



# Evaluation of Information Technology Governance at DISKOMINFO Tasikmalaya City Using COBIT 2019

Nadia Rachmasari Biduri<sup>a</sup>, Cecep Muhamad Sidik Ramdani<sup>b,\*</sup>

<sup>a</sup> Department of Informatics, Universitas Siliwangi, Tasikmalaya, Indonesia

<sup>b</sup> Department of Information System, Universitas Siliwangi, Tasikmalaya, Indonesia

Corresponding author: \*[cecepmuhamad@unsil.ac.id](mailto:cecepmuhamad@unsil.ac.id)

**Abstract**— The Office of Communication and Informatics (DISKOMINFO) is an agency engaged in the fields of communication, informatics, coding and statistics. Based on the results of interviews with the Head of Application and Informatics DISKOMINFO Tasikmalaya City, it is known that there are obstacles related to limited resources. Starting from human resources, equipment, budget, and also other supporting facilities. So that an evaluation of information technology governance is needed to determine the capabilities possessed by the information technology. This study uses the COBIT 2019 framework using the RACI diagram as a mapping reference for observation and questionnaire distribution. The domains used are BAI02 (Managed Requirements Definition), DSS02 (Managed Service Requests and Incidents), and MEA01 (Managed Performance and Conformance Monitoring). The results of this study are to determine the capability level in each domain so that the current conditions of the Tasikmalaya City DISKOMINFO are obtained. After carrying out the analysis, it was found that the service performance from the BAI02 domain was at level 4, the service performance from the DSS02 domain was at level 2, and the service performance from the MEA01 domain was at level 3. The results of this service performance measurement made a recommendation to be implemented to increase the value information technology governance in accordance with the needs of DISKOMINFO Tasikmalaya City. Capability level objectives can be increased by carrying out activities that are not yet optimal by the agency until it reaches the full value for each level.

**Keywords**— Capability Level; COBIT 2019; IT Governance

Manuscript received 17 Jul. 2023; 23 August. 2023; accepted 15 Nov. 2023. Date of publication Nov 2023.

International Journal of Applied Information Systems and Informatics is licensed under a Creative Commons Attribution-Share Alike 4.0 International License.



## I. INTRODUCTION

Information technology governance is an important part of managing an organization or an agency which as a whole consists of leadership superiors and also the organizational structure and processes that exist to ensure that the continuation of organizational information technology is aligned with the development of organizational strategies and goals [1]. According to the IT Governance Institute (ITGI, 2012), information technology governance or IT Governance is the responsibility of a board of directors and upper management. Governance consists of leadership, organizational structure, and processes that ensure that the strategy and organizational goals of the company and IT are maintained and also sustainable. IT Governance is located at several levels in the organization, namely at the strategic level where the board is involved (board of directors), the management level at the executive and management level, and at the operational level with IT and business management. It can be concluded that all levels of the organization, business, and IT need to be involved in the IT governance process and must understand their respective roles and responsibilities within its framework [2].

The Office of Communication and Informatics (DISKOMINFO) is an agency responsible for information processing within the Government. The Office of Communication and Informatics (DISKOMINFO) has the main task of assisting the Mayor in carrying out regional government affairs and assistance tasks in the fields of communication and informatics, statistics, and also coding.

Evaluation is a systematic process to determine the value of something (activities, provisions, processes, decisions, objects, people, etc.) based on certain criteria through assessment. Evaluators can directly compare with general criteria and can also take measurements of what is evaluated and then compare with certain criteria [3].

One method of evaluating information technology governance is Control Objective and related Technology (COBIT), which is designed as a tool in solving problems in IT Governance in understanding, managing, and optimizing the benefits associated with organizational information resources. COBIT 2019 is the framework that will be used in this research. COBIT 2019 is a continuation of the previous version of COBIT 5. In this latest version there are several changes so that COBIT 2019 is flexible to current technological developments. In COBIT 2019, it has a focus area that makes it customizable to the company through

process selection so that it is aligned with the company's strategy and business goals. For the governance area between COBIT 2019 and COBIT 5, it is still the same, namely governance and management. But for measuring the level of capability is different, COBIT 2019 uses a capability model while for COBIT 5 uses a capability assessment [4].

In the 2019 COBIT framework there are APO, BAI, DSS, EDM, and MEA domains [5]. Based on the results of interviews with the Head of the Application and Informatics Division of DISKOMINFO Tasikmalaya, the COBIT 2019 processes used are BAI02, DSS02, and MEA01.

Limited resources, starting from human resources, devices, and also other supporting facilities. For human resources in the Tasikmalaya city government, it is still not enough when compared to other areas, because human resources and the devices are still very limited. Then there are limitations on the budget because related to information technology it requires considerable costs for equipment maintenance and also system development which must be supported by adequate human resource competencies.

By evaluating information technology governance at DISKOMINFO Tasikmalaya City using COBIT 2019, it is hoped that it can help identify weaknesses and improve existing information technology governance.

## II. MATERIALS AND METHOD

Research related to COBIT 4.1 [22] and [28]. To find out what action to do for higher education advances need to evaluate maturity level, one of the frameworks used for evaluation is COBIT 4.1[22]. This evaluation is intended to measure the maturity level on used of two integrated applications using COBIT 4.1 framework [28].

Research related to cobit 5 [6], [9], [12], [23], and [26] the purpose of analyzing and the object is employees, while for research [13] uses COBIT 5 with the aim of analyzing and the object is employees and customers. Discuss the use of COBIT 5 and ISO in corporate governance, the strengths and weaknesses of each standard and the merging of the two standards for more comprehensive governance practices [19]. knowing the comparison between COBIT 5 and COBIT 2019 and know the advantages and disadvantages of each COBIT. of each COBIT [21].

Research related to cobit 2019 [7], [8], [10], [11], [15], [16], [18], [20], [24], [25], and [30] using COBIT 2019 with the aim of analyzing employees as objects.

Research [14] using 2 frameworks namely COBIT 2019 and ITIL 4 with the aim of analyzing employees as objects. analysis of information technology (IT) governance was carried out using the COBIT 2019 framework, by aligning the company's strategies and goals into existing processes in COBIT 2019 which were then mapped into ISO 27001 for information security management. The purpose of this research is to manage information security using the COBIT 2019 framework and the ISO 27001:2013 standar [17].

Proposes the concept of adopting an integration of ISO 38500: 2015, an international standard for information technology governance, and guidelines recommended for the executive committee on an effective and acceptable implementation of information technology within the organization, and COBIT 2019framework via mapping the 6

key principles of information technology governance of ISO 38500: 2015 and the 5 domains and 40 processes of COBIT 2019 core processes through a consideration of the processes relevant and suitable for the organization's context as a case study for the guidelines on information technology governance and a determination on operational guidelines conformity with the organization's objectives to achieve the desired benefits and goals [27].

## III. RESULT AND DISCUSSION

### A. Capability Level Analysis

#### 1. BAI02 (Managed Requirements Definition)

This process has the aim of identifying solutions and analyzing requirements before acquisition or creation to ensure that these requirements are aligned with the company which includes business processes, applications, information or data, infrastructure, and services. This objective is considered to have importance and is also needed by DISKOMINFO Tasikmalaya City, the following is a table identifying the RACI chart BAI02.

TABLE I  
IDENTIFICATION RACI CHART BAI02

Key Governance Practice	Head of Sub Division of Planning, Evaluation, Reporting and Finance	Head of Information Security, Coding and Statistics	Head of Application and Informatics	Head of Public Information and Communication
BAI02.01 Define and maintain business functional and technical requirements	R	R		
BAI02.02 Perform a feasibility study and formulate alternative solutions			R	
BAI02.03 Manage requirements risk		R	R	R
BAI02.04 Obtain approval of requirements and solutions		R		

Based on table 1 for respondents who were selected and had to fill out the BAI02 process questionnaire, there were 4 respondents, consisting of the Head of Planning, Evaluation, Reporting and Finance, Head of Information Security, Coding and Statistics, Head of Applications and Informatics, and Head of Public Information and Communication.

CAPABILITY LEVEL	GMO	ACTIVITY	RESPONDENTS (%)				AVERAGE VALUE OF RESPONDENTS(%)	ACCUMULATED AVERAGE VALUE (%)
			1	2	3	4		
2	BAI02.01	1	85	85			85	92,5
		2	85	85			85	
		3	85	100			92,5	
	BAI02.02	1			100		100	
		2			100		100	
		3			100		100	
3	BAI02.01	1	85	100			92,5	93
		2	85	100			92,5	
		3	85	85			85	
		4	85	85			85	
		5	85	100			92,5	
		6	85	100			92,5	
	BAI02.02	1			100		100	
	BAI02.03	1		100	100	85	95	
		2		100	100	85	95	
	BAI02.04	1		100			100	
4	BAI02.02	1			100	100	93,33333333	
	BAI02.03	1		100	100	85		95
	BAI02.04	1		85				85

Fig. 1 Capability Level BAI02

Based on Figure 1, it can be concluded that at capability level 2 of the BAI02.01 and BAI02.02 processes get a value of 92.5% with a rating of "F" (fully achieved) so that the process can be continued to the next level. At capability level 3 of the BAI02.01, BAI02.02, BAI02.03, and BAI02.04 processes get a value of 93% with a rating of "F" (fully achieved) so that the process can be continued to the next level. At capability level 4 of the BAI02.02, BAI02.03, and BAI02.04 processes get a value of 93.33% with a rating of "F" (fully achieved) and the process is complete. So that the BAI02 domain is at capability level 4, which is obtained from all averages and all domain processes to determine the final capability value.

## 2. DSS02 (Managed Service Requests and Incidents)

This process aims to provide timely and effective response to user requests and resolution of all events to restore services, fulfill user requests, investigate, diagnose, improve, and resolve events. This objective is considered to have importance and is also needed by DISKOMINFO Tasikmalaya City, the following is a table identifying the RACI chart DSS02.

TABLE 2  
IDENTIFICATION RACI CHART DSS02

Key Governance Practice	Head of Sub Division of Planning, Evaluation, Reporting and Finance	Head of Information Security, Coding and Statistics	Head of Application and Informatics	Head of Public Information and Communication	Head of IT Officer
DSS02.01 Define classification schemes for incidents and service requests	R		A	R	R
DSS02.02 Record, classify and prioritize	R		A	R	R

requests and incidents					
DSS02.03 Verify, approve and fulfil service requests		A	R	R	
DSS02.04 Investigate, diagnose and allocate incidents	R	A	R	R	
DSS02.05 Resolve and recover from incidents		R	A	R	R
DSS02.06 Close service requests and incidents		R	A	R	R
DSS02.07 Track status and produce reports	R	A	R	R	

Based on table 1 for respondents who were selected and had to fill out the DSS02 process questionnaire, there were 5 respondents, consisting of the Head of Planning, Evaluation, Reporting and Finance, Head of Information Security, Coding and Statistics, Head of Applications and Informatics, Head of Public Information and Communication, and Head of IT Officer.

CAPABILITY LEVEL	GMO	ACTIVITY	RESPONDENTS (%)					AVERAGE VALUE OF RESPONDENTS(%)	ACCUMULATED AVERAGE VALUE (%)		
			1	2	3	4	5				
2	DSS02.02	1	100		100	85	85	92,5	93,75		
		2	100		100	85	85	92,5			
		3	100		100	85	85	92,5			
	DSS02.03	1			100	85	85	90			
		2			100	85	100	95			
	DSS02.04	1	100		100	85	85	92,5			
		2	100		100	85	85	92,5			
		3	100		100	85	85	92,5			
	DSS02.05	1		100	100	85	100	96,25			
		2		100	100	85	85	92,5			
		3		100	100	85	100	96,25			
		4		100	100	85	85	92,5			
	DSS02.06	1		100	100	85	100	96,25			
		2		100	100	85	100	96,25			
	DSS02.07	1	100		100	85	100	96,25			
	3	DSS02.01	1	100		100	85	85		92,5	92,14285714
			2	100		100	85	85		92,5	
			3	100		100	85	85		92,5	
4			100		100	85	85	92,5			
5			100		100	85	85	92,5			
DSS02.03		1			100	85	85	90			
DSS02.07	1	100		100	85	85	92,5				
4	DSS02.07	1	100		100	85	85	92,5	92,5		
		2	100		100	85	85	92,5			
5	DSS02.07	1	100		100	85	85	92,5	92,5		

Fig. 2 Capability Level DSS02

Based on Figure 2, it can be concluded that at capability level 2 of the DSS02.02, DSS02.03, DSS02.04, DSS02.05, DSS02.06, and DSS02.07 processes get a value of 93.75% with a rating of "F" (fully achieved) so that the process can be continued to the next level. At capability level 3 of the DSS02.01, DSS02.03, and DSS02.07 processes get a value of 92.14% with a rating of "F" (fully achieved) so that the process can be continued to the next level. At capability level 4 of the DSS02.07 process, it gets a value of 92.5% with a rating of "F" (fully achieved) so that the process can be continued to the next level. At capability level 5 of the DSS02.07 process, it gets a value of 92.5% with a rating of "F" (fully achieved) and the process is complete. So that the DSS02 domain is at capability level 2, which is obtained from

all averages and all domain processes to determine the final capability value.

### 3. MEA01 (Managed Performance and Conformance Monitoring)

This process has the purpose of collecting, validating, and evaluating company objectives and metrics and alignment. Monitor that processes and practices are operating in accordance with agreed objectives and metrics of performance and conformance. Provide systematic and timely reporting. This objective is considered to have importance and is also needed by DISKOMINFO Tasikmalaya City, the following is a table identifying the RACI chart MEA01.

TABLE 3  
IDENTIFICATION RACI CHART MEA01

Key Governance Practice	Head of Sub Division of Planning, Evaluation, Reporting and Finance	Head of Information Security, Coding and Statistics	Head of Application and Informatics	Head of Public Information and Communication
MEA01.01 Establish a monitoring approach	R	R		
MEA01.02 Set performance and conformance targets			R	R
MEA01.03 Collect and process performance and conformance data			R	R
MEA01.04 Analyze and report performance			R	R
MEA01.05 Ensure the implementation of corrective actions.			R	R

Based on table 3 for respondents who were selected and had to fill out the MEA01 process questionnaire, there were 4 respondents, consisting of the Head of Planning, Evaluation, Reporting and Finance, Head of Information Security, Coding and Statistics, Head of Applications and Informatics, and Head of Public Information and Communication.

CAPABILITY LEVEL	GMO	ACTIVITY	RESPONDENTS (%)				AVERAGE VALUE OF RESPONDENTS(%)	ACCUMULATED AVERAGE VALUE (%)
			1	2	3	4		
2	MEA01.01	1	100	100			100	93,90625
		2	100	100			100	
		3	100	100			100	
		4	100	85			92,5	
		5	100	100			100	
	MEA01.02	1			100	85	92,5	
		2			100	85	92,5	
		3			100	85	92,5	
		4			100	85	92,5	
	MEA01.03	1			100	85	92,5	
		2			100	85	92,5	
		3			100	85	92,5	
	MEA01.05	1			85	85	85	
		2			100	85	92,5	
		3			100	85	92,5	
4				100	85	92,5		
3	MEA01.01	1	100	85		92,5	95	
		2	100	100		100		
		3	100	100		100		
	MEA01.03	1			100	85		92,5
		1			100	85		92,5
		2			100	85		92,5
4	MEA01.03	1			100	85	92,5	
		1			100	85	92,5	
	MEA01.04	2			100	85	92,5	
		3			100	85	92,5	
5	MEA01.04	4			100	85	92,5	
		1			85	85	85	

Fig. 3 Capability Level MEA01

Based on Figure 3, it can be concluded that at capability level 2 of the MEA01.01, MEA01.02, MEA01.03 and MEA01.05 processes get a value of 93.91% with a rating of "F" (fully achieved) so that the process can be continued to the next level. At capability level 3 of the MEA01.01, MEA01.03, and MEA01.04 processes get a value of 95% with a rating of "F" (fully achieved) so that the process can be continued to the next level. At capability level 4 of the MEA01.03 and MEA01.04 processes get a value of 92.5% with a rating of "F" (fully achieved) so that the process can be continued to the next level. At capability level 5 of the MEA01.04 process gets a value of 85% with a rating of "L" (largely achieved) and the process is complete. So that the MEA01 domain is at capability level 3, which is obtained from all averages and all domain processes to determine the final capability value.

### B. Conclusion of Capability Level Result

Based on the results described in the previous point for measuring capability models, the capability level of each domain is obtained in table 4.

TABLE 4  
CONCLUSION OF CAPABILITY LEVEL RESULT

GMO	COBIT 2019 Process	Capability Level
BAI02	Managed Requirements Definition	4
DSS02	Managed Service Requests and Incidents	2
MEA01	Managed Performance and Conformance Monitoring	3

It is known from table 6 that all domains evaluated are the first there is a Build, Acquire, and Implement (BAI) domain, in the BAI02 (Managed Requirements Definition) process getting a level of capability at level 4. The second domain is

the Deliver, Service, and Support (DSS) domain, in the DSS02 process (Managed Service Requests and Incidents) getting a level of capability at level 2. And the last is the Monitor, Evaluate, and Assess (MEA01) domain, in the MEA01 process (Managed Performance and Conformance Monitoring) getting a level of capability at level 3. The results of the capability level findings were obtained from respondents who filled out questionnaires that had been distributed based on COBIT 2019. Furthermore, an analysis of the findings of the current level of capability (as-is) at the company is carried out.

TABLE 5  
EXPECTED CAPABILITY LEVEL

GMO	To-Be	Description Expected Ability Level
BAI02	4	The activities carried out have achieved their objectives and also well defined their performance which is quantifiable so that it can be measured.
DSS02	5	The activities carried out have achieved their objectives and also improved performance well which can be measured and made improvements continuously.
MEA01	5	The activities carried out have achieved their objectives and also improved performance well which can be measured and made improvements continuously.

In table 5 is the target capability level or the expected level of capability of each objective obtained from the analysis results contained in the conclusion of the capability level results.

TABLE 6  
GAP CAPABILITY LEVEL OBJECTIVE

GMO	Capability Level		
	As-is	To-be	Gap
BAI02	4	4	0
DSS02	2	5	3
MEA01	3	5	2

Based on table 6 is a table of analysis results from the gap or gap level of information technology governance which has the aim of providing convenience for improving information technology governance. This analysis is obtained from the difference between the current capability level (as-is) and the

expected capability level (to-be). So that it is known which process objectives have gaps or gaps and require improvement.

#### IV. CONCLUSION

It was concluded that the capability level in the BAI02 (Managed Requirements Definition) domain received a value of 93.33% at level 4, in the DSS02 (Managed Service Requests and Incidents) domain received a value of 93.75% at level 2, and in the MEA01 (Managed Performance and Conformance Monitoring) domain received a value of 95% at level 3.

There are several suggestions for maximizing agency governance, namely:

4. Suggested improvements for BAI02. Because the BAI02 domain is at level 4 and has already reached the expected capability level (to-be), it is endeavored to regularly implement and obtain the definition of requirements that are managed. regularly implement and obtain requirements definitions that are managed.
5. Suggested improvements for DSS02. In the gap analysis, identify gaps or deficiencies in the current capability level 2 that make it possible to understand the problems that require improvement. Conduct detailed planning that includes the required resources. Provide financial budget approval that includes the cost of information technology in minimizing unexpected incidents. Document the type of incident and its solution as a reference for improvement if something similar or even more complex occurs. Conduct and implement improvements periodically and also monitor results to ensure that changes have the desired results.
6. Suggested improvement for MEA01. Conduct training and skills upgrading. Provide regular training and opportunities to develop the necessary skills. Conduct regular performance measurement and monitoring to identify where further improvements are needed. Conduct regular reviews to ensure that standards remain effective and relevant, and ensure that information security is adequate. Seek team development and collaboration between teams to improve collaboration between team members involved in a project and build a work culture that encourages collaboration, innovation and knowledge exchange.
7. Further research development, which can be added to the domain process or a comparison between other related frameworks and can also be measured using similar frameworks or different frameworks.

#### REFERENCES

- [1] Miranti, A. (2019). No Title No Title. In Journal of Chemical Information and Modeling(Vol. 53, Issue 9). <https://doi.org/10.1017/CBO9781107415324.004>
- [2] Gunawan, B., & Pratama, F. A. (2018). Information Technology Governance Design (Ratih Indah Utami (ed.)). ANDI
- [3] Magdalena, I., Fauzi, H. N. and Putri, R. (2020) "The Importance of Evaluation in Learning and its Manipulating Effects", BINTANG, 2(2), pp. 244-

257. doi: 10.36088/bintang.v2i2.986.
- [4] ISACA. (2019). COBIT 2019 : Framework Introduction and methodology. In United States of America: ISACA. ISACA
- [5] ISACA. (2019). COBIT 2019 : Governance and Management Objectives. In United States of America: ISACA. ISACA.
- [6] Adigunaa, I.M.Y., Sasmita, G.M.A. and Putra, I.M.S., (2021). Capability level measurement using COBIT 5 (Case Study: At Dinas XYZ). *Ojs. Unud. Ac. Id*, 2(1)
- [7] Anastasia, P.N. and Atrinawati, L.H., (2020). Designing information technology governance using the cobit 2019 framework at XYZ hotel. *JSI: Journal of Information Systems (E-Journal)*, 12(2).
- [8] Andini, D.Y.A., Zulkifli, Z. and Zaliman, I., (2023). Analysis of Information Technology Governance in Academic Information Systems (Siakad) Using the 2019 Cobit Framework. *International Journal of Software Engineering and Informatics*, 1(1), pp.49-53
- [9] Anindita, K. W., Suprpto, S. and Mursityo, Y. T. (2019) "Evaluation of Information Technology Governance Using the COBIT 5 Framework Domain Evaluate, Direct and Monitor (Study at the Communication and Information Technology Office of East Java Province)", *Journal of Information Technology and Computer Science Development*, 3(4), pp. 3469-3477. Available at: <https://j-ptiik.ub.ac.id/index.php/j-ptiik/article/view/4951>
- [10] Atrinawati, L.H. dkk. (2021) "Penilaian tingkat kapabilitas proses pada universitas XYZ berdasarkan COBIT 2019," *Jurnal Fisika: Conference Series*, 1803(1), hlm. 012033. Available at: <https://doi.org/10.1088/1742-6596/1803/1/012033>
- [11] Darmawan, D. and Wijaya, A. F. (2022) "Analysis and Design of Information Technology Governance Using the 2019 COBIT Framework at PT. XYZ", *Journal of Computer and Information Systems Ampera*, 3(1), pp. 1-17. doi: 10.51519/journalcisa.v3i1.139
- [12] Lumingkewas, C., Mambu, J.Y. and Wahyudi, A. (2023) "Identification of IT governance capability level of COBIT 2019 at the Kominfo City of Bitung, North Sulawesi," *TeIKa*, 13(01), pp. 1–15. Available at: <https://doi.org/10.36342/teika.v13i01.3064>
- [13] Muttaqin, F. et al. (2020) "Measurement of the IT helpdesk capability level using the COBIT 5 framework," *Journal of Physics: Conference Series*, 1569(2), p. 022039. Available at: <https://doi.org/10.1088/1742-696/1569/2/022039>
- [14] Nachrowi, E., Nurhadryani, Y. and Sukoco, H., (2020). Assessment of Governance and Management of Information Technology Services with COBIT 2019 and ITIL 4.
- [15] Padmi, I.A.A., Githa, D.P. and Susila, A.A.N.H. (2022) Audit of Information Technology Governance of General Hospital X using COBIT 2019 framework, *JITTER: Scientific Journal of Technology and Computers*. Available at: <https://ojs.unud.ac.id/index.php/jitter/article/view/83146>
- [16] Saleh, M., Yusuf, I. and Sujaini, H., (2021). Application of the 2019 COBIT Framework to the Information Technology Audit at Sambas Polytechnic. *JEPIN (Journal of Informatics Education and Research)*, 7(2), pp.204-209
- [17] Nawir, M., AP, I. and Wajidi, F. (2022) Integration of framework ISO 27001 and COBIT 2019 in Smart Tourism Information Security Pt. yoy international management, *J. Available at: https://ejurnal.undana.ac.id/index.php/jicon/article/view/7985.*
- [18] Prabowo, A., Fauzi, R. and Santosa, I. (2022) Analisis Dan Perancangan proses Manajemen Kinerja Ti ... -researchgate. Available at: [https://www.researchgate.net/profile/Iqbal-Santosa/publication/358683768\\_ANALISIS\\_DAN\\_PERANCANGAN\\_PROSES\\_MANAJEMEN\\_KINERJA\\_TI\\_MENGGUNAKAN\\_KERANGKA\\_KERJA\\_COBIT\\_2019\\_DI\\_PT\\_INTI\\_PERSERO/links/620eef184be28e145c9d59bd/ANALISIS-DAN-PERANCANGAN-PROSES-MANAJEMEN-KINERJA-TI-MENGGUNAKAN-KERANGKA-KERJA-COBIT-2019-DI-PT-INTI-PERSERO.pdf?origin=publication\\_detail](https://www.researchgate.net/profile/Iqbal-Santosa/publication/358683768_ANALISIS_DAN_PERANCANGAN_PROSES_MANAJEMEN_KINERJA_TI_MENGGUNAKAN_KERANGKA_KERJA_COBIT_2019_DI_PT_INTI_PERSERO/links/620eef184be28e145c9d59bd/ANALISIS-DAN-PERANCANGAN-PROSES-MANAJEMEN-KINERJA-TI-MENGGUNAKAN-KERANGKA-KERJA-COBIT-2019-DI-PT-INTI-PERSERO.pdf?origin=publication_detail).
- [19] Y Aprilinda et al 2019 *J. Phys.: Conf. Ser.* 1381 012028
- [20] Pangaribuan, B., Fernandez, S. (2023). Tata Kelola Teknologi Informasi Menggunakan COBIT 2019 Pada Val. Available at: <https://doi.org/10.51903/pixel.v16i1.1247>
- [21] Syuhada, A. (2021). Kajian Perbandingan COBIT 5 dengan COBIT 2019 Sebagai Framework Audit Tata Kelola Teknologi Informasi. Available at: <http://dx.doi.org/10.36418/syntax-literate.v6i1.2082>
- [22] T Lestariningsih et al 2019 *J. Phys.: Conf. Ser.* 1381 012024
- [23] Dirgayusari, A.M., Putra, D.M.D.U. and Andini, N.W.R. (2021) Evaluasi Tata Kelola Teknologi Informasi Menggunakan Kerangka Kerja Cobit 5 di Gelato Secrets, View of Evaluasi Tata kelola teknologi informasi menggunakan kerangka Kerja cobit 5 pada gelato secrets. Available at: <https://jurnal.unej.ac.id/index.php/INFORMAL/article/view/23600/9743>.
- [24] Gerl, A. Et al. (2020). Applying COBIT 2019 to IT Governance in Higher Education. *Lecture Notes in Informatics (LNI)*, Gesellschaft für Informatik, Bonn 2021 517
- [25] A. Ishlahuddin, P. W. Handayani, K. Hammi and F. Azzahro, "Analysing IT Governance Maturity Level using COBIT 2019 Framework: A Case Study of Small Size Higher Education Institute (XYZ-edu)," 2020 3rd International Conference on Computer and Informatics Engineering (IC2IE), Yogyakarta, Indonesia, 2020, pp. 236-241, doi: 10.1109/IC2IE50715.2020.9274599.
- [26] N. F. Saragih, C. Sagala, I. S. Dumayanti, I. K. Jaya, E. Rajagukguk and A. Gea, "Evaluation of Employee Attendance System Using COBIT 5 Framework," 2019 International Conference of Computer Science and Information Technology (ICoSNIKOM), Medan, Indonesia, 2019, pp. 1-4, doi:

- 10.1109/ICoSNIKOM48755.2019.9111589.
- [27] B. Visitsilp and N. Bhumpenpein, "Guidelines for Information Technology Governance Based on Integrated ISO 38500 and COBIT 2019," 2021 Research, Invention, and Innovation Congress: Innovation Electricals and Electronics (RI2C), Bangkok, Thailand, 2021, pp. 14-18, doi: 10.1109/RI2C51727.2021.9559772.
- [28] E. Mulyadi, K. Y. E. Aryanto and I. M. Candiasa, "Evaluative Study Of Integration Of Clinic Management Information System With Pcare BPJS of health Using COBIT 4.1 Approach," 2019 International Conference on Computer Science, Information Technology, and Electrical Engineering (ICOMITEE), Jember, Indonesia, 2019, pp. 37-42, doi: 10.1109/ICOMITEE.2019.8920836.
- [29] VN. Legowo and Christian, "Evaluation of Governance Information System Using Framework Cobit 5 in Banking Company," 2019 International Conference on Sustainable Engineering and Creative Computing (ICSECC), Bandung, Indonesia, 2019, pp. 281-286, doi: 10.1109/ICSECC.2019.8907123.
- [30] V. S. Kasma, S. Sutikno and K. Surendro, "Design of e-Government Security Governance System Using COBIT 2019 : (Trial Implementation in Badan XYZ)," 2019 International Conference on ICT for Smart Society (ICISS), Bandung, Indonesia, 2019, pp. 1-6, doi: 10.1109/ICISS48059.2019.8969808.