Journal of Innovative and Creativity
Journal Homepage: https://joecy.org/index.php/joecy
e-mail: journaljoecy@gmail.com

Faculty of Education
University of Pahlawan Tuanku Tambusai
ISSN 2775-771X (Online)
ISSN 2962-570X (Printed)
6 (2) 2025, Page: 51441-51449

The Impact of COBIT 5 Implementation on Employee Performance Through the Quality of Management Information Systems At BNI

Zacky Permana [1], Pongki Muhammad [2], Niken Dwilia [3], Vicky Brama Kumbara [4]
[12]Universitas Putra Indonesia "YPTK" Padang, Indonesia
Corresponding Author: Nadia, Surname, e-mail: zpermana0401@gmail.com

Published: September , 2025

ABSTRACT

This study aims to determine the effect of COBIT 5 implementation on employee performance through the quality of the management information system at the BNI Sawahlunto Sub-Branch Office.

Materials and Methods. The population in this study consisted of all employees of the BNI Sawahlunto Sub-Branch Office, totaling 52 employees. The sampling technique used was total sampling, in which the entire population was included as the research sample. Therefore, the sample consisted of 52 employees. Data analysis was conducted using Structural Equation Modeling (SEM) with the Partial Least Squares (PLS) approach.

Results. The results show that the implementation of COBIT 5 has a positive and significant effect on the management information system. The management information system also has a positive and significant effect on employee performance. Furthermore, the implementation of COBIT 5 has a positive and significant effect on employee performance through the management information system. Employee performance can be explained by the implementation of COBIT 5 and the management information system by 78.2% ($R^2 = 0.782$), while the management information system can be explained by the implementation of COBIT 5 by 77.8% ($R^2 = 0.778$).

Conclusions. These findings indicate that the implementation of COBIT 5 and the quality of management information systems play an important role in improving employee performance. Strengthening information technology governance through COBIT 5 can support the development of effective management information systems and contribute to improved employee performance at the BNI Sawahlunto Sub-Branch Office.

Keywords: COBIT 5, management information system, employee performance.

© The Author(s). 2021 Open Access This article is licensed under a Creative Commons Atibution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. To view a copy of this licence, visit http://creativecommons.org/licenses/by/4.0

INTRODUCTION

In today's world, more and more companies are relying on information technology (IT) to process their business information electronically. Companies use IT to run their businesses, produce products, and deliver services. Companies can no longer afford to build barriers around their information systems and lock everyone out; instead, they must share information with those they interact with frequently: customers, vendors, employees, business partners, and so on. This increased interconnectedness makes information systems more vulnerable to problems. The use of IT has now impacted all aspects of the world, including banking. The banking industry has undergone significant changes in recent years, coupled with the development of information technology implemented by banks to gain a competitive advantage.(Fitriani, 2018).

Employee performance and efficiency are key factors for a company to continuously outperform its competitors. Therefore, every company must continually innovate. One such innovation is improving employee attendance management, focusing on increasing employee productivity and development to be more effective yet efficient. Therefore, Bank BNI has begun innovating by implementing an attendance system to improve employee management effectiveness and efficiency. To realize the key activities outlined above, almost all processes are implemented using an information system, and almost all of its content has been digitized. The primary objective of this governance design is to achieve maximum results from the implementation of the Information System.(Surjandy et al., 2020)In carrying out their duties and responsibilities, BNI Bank employees

have implemented a management information system in managing data, including in all their work. The Management Information System has a significant role and benefits between data processing facilities and employees as users, where the relationship between one unit and another will be integrated in the process of data collection, data processing, data storage, data feedback, and data distribution to internal and external organizations.(Karim et al., 2022).

A Management Information System (MIS) is a management tool used to support company management in receiving, processing, and managing company information effectively and systematically with the aim of boosting company performance. Information systems also directly influence individual behavior within an organization. On the positive side, information systems typically increase individual efficiency. On the negative side, information systems can lead to isolation, as individuals have everything they need to work without the need to interact with others.(Naidah, 2019)Many people misunderstand the concept of information. They assume they know about it and believe the technology systems they create produce information, when in fact, they don't. The function of information is to eliminate uncertainty and risk, leading to sound decisions. Good information has certain characteristics: accuracy, timeliness, relevance, reliability, verifiability, and ease of understanding and access. A good information system can prevent lengthy searches or even loss of information, which can be detrimental to the company. The implementation of a management information system essentially involves two main components: the user and the system. Through the collaboration of these two components, managers will be greatly assisted in understanding the extent of the organization's management and development. The right management information system can lead an organization to become better.(Mufidah & Ghifary, 2021).

In processing information systems, a management model is needed that can be used as a reference in accordance with institutional strategies and objectives and can then be used as a measuring tool in overcoming problems that occur in institutions such as the objectives of COBIT. Control Objectives for Information and Connecting Technology (COBIT) is an IT framework tool published by the Information System Audit and Control Association. COBIT is a framework or framework for IT governance (information technology), or a collection of tools that support and enable managers to bridge the gap between control requirements, technical issues, and good practices.(Surjandy et al., 2020).

COBIT is an information technology management framework created by the Information Systems Audit and Control Association (ISACA) and the IT Governance Institute (ITG) that includes integrated control objectives across five domains: Planning and Enterprise (OP), Acquisition and Implementation (AI), Delivery and Support (DSS), and Monitoring and Evaluation (MEA), Evaluated, Direct and Monitor (EDM). Simply put, it can help companies create optimal value with IT by maintaining a balance between recognizing and optimizing risk levels and resource utilization. COBIT 5 uses governance and management practices to describe good practice actions for the effects of enterprise governance and IT management. COBIT 5 is not intended to replace any of the frameworks, but to enhance governance and management and integrate best management practices across the enterprise. COBIT 5 has original information criteria: Efficiency, Effectiveness, Confidentiality, Integrity, Availability, Compliance, and Reliability. The COBIT 5 framework consists of five domains: EDM, APO, BAI, DSS, and MEA.(Aditya & Febiola, 2022).

The implementation of COBIT in banking is implemented in various fields. COBIT is implemented to assess standard banking services and procedures in the field of service and security by measuring the performance of information technology using COBIT 5. Measurements are carried out from the customer acceptance process until transaction processing. Bayer and Ryser stated that banking risk management provides benefits, among others, banks have longer asset resilience, banks are able to monitor or carry out controls easily so that banks are able to predict possibilities related to credit failure and banks can be optimal in providing services to customers with the existence of this monitoring and control function, banks can also increase their shareholder value, improve the quality of methods and decision-making processes based on the availability of accurate information.(Aditya & Febiola, 2022).

Similar research has been conducted by(Karim et al., 2022),(Naidah, 2019), And(Nurul Ichsan, 2020)which found that information systems have a significant influence on employee performance.

In addition, research from(Gunawan et al., 2022),(Gumilang & Jonathan, 2018)which found that the application or implementation of COBIT affects an organization's performance. Based on this, the author wants to conduct research entitled "The Effect of COBIT 5 Implementation on Employee Performance Through the Quality of Management Information Systems."At BNI Bank Sawahlunto Branch Office.

METODE

This study uses a quantitative approach. The type of research employed in this study is causal relationships or cause-and-effect relationships. Data were obtained from survey results, which involved distributing questionnaires to respondents who were the research subjects. The population in this study is all BNI Bank employees. Sawahlunto Branch OfficeThe sample size for this study was 52 employees. The total sampling technique used in this study was used to sample the entire population without having to take a specific number of samples. Therefore, the sample size for this study was all 52 employees of Bank BNI.Sawahlunto Branch Office.

This study uses Structural Equation Modeling (SEM) analysis tools using the partial least squares (PLS) program. PLS is a component-based approach to testing structural equation models, commonly called SEM. PLS is based on the idea of having two iterative procedures that use least squares estimation for single and multi-component models. By applying the procedures, this algorithm aims to minimize the variance of all dependent variables, therefore the cause and direction between all variables need to be clearly defined. PLS is divided into measurement models and structural models.

Partial Least Square This is a powerful analysis method, because it is not based on many assumptions. The data analysis method using Partial Least Square is divided into two models, namely:

a. Outer Model

   According to Ghozali (2018), the outer model test shows how the manifest or observed variables represent the latent variables to be measured. Evaluation of the measurement model is carried out to test the validity and reliability of the model. This validity test is necessary to determine whether the measuring instrument compiled actually measures what needs to be measured. This measurement is carried out because the preparation of this research questionnaire is based on the theoretical construction of each research variable. Then, from these variables, indicators are sought, then described in each item in the questionnaire. There are two criteria for assessing the validity test in the outer model: convergent validity and discriminant validity. Convergent validity of the measurement model with reflexive indicators is assessed based on the correlation between item scores and component scores calculated using PLS. The individual reflexive measure is declared high if the loading factor value is more than 0.7 with the measured construct for confirmatory research. The loading factor value between 0.6 - 0.7 for exploratory research is still acceptable and the Average Variance Extracted (AVE) value must be greater than 0.5. The discriminant validity of the measurement model with reflective indicators is assessed based on cross-loading for each variable must be greater than 0.7. If the correlation of the construct with the measurement item is greater than the size of the other constructs, then it indicates that the latent construct predicts the size in their block better than the other blocks. Another way to measure and test discriminant validity is by comparing the square root of the Average Variance Extracted (AVE) for each construct with the correlation value between the construct and other constructs in the model. According to Fornell and Larcker in Ghozali (2018), good discriminant validity is indicated by the square root of the AVE for each construct being greater than the correlation between the constructs in the model.

   The next test in the outer model is reliability. According to Ghozali (2018), reliability is actually a measuring tool for measuring a questionnaire that is an indicator of a variable or construct. A questionnaire can be said to be reliable if respondents' answers to the statements in the questionnaire are consistent or stable over time. Reliability testing is conducted to prove the accuracy, consistency, and precision of the instrument in measuring the construct. Measuring the reliability of a construct with reflective indicators can be done in two ways: Cronbach's Alpha and Composite Reliability. A construct is said to be reliable if the Cronbach's Alpha and Composite

Reliability values are greater than 0.7 for confirmatory research, and a value of 0.6–0.7 is still acceptable for exploratory research.

Table 1. Rule of Thumb Outer Model

Criteria	Parameter	Rule of Thumb
Convergent Validity	Loading Factor	> 0.70
	Average Variance Extracted (AVE)	> 0.50
Discriminant Validity	Cross Loading	> 0.70 for each variable
Reliability	Cronbach's Alpha	> 0.70
	Composite Reliability	> 0.70

b. Inner Model

Inner modelThis will be used to test the hypothesis, but before testing this we must determine the model test (goodness of fit) in this study.

1) Goodness of Fit (GoF) test

Used to assess the accuracy of the model used in this study. Goodness of fit can be evaluated by looking at the r-square value. The higher the r-square value, which is closer to 1, the stronger the accuracy of the model used in this study. In this study, there is one r-square value that can be observed, namely the r-square value of the knowledge sharing variable.

2) Hypothesis Testing

Hypothesis testing is a test to see whether the hypothesis being studied is answered or not. This hypothesis assessment includes the direct influence of an exogenous construct on the endogenous construct. The assessment takes into account the T-statistic value which is the calculated T compared to the T-table of 1.96. If the T-statistic value is > than 1.96 then the hypothesis is accepted and if the T-statistic value is < than 1.96 then the hypothesis is rejected. Next to assess the indirect effect, namely the influence of a particular endogenous construct on a particular endogenous through an intervening construct. If the calculated T-value is greater than the T-table value then it can be concluded that an intervening effect occurs, conversely if the calculated T-value is lower than the T-table value then it can be concluded that no intervening effect occurs. Thus, it can be said that there is a significant positive influence from the comparison results above the calculated T-value or the T-statistic is greater than the T-table.

RESULTS AND DISCUSSION

Outer Modelor Measurement Model

Outer model testing was conducted based on the results of a questionnaire trial conducted for all research variables. An item or statement was considered valid if it had a correlation value or convergent validity value above 0.6.

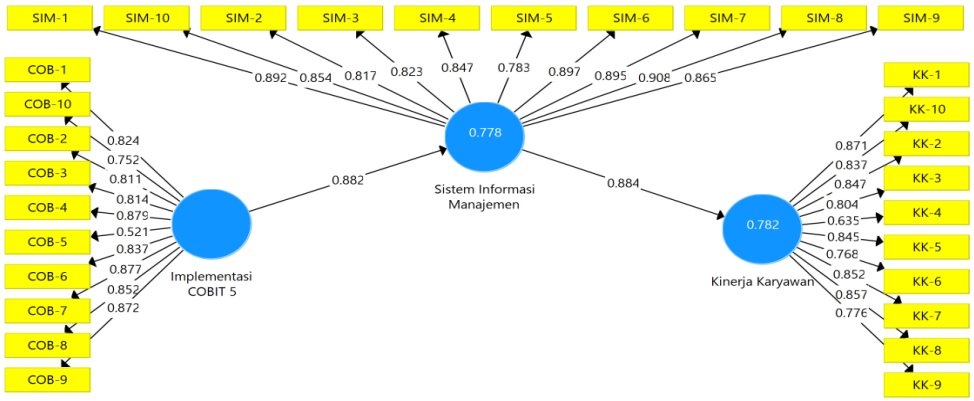

Figure 1. Outer Model

In the Outer Model test after eliminating invalid items, it can be seen that all items are declared valid because they have an outer loading value > 0.6.

Average Variance Extracted (AVE) Assessment

The following will present the AVE values for all constructs (variables) in Table 1.

Table 2. Average Variance Extracted

	Average Variance Extracted (AVE)	Comparator	Information
COBIT 5 Implementation	0.656	0.5	Good construction
Employee performance	0.659	0.5	Good construction
Management Information System	0.738	0.5	Good construction

Based on Table 1, it can be concluded that all constructs or variables above meet good validity criteria. This is indicated by the Average Variance Extracted (AVE) value being greater than 0.50, as recommended by the criteria.

Reliability

A variable's reliability is considered good if it has a Cronbach's Alpha value of more than 0.70 (Ghozali, 2018). In this study, the Cronbach's Alpha test is as follows:

Table 3. Composite Reliability

	Cronbach's Alpha	Composite Reliability	Comparator	Information
COBIT 5 Implementation	0.940	0.950	0.7	Reliable
Employee performance	0.942	0.951	0.7	Reliable
Management Information System	0.960	0.966	0.7	Reliable

Based on the table above, it shows that the statements from each variable are all stated as reliable, this is because the Cronbach's Alpha value is > 0.70.

Inner Model (Structural Model)

The structural model is examined by examining the R-square value. Model assessment using PLS begins by examining the R-square for each dependent latent variable. Changes in the R-square value can be used to assess the substantive influence of a particular independent latent variable on the dependent latent variable. In this study, the Structural (Inner) Model is as follows:

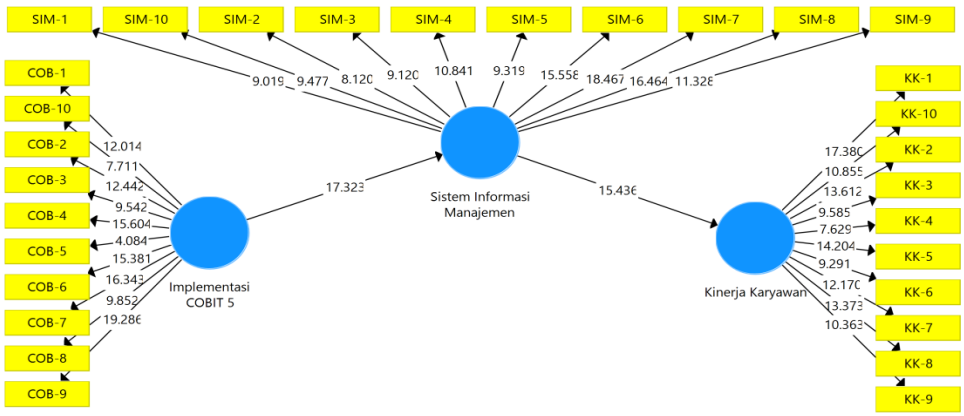

Figure 3. Inner Model

Next, as explained previously, the inner model assessment is evaluated using the R-Squared value to assess the influence of certain exogenous latent constructs on the endogenous latent constructs to determine whether they have a substantive influence. The R-Square estimates are shown in Table 3:

Table 3. R-Square Evaluation

	R Square	R Square Adjusted
Employee performance	0.782	0.778
Management Information System	0.778	0.773

Table 3 shows the testing of the structural model conducted by looking at the R-square value which is a goodness-fit test of the model. The table above illustrates that the employee performance variable is influenced by the implementation of COBIT 5 and the management information system by 0.782 or 78.2%, while the remaining 21.8% is influenced by other variables not explained in this study. The management information system can be explained by the COBIT 5 implementation variable by 0.778 or 77.8% and the remaining 22.2% is influenced by other variables not included in this study.

Hypothesis Testing (Resampling Bootstrapping)

Hypothesis testing in this study uses a two-way hypothesis. The next step is to compare the calculated t value with the t table. A hypothesis is considered significant if its calculated t value is greater than the t table (calculated t > t table) with a significance level of 0.05, which is known to have a statistical value of 1.96.

In this study, the following are the results of the hypothesis test which can be seen in tables 4 and 5 as follows:

Table 4. Direct Influence

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
COBIT 5 Implementation - Management Information System	0.882	0.875	0.051	17,323	0,000
Management Information System - Employee Performance	0.884	0.872	0.057	15,436	0,000

Based on the results of the hypothesis test in Table 3, the following conclusions can be drawn:

1. The implementation of COBIT 5 has a positive and significant effect on the management information system, this is because the tstatistic value (17.323) > ttable value (1.96) with PValue 0.000 < 0.05. So H1 is accepted.
2. The management information system has a positive and significant effect on employee performance, this is because the t-statistic value (15.436) > t-table value (1.96) with a P-value of 0.000 < 0.05. Therefore, H2 is accepted.

Table 5. Indirect Influence

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
COBIT 5 Implementation -> Management Information System -> Employee Performance	0.780	0.765	0.084	9,270	0,000

Based on the results of the indirect hypothesis test in table 5, it can be concluded that the Implementation of COBIT 5 has a positive and significant effect on Employee Performance through the Management Information System, this is because the tstatistic value (9.270) > ttable value (1.96) with PValue 0.000 < 0.05. So H3 is accepted.

Discussion

The Impact of COBIT 5 Implementation on Management Information Systems

COBIT 5 Implementationhas a positive and significant effect onManagement information systems. These results indicate that the better the implementation of COBIT 5 in an organization, the better the quality of the resulting management information system.COBIT 5 is a comprehensive framework that can assist (governance) and (management) management in achieving organizational/company goals. A framework can optimize the quality of information technology, aligning the benefits of information technology with the level of risk and resource utilization. COBIT 5 provides comprehensive IT management and an end-to-end company commitment to the benefits of information technology, while also taking into account the importance of information technology from both internal and external stakeholders. The better the implementation of COBIT 5 in an organization, the better the quality of the information produced.

The Influence of Management Information Systems on Employee Performance

Management information systems have a positive and significant impact on employee performance, where the better the management information system, the more the resulting performance will increase.Information systems play a vital role in companies, particularly in the delivery and exchange of information from headquarters to various stakeholders within the company. Rapidly receiving reciprocal information will assist employees, such as those working in the field, in carrying out and controlling their work to achieve optimal results. Information is essential for all parties within the company, including employees, in carrying out their duties. Employees working in the field require fast and accurate information to work effectively and efficiently to achieve maximum results. The purpose of establishing a management information system (MIS) is to provide companies with useful information for decision-making, both for routine and strategic decisions. Therefore, a management information system is a system that provides information to all parties within the company in carrying out their duties. The results of this study are in line with the results of research found by(Karim et al., 2022),(Naidah, 2019), And(Nurul Ichsan, 2020)who found that information systems have a significant influence on employee performance.

The Impact of COBIT 5 Implementation on Employee Performance through Management Information Systems

COBIT 5 ImplementationHaving a positive and significant impact on employee performance through management information systems, COBIT 5 is a comprehensive framework that can help companies achieve their goals for simple management and administration of corporate information technology. COBIT 5 helps companies create optimal value from information technology by maintaining a balance between gaining benefits and optimizing the level of risk and resource utilization. COBIT 5 defines 37 key process control practices and 209 control activities in detail regarding governance and management processes. Optimal implementation of COBIT 5 will help improve employee performance. Implementing COBIT 5 will accelerate performance and provide maximum results for the company. COBIT in banking is implemented in various fields. COBIT is implemented to assess standard banking services and procedures in the areas of service and security

by measuring the performance of information technology using COBIT 5. Measurements are carried out from the customer acceptance process to transaction processing and employees will feel satisfied with using technology in their work. The results of this study are in line with the results of research from(Gunawan et al., 2022),(Gumilang & Jonathan, 2018)which found that the application or implementation of COBIT affects the performance of an organization.

CONCLUSION

This study aims to determineThe Impact of COBIT 5 Implementation on Employee Performance Through the Quality of Management Information SystemsAt the BNI Bank Sawahlunto Branch Office. Based on the research results, it can be concluded thatCOBIT 5 Implementationhas a positive and significant effect onManagement information system.Management information systems have a positive and significant impact on employee performance.COBIT 5 Implementationhas a positive and significant effect on employee performance through management information systems. Employee performance is influenced by the implementation of COBIT 5 and management information systems by 0.782 or 78.2%, while the remaining 21.8% is influenced by other variables not explained in this study. Management information systems can be explained by the COBIT 5 implementation variable by 0.778 or 77.8% and the remaining 22.2% is influenced by other variables not included in this study.

BIBLIOGRAPHY

Abdul Kadir. (2014). Introduction to Information Systems Revised Edition. In Revised Edition.

Aditya, NMB, & Febiola, S. (2022). Analysis of the Influence of Information Technology Risk Management Framework Cobit 5 on Employees (Case Study: Pt. Bukit Makmur Mandiri Utama Balikpapan. Ikraith Informatika Journal, 6(1), 1–9.

Arifin, N. (2018). Human Resource Management: Theory and Case Studies. Unisnu Press.

Fitriani, D. (2018). Analysis of the Influence of Information Technology Use on Employee Performance at PT. Asuransi Jiwasraya Pontianak. Cogito Smart Journal, 4(1), 171. https://Doi.Org/10.31154/Cogito.V4i1.110.171-187

Gumilang, SFS, & Jonathan, F. (2018). Conceptual Model of IT Governance Implementation in Microfinance Institutions Based on the COBIT 5 Framework. National Conference on Information Systems.

Gunawan, EA, Santoso, H., & Eko Indrajit, R. (2022). Evaluation of IT Governance Using the COBIT Framework on the Impact of Performance in Hospitals. Journal of Informatics Innovation. https://Doi.Org/10.51170/Jii.V7i1.224

Hariyanto, S. (2018). Management Information Systems. Management Information Systems.

Karim, N., Machmud, R., & Bokingo, A.H. (2022). The Influence of Management Information Systems on Employee Performance at Bank BRI Batudaa Unit. … : Scientific Journal of Management5(2), 620–627. Https://Ejurnal.Ung.Ac.Id/Index.Php/Jimb/Article/View/16507%0ahttps://Ejurnal.Ung.Ac.Id/Index.Php/Jimb/Article/Download/16507/5208

Lediwara, N. (2020). IT Governance Analysis Using the COBIT 5 Domain Framework DSS, MEA, and BAI. Pseudocode. https://Doi.Org/10.33369/Pseudocode.7.2.97-104

Mangkunegara, AAAP (2018). Corporate Human Resource Management. Pt. Remaja Rosdakarya.

Mufidah, E., & Ghifary, MT (2021). Application of Management Accounting Information Systems to MSME Performance Through Locus of Control. Media Mahardhika. https://Doi.Org/10.29062/Mahardika.V19i2.259

Naidah, H. (2019). The Influence of Management Information Systems (MIS) on Employee

Performance at PT. Metro Batavia Air, Makassar District. Information Systems, 1, 11.

Nurul Ichsan, R. (2020). The Influence of Management Information Systems on Employee Performance at the Medan Branch of BPJS Ketenagakerjaan. Metadata Scientific Journal. https://Doi.Org/10.47652/Metadata.V2i2.26

Putra, IBAEM, Gunantara, N., & Sudarma, M. (2021). Information Technology Governance Using the COBIT 5 Framework in Government and Private Institutions. Scientific Journal of Electrical Technology. https://Doi.Org/10.24843/Mite.2021.V20i01.P01

Robbins, S. ., & Coulter, M. (2018). Management. In Boston.

Sofa, K., Suryanto, TLM, & Suryono, RR (2020). Information Technology Governance Audit Using the Cobit 5 Framework at the Public Works Department of Tanggamus Regency. Journal of Technology and Information Systems. https://Doi.Org/10.33365/Jtsi.V1i1.50

Sudjiman, PE, & Sudjiman, LS (2020). Analysis of Computer-Based Management Information Systems in the Decision-Making Process. Teika. https://Doi.Org/10.36342/Teika.V8i2.2327

Surjandy, S., Fernando, E., Condrobimo, AR, & Yudho, MR (2020). Evaluation of IT Governance Implementation in Banks Based on COBIT 5 (Case Study at Bank XYZ). Journal of Information Technology and Computer Science, 7(3), 453. https://Doi.Org/10.25126/Jtiik.2020731457