personal technical skills (X_2) remain constant, the performance of the accounting information system (Y) will increase by 0.474 units.
- The coefficient **b_2 = 0.479** means that if personal technical skills (X_2) increase by one unit while user involvement (X_1) remains constant, the performance of the accounting information system (Y) will increase by 0.479 units.

The partial significance test (t-test) is used to determine the individual effect of each independent variable on the performance of the accounting information system. The criteria for the t-test are as follows:

1. If the t-value is less than the t-table value and the significance value is greater than 0.05, then the null hypothesis (H_0) is accepted, and the alternative hypothesis (H_1) is rejected.
2. If the t-value is greater than the t-table value and the significance value is less than 0.05, then the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted.

The t-table value used as the basis for decision-making is:

t-table = (α/2; n - k - 1) = (0.05/2; 40 - 2 - 1) = (0.025; 37) = 2.026.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,075	2,377		1,294	,204
	Involvement	,484	,127	,474	**3,808**	**,001**

a. Dependent Variable: Performance of AIS

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,075	2,377		1,294	,204
	ABILITIES	,644	,168	,479	**3,842**	**,000**

a. Dependent Variable: PERFORMANCE OF AIS

Source: SPSS Output Version 29

Based on the hypothesis testing results shown in the table above, it can be concluded that:

- The user involvement variable (X1) has a significance value of 0.000, which is less than 0.05, and a calculated t-value of 3.XXX (greater than the t-table value of 2.026). This indicates that user involvement has a significant partial effect on the performance of the accounting information system.
- The personal technical ability variable (X2) has a significance value of 0.000, which is also less than 0.05, and a calculated t-value of 3.842 (greater than the t-table value of 2.026). This proves that personal technical ability also has a significant partial effect on the performance of the accounting information system.

Simultaneous Statistical Test Results (F-test)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	**F**	Sig.
1	Regression	465,743	2	232,871	**97,186**	.000[b]
	Residuals	88,657	37	2,396		
	Total	554,400	39			

a. Dependent Variable: PERFORMANCE OF AIS

Predictors: (Constant), ABILITY, INVOLVEMENT

Based on the output from SPSS Version 29, it is found that the variables of system user involvement and personal technical skills have a significance value of 0.000, which is less than 0.05. Additionally, the calculated F-value (97.186) is greater than the critical F-table value of 3.260. Therefore, it can be concluded that system user involvement and personal technical skills simultaneously have a significant effect on the performance of accounting information systems at PT Pindad. The Partial Determination Coefficient Test (r^2) is used to identify which independent variable has the greatest influence on the dependent variable. The variable with the largest r^2 value indicates the most dominant effect on the dependent variable.

The contribution size of an independent variable to the dependent variable in regression analysis is called the Effective Contribution (SE). The total effective contributions of all independent variables equal the value of the coefficient of determination (R^2). Meanwhile, the Relative Contribution (SR) measures the proportion of each predictor variable's contribution to the regression sum of squares, with the sum of all relative contributions equaling 100% or 1.

The formulas are as follows:

- SE Formula: SE(X)% = Beta × Correlation Coefficient × 100
- SR Formula: SR(X)% = SE(X)% / R^2

The results from the SPSS Version 29 output for the partial determination coefficient test are as follows:

Variables	Regression Coefficient (Beta)	Correlation Coefficient (r)	Effective Contribution (SE)	Relative Contribution (SR)	R Square
X1	,474	,881	41,76%	49,71%	84,0%
X2	,479	,882	42,24%	50,29%	

Source: SPSS Output Version 29 - Processed by the Author

Based on the calculation results of the coefficient of determination, system user involvement (X1) contributes 41.76% to the performance of accounting information systems, while personal technical ability accounts for 42.24% of the influence on system performance. The overall coefficient of determination (r^2) of 0.840 indicates that system user involvement and personal technical skills together explain 84% of the variation in accounting information system performance, with the remaining 16% affected by other factors not included in this study.

CONCLUSION

The study concludes that both user involvement and personal technical skills significantly influence the performance of accounting information systems at PT Pindad. Enhancing these factors can improve the effectiveness and efficiency of the system, thereby supporting better organizational decision-making and operations.

1. Hypothesis H1 is supported, indicating that user involvement influences accounting information system performance by 41.76%.
2. Hypothesis H2 is supported, showing that personal technical skills impact system performance by 42.24%.
3. Hypothesis H3 is supported, demonstrating that user involvement and personal technical skills together affect accounting information system performance by 84%, with the remaining 16% attributed to other factors not explored in this study.

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