

# *Impact of User Expertise, Technological Sophistication, and Management Participation on Accounting Information Systems Effectiveness*

I Gede Surya Bayu Pradana<sup>1</sup>

I Nyoman Wijana Asmara Putra<sup>2</sup>

<sup>1,2</sup>Faculty of Economics and Business, Udayana University, Indonesia

\*Correspondences : [suryabayu1223@gmail.com](mailto:suryabayu1223@gmail.com)

## **ABSTRACT**

Effectiveness evaluates how successfully objectives are met concerning both time and quality, emphasizing the outcomes produced. This study investigates the influence of user expertise, technological sophistication, and management participation on the effectiveness of accounting information systems within BPRs in Gianyar Regency. A purposive sampling method was employed, selecting 24 BPRs and 120 respondents for the analysis. The results are supported by the Technology Acceptance Model (TAM). Through multiple linear regression analysis, the study finds that user expertise, technological sophistication, and management participation positively influence the effectiveness of accounting information systems. The research highlights the importance of enhancing these factors within BPRs to improve system effectiveness, usability, and overall benefits.

**Keywords:** *User Expertise; Technological Sophistication; Management Participation; Effectiveness of Accounting Information Systems; Technology Acceptance Model.*

## **Keahlian Pengguna, Kecanggihan Teknologi dan Partisipasi Manajemen terhadap Efektivitas Sistem Informasi Akuntansi**

### **ABSTRAK**

Efektivitas ialah sebuah ukuran yang memberi gambaran sejauh apakah target yang mampu diraih baik secara waktu atau kualitas, fokusnya pada keluaran yang dihasilkan. Penelitian ini bertujuan menguji pengaruh keahlian pengguna, kecanggihan teknologi, partisipasi manajemen pada efektivitas sistem informasi akuntansi pada BPR di Kabupaten Gianyar. Populasi penelitian ini seluruh BPR di Gianyar, dengan penentuan sampel menggunakan teknik *purposive sampling* yang menghasilkan 24 BPR sebagai sampel dan melibatkan 120 responden. *Technology Acceptance Model* (TAM) digunakan untuk mendukung hasil penelitian. Penelitian menerapkan analisis regresi linier berganda. Hasil mengindikasikan bahwa keahlian pengguna, kecanggihan teknologi, beserta partisipasi manajemen berpengaruh positif pada efektivitas sistem informasi akuntansi. Implikasi penelitian ini adalah BPR agar lebih memperhatikan terkait faktor kecanggihan teknologi, keahlian pengguna, beserta partisipasi manajemen agar dapat menambah efektivitas dari sistem informasi yang dipergunakan, sehingga sistem mampu dengan mudah digunakan dan memberikan manfaat yang baik bagi BPR.

**Kata Kunci:** Keahlian Pengguna; Kecanggihan Teknologi; Partisipasi Manajemen; Efektivitas Sistem Informasi Akuntansi; *Technology Acceptance Model*.

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## INTRODUCTION

The rapid advancement of modern technology has led to the development of various systems designed to simplify tasks and generate high-quality information, as noted by Putra & Juliarsa (2021). An Accounting Information System (AIS) is a computerized system that processes financial information, converting it into useful reports for decision-making. According to Romney & Steinbart (2018), an AIS is capable of collecting, recording, storing, and processing data to provide valuable insights for decision-makers.

The banking sector, as a financial institution, must keep pace with technological advancements. By adopting an AIS, banks can enhance their operations and improve the preparation of financial reports, which are crucial for informed decision-making. One sector that has implemented AIS is the People's Economic Bank (BPR). With an advanced AIS, BPR can deliver better services to customers, respond swiftly to market demands, and ensure that financial decisions are based on accurate and up-to-date information. This technology also enables BPR to remain competitive in a dynamic market by continually enhancing the quality of its services and operations, as highlighted by (Swahyuni & Adnantara, 2020).

The Rural Bank (BPR) has been established and developed across several regions in Bali, with Gianyar being one of the areas with the highest concentration of BPRs, totaling 24. This reflects the intense competition among BPRs in Gianyar. Additionally, the presence of 75,666 Micro, Small, and Medium Enterprises (MSMEs) in Gianyar Regency presents a significant opportunity for BPRs to provide credit to these enterprises. The large number of MSMEs increases the potential for extending credit, which, in turn, can enhance the economic welfare of the community.

By offering appropriate credit products, BPR can play a crucial role in supporting local economic growth. An advanced accounting information system is invaluable in facilitating credit provision, as it delivers timely and accurate information regarding the credit to be extended to customers. This system enables BPR to manage customer data more efficiently, minimize the risk of errors, and expedite the credit approval process.

A well-implemented accounting information system enables rural banks (BPR) to provide more personalized and responsive services to micro, small, and medium enterprises (MSMEs). With easy access to information on credit history, risk assessments, and payment status, BPRs can offer financial solutions that are specifically tailored to the needs of each MSME. Additionally, the increased transparency facilitated by this system helps build trust between BPRs and their customers, as noted by (Wijayanti & Purnawati, 2022). The ability to quickly provide product information and related credit services enhances customer trust, leading to an increase in the credit extended to customers, which subsequently contributes to the growth of BPR's assets. As assets grow, the need for a highly effective information system becomes critical, making BPR's operational activities more efficient and improving the processing of financial information, thereby enhancing BPR's performance in Gianyar Regency.

This study applies the Technology Acceptance Model (TAM) to analyze and understand the factors influencing individuals' acceptance of computer

technology. Introduced by Davis in 1989, TAM extends the Theory of Reasoned Action (TRA) (Sridarmaningrum & Widhiyani, 2018). According to this model, individuals are more likely to adopt and use technology if they perceive it as easy to use and beneficial. TAM provides a framework to explain the role of these factors in technology acceptance.

Within the TAM framework, user expertise significantly influences perceptions of both usefulness and ease of use. User expertise encompasses the skills and capabilities individuals need to perform tasks effectively and efficiently. For a computer-based accounting information system to be effective, it must be supported by users with expertise in operating both its hardware and software components. When users are proficient in utilizing the accounting information system, they are more likely to experience its benefits and ease of use, as suggested by (Ari & Juliarsa, 2023). A deep understanding of computer hardware and accounting information systems allows users to perform their tasks more efficiently, enhancing the effectiveness of the information system and providing greater benefits to stakeholders involved in decision-making processes. Research conducted by Satria & Putra (2019), Riyantini (2021), Witari & Juliarsa (2021), Surtikanti et al. (2021), Wijaya et al. (2022), Widiasih et al. (2022), Faro & Senti (2023), Ari & Juliarsa (2023), Ari et al. (2023), Putri & Juliarsa (2023) indicates that user expertise positively impacts the effectiveness of accounting information systems.

H<sub>1</sub>: User expertise positively impacts the effectiveness of accounting information systems.

According to the Technology Acceptance Model (TAM), technological sophistication is closely linked to perceptions of both usefulness and ease of use. Modern technological advancements have rapidly evolved, resulting in various systems designed to facilitate human tasks and deliver high-quality accounting information (Putra & Juliarsa, 2021). In the context of accounting, technology plays a crucial role by making the processes of recording, classifying, and presenting financial reports more efficient. The effectiveness of an Accounting Information System (AIS) depends on the presence of adequate technology to ensure smooth operation. Technological sophistication enhances the functionality of the AIS, providing significant benefits and ease in the company's operational activities. Research by Al-Eqab & Adel (2013) Kepramareni et al. (2020), Notiasih & Putra (2021), Suprihati & Kristiyanti (2021), Putra & Juliarsa (2021), Damayanti et al. (2022), Erawati et al. (2022), Ari & Juliarsa (2023), Faro & Senti (2023), Putri & Juliarsa (2023) demonstrates that advanced technological sophistication substantially enhances the effectiveness of accounting information systems.

H<sub>2</sub>: Technological sophistication positively affects the effectiveness of accounting information systems.

Within TAM, management participation is associated with the perception of usefulness. Management participation is critical to all organizational activities, as positive support from management leads to more effective and efficient processes, thereby achieving the organization's goals. Effective implementation of an AIS depends heavily on management involvement and endorsement. This support fosters positive behaviors among users or employees, enhancing the system's effectiveness. As a result, the AIS becomes easier to operate and offers

greater benefits to the company. The quality of the final AIS is directly influenced by the development process, which benefits significantly from active management participation (Surtikanti et al., 2021). The attention and commitment management devotes to the AIS are directly correlated with the system's effectiveness. Studies by Ratnaningsih & Suaryana (2014), Pradani et al. (2017), Agustina et al. (2020), Odoyo & Ojera (2020), Suprihati & Kristiyanti (2021), Hanum et al. (2021), Andi et al. (2022), Syafaat et al. (2022), Sitinjak (2023), Zahara et al. (2023) indicate that management participation significantly and positively impacts the effectiveness of accounting information systems.

H<sub>3</sub>: Management participation positively impacts the effectiveness of accounting information systems.

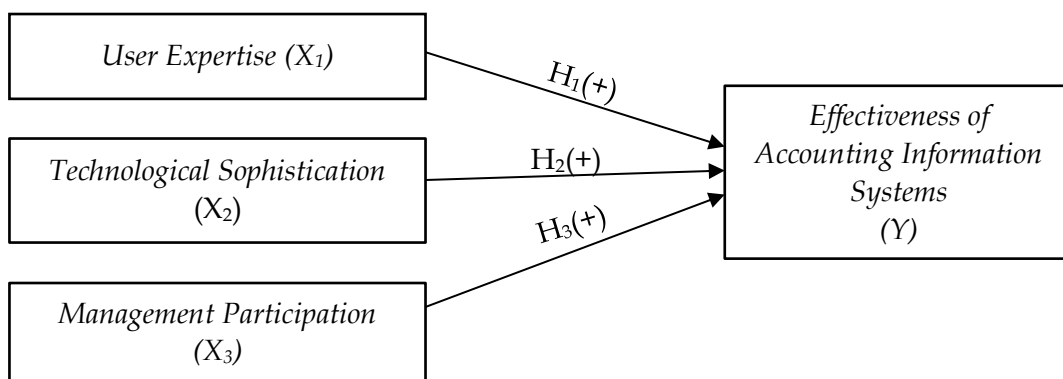


Figure 1. Research Model

Source: Research Data, 2024

## RESEARCH METHODS

This study adopts an associative quantitative approach, focusing on all BPRs (Rural Banks) in Gianyar Regency. Using purposive sampling, the study selects BPRs that utilize an Accounting Information System (AIS), resulting in a sample of 24 BPRs. Respondents are chosen based on their roles as AIS users, encompassing positions in customer service, teller roles, credit departments, accounting, and top management. This approach yields a total of 120 respondents for the study. The variables under examination include user expertise, technological sophistication, and management participation in relation to the effectiveness of the AIS. Data collection is conducted via a structured questionnaire.

While a thorough understanding of the support services provided by the information system provider is essential, the system's capabilities and capacity are equally critical to the effectiveness of the AIS. Users must possess in-depth knowledge to operate and fully utilize the system's features. Reliable support services from the provider—such as technical assistance, software updates, and ongoing training—are vital to ensuring smooth system operation and prompt resolution of issues (Vipraprastha & Sari, 2016). The effectiveness of the AIS is defined by the degree to which it enhances the efficiency and effectiveness of operations and financial reporting for its users. Delone & Mclean (2003) identified

six key indicators for assessing AIS effectiveness: service quality, system use, user satisfaction, net benefits, information quality, and system quality.

User expertise is characterized by the ability to perform tasks effectively, drawing on a combination of knowledge, skills, and inherent talents. This expertise includes a deep understanding of the AIS, technical proficiency in operating the software, and the analytical skills necessary to interpret data and produce accurate reports. Ongoing training and professional development are crucial to ensuring that users maintain their knowledge and skills in line with technological advancements and evolving business needs. Skilled users can maximize the benefits of the AIS by utilizing it effectively to optimize business processes and identify opportunities for improvement. When users possess expertise and a thorough understanding of the system, they are more likely to feel a sense of ownership and responsibility for it (Widiasih et al., 2022). According to Rahmi (2013), user expertise can be measured by dimensions such as education, training, and experience.

Technological sophistication refers to the extent to which technology provides advanced features that enhance the speed and accuracy of tasks. This sophistication encompasses various aspects of information technology that support business operations, including modern accounting software, robust database systems, and advanced analytical tools. By leveraging advanced technology, organizations can automate complex procedures, reduce manual errors, and improve overall operational efficiency. Technological sophistication also involves the complexity, characteristics, and integration of information technology within a business. Technological complexity pertains to the degree of intricacy and integration among different components of an information system. The nature of the technology includes the technical features and functionalities offered by the system, such as the capacity to handle large volumes of data, data security measures, and adaptability to changing business needs. Interdependence refers to the coordination and collaboration among various parts of the information technology infrastructure to support organizational goals (Haleem & Raisal, 2016). According to Al-Eqab & Adel (2013), the dimensions for assessing technological sophistication include information sophistication, technological sophistication, managerial sophistication, and functional sophistication.

Management participation refers to the active involvement of management in establishing and supporting internal controls within the Information Technology (IT) domain, which plays a crucial role in the successful implementation of systems. This participation encompasses management's engagement in planning, overseeing, and evaluating the accounting information system (AIS). Effective management participation ensures that the system being developed is aligned with the organization's vision, business strategy, and operational requirements. Furthermore, management is responsible for allocating the necessary resources, including budgets for system development and maintenance, user training, and technological infrastructure.

In addition to resource allocation, management must ensure clear and open communication between the IT team and end-users to promptly identify and address any issues or obstacles. Robust internal controls in IT involve the establishment of procedures and policies that safeguard the integrity,



confidentiality, and availability of information. This includes implementing access controls, monitoring system activity, and managing incident responses. With strong management participation, BPRs can ensure the secure and controlled operation of the AIS, thereby enhancing its reliability and trustworthiness.

Suprihati & Kristiyanti (2021) emphasize that management engagement is vital in supporting the deployment and development of AIS to enhance their effectiveness. Active management involvement facilitates the systematic and organized development of the AIS. Management's role extends beyond strategic decision-making about the technology to be adopted; it also includes establishing internal controls that guarantee the system's security, reliability, and compliance. Kouser et al. (2011) identify the dimensions of management participation as hardware selection, system maintenance and troubleshooting, system implementation, and planning for future development.

The data analysis methodologies used in this study include descriptive statistical analysis, classical assumption tests such as multicollinearity, normality, and heteroscedasticity tests, as well as multiple linear regression analysis. The following equation represents the multiple linear regression model:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e \dots\dots\dots (1)$$

Where:

- Y : Effectiveness of Accounting Information Systems
- $\alpha$  : Constant
- $\beta_1, \beta_2, \beta_3$  : Regression Coefficient of Independent Variables
- $X_1$  : User Expertise
- $X_2$  : Technological Sophistication
- $X_3$  : Management Participation
- e : Residual Value

## RESULT AND DISCUSSION

Descriptive statistics for variables are used to describe the characteristics of each variable, such as the maximum, mean, minimum, and standard deviation.

**Table 1. Results of Descriptive Statistical Analysis**

	N	Min	Max	Mean	Std. Deviation
User Expertise ( $X_1$ )	120	17	30	21.51	1.824
Technological Sophistication ( $X_2$ )	120	26	35	32.37	3.029
Management Participation ( $X_3$ )	120	17	25	20.98	2.458
Effectiveness of Accounting Information Systems (Y)	120	23	30	26.36	2.176

Source: Research Data, 2024

The user expertise variable ranges from 17 to 30, with a mean score of 21.51, suggesting that respondents generally agree with the statements in the questionnaire. The standard deviation of 1.824, being lower than the mean, indicates a relatively consistent distribution of data for user expertise.

The technology sophistication variable has values between 26 and 35. With a mean score of 32.37, close to the upper limit, respondents generally concur with the questionnaire statements. A standard deviation of 3.029, which is less than the

mean, reflects a relatively uniform distribution of data for technological sophistication.

The management participation variable ranges from 17 to 25, with a mean score of 20.98, again indicating general agreement with the questionnaire items. The standard deviation of 2.458, being lower than the mean, suggests a relatively consistent distribution of management participation data.

Lastly, the effectiveness of the accounting information system variable spans from 23 to 30, with a mean score of 26.36, indicating that respondents largely agree with the questionnaire statements. The standard deviation of 2.176, which is below the mean, points to a relatively uniform distribution of data regarding the system's effectiveness.

Before performing the regression analysis, the regression model must pass classical assumption tests. The normality test, using the One-Sample Kolmogorov-Smirnov Test with the Monte Carlo method, shows that the Monte Carlo Sig. (2-tailed) coefficient is 0.124, which exceeds 0.05, indicating that the regression model is normally distributed.

To identify multicollinearity, tolerance values and Variance Inflation Factors (VIF) are examined. Multicollinearity is absent if the tolerance value is greater than 0.10 and the VIF is less than 10. The test results are as follows: user expertise with tolerance = 0.844 and VIF = 1.184, technological sophistication with tolerance = 0.858 and VIF = 1.166, and management participation with tolerance = 0.881 and VIF = 1.135. These results confirm that there are no multicollinearity issues in this research model.

Heteroscedasticity is assessed by examining the sig. (2-tailed) values of all variables, where values greater than 0.05 indicate the absence of heteroscedasticity. The test results show the following sig. (2-tailed) values: user expertise = 0.594, technological sophistication = 0.804, and management participation = 0.811. These findings indicate that there are no signs of heteroscedasticity in the regression model, as all independent variables have sig. (2-tailed) values exceeding 0.05.

**Table 2. Multiple Linear Regression Results**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	8.099	2.300		3.522	0.001
User Expertise (X <sub>1</sub> )	0.363	0.095	0.305	3.817	0.000
Technological Sophistication (X <sub>2</sub> )	0.117	0.057	0.162	2.052	0.042
Management Participation (X <sub>3</sub> )	0.318	0.069	0.359	4.597	0.000
<i>Adjusted R Square = 0.360</i>					
<i>Sig. F = 0.000</i>					

Source: Research Data, 2024

The regression coefficient values for the independent variables and the constant term for the dependent variable are as follows:

$$Y = 8.099 + 0.363 X_1 + 0.117 X_2 + 0.318 X_3 + e \dots\dots\dots (2)$$

The Adjusted R Square value of 0.360 indicates that 36% of the effectiveness of the accounting information system (Y) is explained by user competence (X<sub>1</sub>),

technological sophistication (X2), and management participation (X3). The remaining 64% is attributable to factors not included in the model.

The Sig. F value of 0.000, being less than 0.05, demonstrates that user competence (X1), technological sophistication (X2), and management participation (X3) collectively influence the effectiveness of the AIS (Y). Therefore, the model used in this study is appropriate, allowing for the continuation of hypothesis testing.

The significance values for the variables are as follows: user competence = 0.000, technological sophistication = 0.042, and management participation = 0.000. These results indicate that each of these factors significantly impacts the effectiveness of the AIS.

User expertise positively influences the effectiveness of accounting information systems. This relationship can be understood through the Technology Acceptance Model (TAM), specifically in terms of perceived usefulness and ease of use. The high level of expertise among AIS users in BPRs in Gianyar Regency enables them to fully utilize the system's capabilities, thereby enhancing the effectiveness of the AIS. As a result, the quality of the accounting information produced is improved, making it more valuable for stakeholders in decision-making processes. This finding is consistent with the research of Satria & Putra (2019), Riyantini (2021), Witari & Juliarsa (2021), Surtikanti et al. (2021), who found that user competence positively affects AIS effectiveness. Additionally, studies by Wijaya et al. (2022), Widiasih et al. (2022), Faro & Senti (2023), Ari et al. (2023), dan Putri & Juliarsa (2023) further corroborate this conclusion, demonstrating that user competence positively influences AIS effectiveness. Ari & Juliarsa (2023) emphasize that when users are proficient in using AIS, they experience greater benefits and ease, underscoring that AIS effectiveness is determined not only by technological sophistication but also by user competence.

Technological sophistication also has a positive effect on AIS effectiveness. This outcome can be explained through TAM, in terms of perceived usefulness and ease of use. Advanced technology provides numerous benefits to BPRs, making daily operations more efficient. As the technology underpinning the AIS becomes more sophisticated, the accuracy, relevance, and reliability of the information it produces improves, thereby reflecting the BPR's financial condition and supporting future development. Additionally, as technology advances, the AIS becomes more user-friendly, enhancing overall system effectiveness. These findings align with research by Kepramareni et al. (2020), Notiasih & Putra (2021), Suprihati & Kristiyanti (2021), Putra & Juliarsa (2021), Damayanti et al. (2022), all of which indicate that technological sophistication positively impacts AIS effectiveness. The results are also consistent with studies by Erawati et al. (2022), Ari & Juliarsa (2023), Faro & Senti (2023), dan Putri & Juliarsa (2023), which demonstrate that technological sophistication positively influences AIS effectiveness. Additionally, Al-Eqab & Adel (2013) found a strong positive relationship between IT sophistication and the quality of accounting information, a conclusion further supported by Ernawatiningsih & Kepramareni (2019), who showed that increased IT sophistication enhances the effectiveness of AIS within companies.



Management participation plays a critical role in enhancing the effectiveness of accounting information systems, a relationship that can be understood through the Technology Acceptance Model (TAM) and its emphasis on perceived usefulness. Active involvement from management in key areas such as planning, overseeing, implementing, evaluating, and developing the BPR's accounting information system is essential. This involvement extends to system maintenance, where management collects user feedback to address technical issues that could compromise the relevance of the system's information. Additionally, by supporting the development of user skills, management maximizes system utilization, thereby helping BPRs achieve their vision and mission. As a result, management participation significantly contributes to the effectiveness of the AIS at BPRs.

These findings are consistent with those of Dwitrayani et al. (2017), who highlight the critical role of management in enhancing the effectiveness of accounting information systems. The study's conclusions are also in line with the research conducted by Ratnaningsih & Suaryana (2014), Pradani et al. (2017), Agustina et al. (2020), Odoyo & Ojera (2020), all of which demonstrate a positive impact of management participation on AIS effectiveness. Further support comes from studies by Suprihati & Kristiyanti (2021), Hanum et al. (2021), Andi et al. (2022), Syafaat et al. (2022), Sitinjak (2023), Zahara et al. (2023), which consistently affirm that management participation enhances the effectiveness of these systems. Additionally, (Surtikanti et al., 2021) emphasize that the quality of the final accounting information system is significantly influenced by the development process, which is strongly supported by active management participation.

## CONCLUSION

The research findings indicate that user expertise, technological sophistication, and management participation positively influence the effectiveness of accounting information systems. This suggests that greater user expertise, more advanced technology, and stronger management participation significantly enhance the effectiveness of accounting information systems in BPRs within Gianyar Regency.

To improve the effectiveness of these systems, BPRs in Gianyar Regency should design and select training programs that align with the implemented AIS and provide regular training sessions for AIS users. Additionally, these BPRs should leverage advanced technology in their operations, particularly in decision-making, to ensure that decisions are aligned with the information generated by the system. A deeper understanding of the specific accounting information systems in use is also crucial. BPRs should regularly develop and update these systems to meet their evolving needs. Implementing these recommendations will enhance the effectiveness of AIS within BPRs in Gianyar Regency.

For future research, when including management participation or similar variables, it is recommended to ensure that respondents are top management, as they are the primary decision-makers. Additionally, future studies should consider incorporating variables beyond those examined in this study and exploring other financial institutions or sectors beyond BPRs.

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