Evaluation of E-Government Governance with the Implementation of the COBIT 2019 Method at the West Pasaman Civil Registration Office

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Abstract

The rapid development of information technology has encouraged government agencies to adopt Electronic Government (E-Government) to improve the efficiency, transparency, and accountability of public services. However, implementation challenges remain, especially in regional agencies such as the Population and Civil Registration Office (Dukcapil) of West Pasaman Regency, where inconsistencies and lack of system integration are still widespread. This study aims to analyze and evaluate E-Government governance. The method used in this study is the COBIT 2019 framework to assess the level of capability and propose strategic improvements in IT service management. This study adopted a qualitative case study approach, guided by the COBIT 2019 Design and Implementation framework. Data were collected through direct observation and in-depth interviews with Dukcapil personnel, supported by 145 structured questions and documentary analysis. This process focuses on five COBIT processes: EDM04 (Ensure Resource Optimization), APO07 (Manage Human Resources), BAI09 (Manage Assets), DSS01 (Manage Operations), and MEA01 (Monitor, Evaluate, and Assess Performance and Conformance). The results show that the capability level of the DSS01 process is at level 2 (Managed Process), while the capability target is level 3 (Established Process). This gap reflects the need for improvement in operational process management, including strengthening documentation and standardizing practices. Based on these results, strategic recommendations are developed that are contextually oriented to local bureaucratic conditions. This research can be a reference for the implementation of COBIT 2019 to effectively identify governance weaknesses and provide actionable strategies in increasing E-Government maturity at the regional level, supporting better service delivery and organizational performance.

Keywords: COBIT 2019, IT Governance, E-Government, Capability Level, Public Service Management.

1. Introduction

In today's digital era, bureaucratic transformation through the Electronic-Based Government System (SPBE) has become an unavoidable demand [1]. The Indonesian government, through Presidential Regulation No. 132 of 2022, emphasizes the urgency of integrating information technology (IT)-based public services to realize efficient, transparent, and accountable governance [2]. One concrete form of SPBE implementation is the development of e-Government which includes the digitalization of administrative services, including at the district level such as the Population and Civil Registration Service (Dukcapil) [3]. However, various structural and technical constraints, such as lack of system integration and data inconsistencies between departments, remain significant obstacles to ideal quality public services [4].

As the complexity of public service needs increases, good IT governance becomes a strategic foundation to ensure the continuity, consistency and capability of digital processes [5]. The COBIT 2019 Framework developed by ISACA is present as one of the widely recognized global reference models in managing and evaluating IT governance in both the private and public sectors [6]. Several studies have demonstrated the effectiveness of COBIT 2019 in identifying capability gaps, developing improvement recommendations, and enhancing process capabilities [7], [8]. Several other studies also underline the importance of specific domains such as DSS01 and DSS05 in the context of IT operational services [9], [10].

A number of previous studies have examined the application of the COBIT 2019 framework in the context of evaluating information technology governance in various sectors [11] for example, evaluating IT governance in an educational foundation and finding that although domains BAI01 and BAI05

achieved capability level 2, there were still significant gaps in change management and project management [12] in the context of manufacturing companies found that domains EDM05 and APO14 were at the optimal level (level 5), indicating full capability in data management and stakeholder engagement [13].

Meanwhile, [14] highlighted low capabilities in domains APO09 and APO11 in educational institutions, indicating weak service agreements and quality management. A similar finding was also seen in the study [15] which evaluated the MEA and DSS domains in a private company and found that most processes were still at level 1, namely the initial stage that had not been fully managed. In the local government sector, research by [16] at the Gianyar Agriculture Service shows that capabilities in the MEA03 and BAI04 domains are still low, with a gap of up to two levels from the expected target.

Other relevant research was conducted by [17] on the SIPERUMKIM information system in Salatiga City, which shows serious gaps in the APO12 and DSS03 domains, each with gaps of up to three levels. [18] also emphasized the importance of integrating BAI and APO domain capabilities in the context of DevOps-based companies, where innovation capabilities and IT architecture are dominant factors in successful IT management.

However, the majority of these studies place more emphasis on measuring the capabilities of a particular domain without discussing in depth strategies for improvement or alignment with the local bureaucratic context [19]. In addition, there has been no research that specifically focuses on IT operational monitoring (such as in the DSS01 domain) in the district level Civil Registration Service, especially in efforts to support the e-Government-based population administration service system [20]. This is an important justification for the need for further studies that are not only evaluative, but also solution-oriented and contextual.

This research aims to fill this gap by providing significant novelty. First, it focuses on an in-depth analysis of the IT operational monitoring process based on the COBIT 2019 framework within the West Pasaman Civil Registration Agency (Dukcapil). Second, it develops an improvement strategy based on capability measurement results that are not only normative but also tailored to the characteristics of the local bureaucracy. Third, it presents measurable and applicable evaluation results, which can be used as guidelines for continuously improving IT service capabilities.

Based on the previous explanation, this study aims to analyze and evaluate IT governance in the e-Government-based public service sector. The service system was developed using the COBIT 2019

approach, as well as formulating capability-based improvement strategies that align with the specific needs of local government organizations. This study contributes as a benchmark to determine the performance of the West Pasaman Population and Civil Registration Office regarding IT Administration Services based on the COBIT 2019 framework.

2. Method

This research uses a case study approach, focusing on the evaluation and analysis of Information Technology (IT) governance at the Population and Civil Registration Office (Dukcapil) of West Pasaman Regency. This study attempts to apply a method that refers to the COBIT 2019 framework [21], with an emphasis on governance and management processes and identifying capability gaps to formulate recommendations for improving IT governance that align with organizational goals.. The following steps in the research framework are shown in Figure 1.
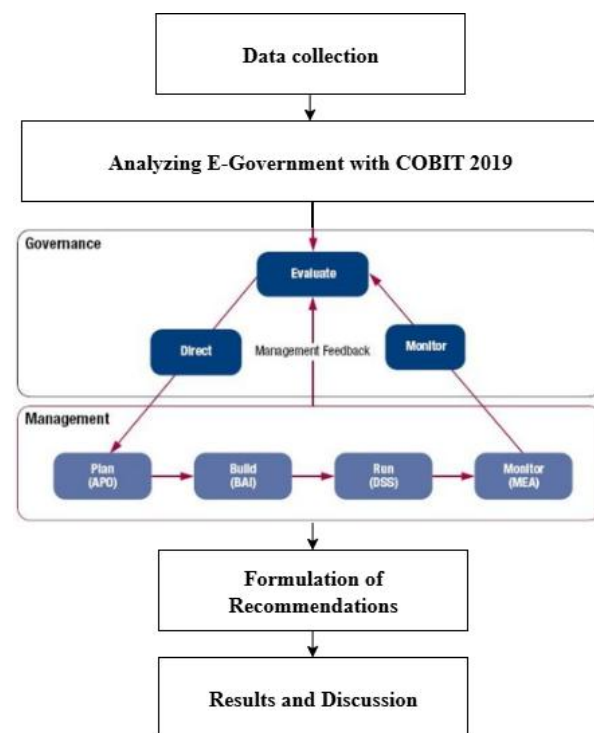

Figure 1. Research Framework

Figure 1, the first stage, explains that data collection was conducted through observation, structured interviews, documentation, and literature review to support the analysis needs and strengthen the research's theoretical foundation. Field observations and documentation were used to examine the activities and outputs of each COBIT domain, while 145-question interviews gathered information from relevant stakeholders. The literature review supplemented the data with relevant scientific references.

The second phase of this research is to analyze e-Government implementation using the COBIT 2019

framework, specifically through the four stages in the Design Guide: Initiate Programme, Define Problems and Opportunities, Define Road Map, and Plan Programme. The analysis focuses on identifying strategic needs, capability gaps, and formulating a targeted, comprehensive IT governance improvement plan that aligns with organizational goals.

The third phase of COBIT 2019 Governance explains that IT governance is governed through three core activities: Evaluate, Direct, and Monitor (EDM), which form a continuous cycle to support strategic decision-making. EDM ensures IT aligns with business objectives by evaluating organizational health, providing strategic direction, and monitoring implementation. This approach creates a feedback loop that drives continuous improvement in IT management capabilities and effectiveness.

The fourth phase of COBIT 2019 Management explains that the IT management process is divided into four main domains, The following is the COBIT framework for IT processes, which is divided into four management domains [22]: APO, BAI, DSS, and MEA, which form an integrated management system to ensure efficient and value-added IT operations. APO handles IT strategy planning and alignment, BAI focuses on building and implementing IT solutions, DSS provides ongoing operational services, and MEA evaluates IT performance and compliance. Together with the EDM governance process, these four domains create an integrated, effective, and sustainable IT governance and management system.

The fifth stage of IT governance recommendations explains that this research is based on a capability gap analysis, taking into account the specific needs of Dukcapil and field conditions. Implementing governance can improve the organization's performance [23]. Based on an assessment of "as-is" and "future" capabilities, recommendations are contextually designed to improve the organization's ability to manage IT sustainably and align with strategic objectives.

The sixth phase of the IT governance evaluation revealed that the West Pasaman Civil Registration Agency (Dukcapil) identified capability gaps in five COBIT 2019 priority processes, with most at a low capability level. Key challenges included limited human resources, suboptimal IT assets, and weak monitoring and digitalization. In response, data-driven recommendations were formulated to strengthen competencies, optimize assets, and improve performance evaluation to support effective IT governance aligned with public service objectives.

This study recommends the use of the Guttman scale [24], an effective cumulative scale for clearly and consistently measuring one-dimensional variables, such as yes/no or agree/disagree responses. This scale is used to calculate the level of organizational capability by summarizing respondents' responses. The following explains the calculation formula for summarizing responses to obtain the level of organizational capability.

Average conversion. The formula is as follows:

$$RK = \Sigma\, nk * 100\% / \Sigma\, Pi \qquad (1)$$

Where R.K is the average conversion of the interviewee's responses, with a value of 1 for existing documents and 0 for non-existent answers. $\Sigma\, nK$ is the total conversion value, with a value of 1 for existing documents and 0 for non-existent documents. nK is the conversion value for each statement. $\Sigma\, Pi$ is the number of questions.

Normalization. The formula is as follows:

$$RN = \Sigma\, RK / \Sigma\, Pc \qquad (2)$$

Where RN is the normalized average. RK is the average number of conversions per question. Pc is the total number of COBIT 2019 processes.

Ability Level. The formula is as follows: (3)

$$CL = (y0*0)+(y1*1)+(y2*2)+(y3*3)+(y4*4)+(y5*5) / Z$$

Where CL is the Capability Level. yn (y0-y5) is the number of processes at level n. Z is the number of processes being assessed.

3. Results and Discussion

These results and discussions provide a strong foundation for the West Pasaman Civil Registration Agency (Dukcapil) to develop a more measurable IT governance improvement strategy. Priorities for improvement should focus on documentation, cross-functional communication, and strengthening asset and human resource management. A more comprehensive implementation of COBIT 2019 principles will not only improve internal efficiency but also strengthen the integrity and accountability of e-government services to the public.

Based on data obtained from observations and in-depth interviews, validation was conducted on a number of COBIT 2019 processes, especially in five priority domains: EDM04 (Ensure Resource Optimization), APO07 (Manage Human Resources), BAI09 (Manage Assets), DSS01 (Manage Operations), and MEA01 (Monitor, Evaluate, and Assess Performance and Conformance). This validation assesses the availability of output documents as evidence of process

implementation and calculates the level of capability achievement. Process Attribute Rating EDM 04 Ensure Resource Optimization. The EDM 04 used can be presented in Table 1.

Tabel 1. Process Attribute Rating EDM 04

No.	Sub Process	Documentary Evidence	Exist	nK	RK
1	EDM 04.01 *Evaluate resource management*	*Guilding principles for allocations of resource and capabilities*	✓	1	
		Guilding principles for enterprise architecture	✓	1	100%
		Approved resources plan	✓	1	
2	EDM 04.02 *Direct resource management*	*Communication of resourcing strategies*	-	0	
		Assigned responsibilities for resource management	✓	1	66.67%
		Principles for safeguarding resource	✓	1	
3	EDM 04.03 *Monitor resource management*	*Feedback on allocation effectiveness of resources and capabilities*	✓	1	
		Remedical actions to address resource management deviations	✓	1	100%
		Normalized mean			88.89%

EDM 04.01 *Evaluate resource management*

Average EDM 04.01

RK $\quad$ = 3/3*100%

$\quad$ = 100%

EDM 04.02 *Direct resource management*

Average EDM 04.02

RK $\quad$ = 2/3*100%

$\quad$ = 66.67%

EDM 04.03 *Monitor resource management*

Average EDM 04.03

RK $\quad$ = 3/3*100%

$\quad$ = 100%

Normalized mean

RN $\quad$ = 100%+66,67%+100% / 3

$\quad$ = 88.89%

Based on the researcher's explanation regarding the documents found in the EDM 04 Ensure Resource Optimization process, it can meet level 1 with a fully achieved status because it has met the minimum limit to proceed to the next level (>85%), which is 88.89%. Next, an assessment will be carried out to level 2 based on Process Attribute 2.1 performance management and Process Attribute 2.2 work product management.

Process Attribute 2.1 *Performance Management*

Performance Management EDM 04

Average PA.2.1

RK $\quad$ = 5/6*100%

$\quad$ = 83.33%

Process Attribute 2.2 Work Product Management

Work Product Management EDM 04

Average PA 2.2

RK $\quad$ = 3/4*100%

$\quad$ = 75%

Average PA 2.1 and PA 2.2

RN $\quad$ = 83,33%+75% / 2

$\quad$ = 79,16%

From the assessment of attributes PA 2.1 Performance Management and PA 2.2 Work Product Management in the EDM 04 ensure resource optimization process, it can be concluded that the process cannot reach level 3 because the average percentage is 79.16%. Because the percentage does not exceed 85%, the capability of this process is only assessed at level 2.

Process Attribute Rating APO 07 *Manage Human Resource*

APO 07.01 *Maintain adequate and appropriate staffing*

Average APO 07.01

RK $\quad$ = 3/3*100%

$\quad$ = 100%

APO 07.02 *Identify key IT personnel*

Average APO 07.02

RK = 1/2*100%

  = 50%

APO 07.03 *Maintain the skills and competencies of personnel*

Average APO 07.03

RK = 2/3*100%

  = 66.67%

APO 07.04 *Evaluate employee job performance*

Average APO 07.04

RK = 3/3*100%

  = 100%

APO 07.05 *Plan and track the usage of IT and business human resource*

Average APO 07.05

RK = 3/3*100%

  = 100%

APO 07.06 *Manage contract staff*

Average APO 07.06

RK = 2/3*100%

  = 66.67%

Normalized mean

RN = 100%+50%+66,67%+100%+100%+66,67% / 6

  = 80,56%

Based on the researcher's assessment of the documents found in the APO 07 Manage Human Resources process, this process was given a level 1 rating. This is because the fulfillment percentage in this process reached 80.56%. This process is categorized as "largely achieved," meaning this process has achieved a fulfillment level of >50%-85%.

Process Attribute Rating BAI 09 *Manage Assets*

BAI 09.01 *Identify and record current assets*

Average APO 07.01

RK = 3/3*100%

  = 100%

BAI 09.02 *Manage critical assets*

Average BAI 09.02

RK = 3/3*100%

  = 100%

BAI 09.03 *Manage the assets life cycle*

Average BAI 09.03

RK = 3/3*100%

  = 100%

BAI 04.09 *Optimisation asset costs*

Average BAI 09.04

RK = 0/2*100%

  = 0%

BAI 09.05 *Manage licences*

Average BAI 09.05

RK = 0/3*100%

  = 0%

Normalized mean

RN = 100%+100%+100%+0%+0% / 5

  = 60%

Based on the researcher's assessment of the documents found in the BAI 09 Manage Assets process, this process was found to have a capability level of 60%, indicating that the process has largely achieved its objectives but still requires improvement to reach a higher level. This process is at the largely achieved level, which is in the range of 50%-85%.

Process Attribute Rating DSS 01 *Manage Operations*

DSS 01.01 *Perform Operational Procedures*

Average DSS 01.01

RK = 3/3*100%

  = 100%

DSS 01.02 *Manage oursorced IT service*

Average DSS 01.02

RK = 0/1*100%

  = 0%

DSS 01.03 *Monitor IT Infrastructure*

Average DSS 01.03

RK = 3/3*100%

  = 100%

DSS 01.04 *Manage the environment*

Average DSS 01.04

RK = 3/3*100%

  = 100%

DSS 01.05 *Manage Facilities*

Average DSS 01.05

RK = 3/3*100%

  = 100%

Normalized mean

RN $= 100\%+0\%+100\%+100\%+100\% / 5$

$= 80\%$

Based on the research conducted, a process called DSS 01 Manage Operations was identified. This process is at level 1 because its percentage is 80%. The achievement level of this process is "largely achieved," meaning it has successfully achieved 50%-85% of its target.

The following is an assessment of the collected documentation. Process Attribute Rating MEA 01 Monitor, Evaluate, and Assess Performance and Conformance. The MEA 01 used is presented in Table 2.

Tabel 2. Process Attribute Rating MEA 01

No.	Sub Process	Documentary Evidence	Exist	nK	RK
1	MEA 01.01 *Establish monitoring approach*	*Monitoring requirements*	✓	1	
		Approach monitoring goals and metrics	✓	1	100%
2	MEA 01.02 *Set performance and conformance targets*	*Monitoring targets*	✓	1	100%
3	MEA 01.03 *Collect and process performance and conformance data*	*Processed monitoring data*	✓	1	100%
4	MEA 01.04 *Analyse and report performance*	*Performance reports*	✓	1	100%
5	MEA 01.05 *Ensure the implemental on of corrective actions*	*Remedical actions and assigments*	✓	1	100%
		Status and results of actions	✓	1	
	Normalized mean				**100%**

MEA 01.01 *Establish monitoring approach*

Average MEA 01.01

RK $= 2/2*100\%$

$= 100\%$

MEA 01.02 *Set performance and conformance targets*

Average MEA 01.02

RK $= 1/1*100\%$

$= 100\%$

MEA 01.03 *Collect and process performance and conformance data*

Average MEA 01.03

RK $= 1/1*100\%$

$= 100\%$

MEA 01.04 *Analyse and report performance*

Average MEA 01.04

RK $= 1/1*100\%$

$= 100\%$

MEA 01.05 *Ensure the implemental on of corrective actions*

Average MEA 01.05

RK $= 2/2*100\%$

$= 100\%$

Normalized mean

RN $= 100\%+100\%+100\%+100\%+100\% / 5$

$= 100\%$

Based on the researcher's presentation of the documents found in the MEA 01 Monitor, Evaluate, and Assess Performance and Conformance process, it can meet level 1 with a fully achieved status because it has exceeded the minimum limit to proceed to the next level (>85%), which is 90%. Next, an assessment will be carried out to the next level or level 2 based on PA 2.1 Performance Management and PA 2.2 Work Product Management.

Process Attribute 2.1 *Performance Management*

Performance Management EDM 04

Average PA 2.1

RK $= 5/6*100\%$

$= 83.33\%$

Process Attribute 2.2 Work Product Management

Work Product Management EDM 04

Average PA 2.2

RK $= 3/4*100\%$

$= 75\%$

Average PA 2.1 dan PA 2.2

RN $\quad= 83.33\%+75\% / 2$

$\quad\quad= 79,16\%$

From the assessment of PA 2.1 Performance and PA 2.2 Work Product Management attributes in the MEA01 Monitor, Evaluate and Assess Performance and Conformance process, it can be concluded that the process did not reach level 3. The average of the two attributes was 79.16%, which did not meet the minimum target of 85% to reach capability level 3.

Reporting the Results explains that the EDM 04 Ensure Resource Optimization and MEA 01 Monitor, Evaluate, and Assess Performance and Conformance processes are at level 2, meaning they have been recorded, measured, and met their objectives. The APO 07 Manage Human Resources, BAI 09 Manage Assets, and DSS 01 Manage Operations processes are at level 1, meaning they have been implemented at Dukcapil. The following summary of the achievement results is shown in Figure 2.
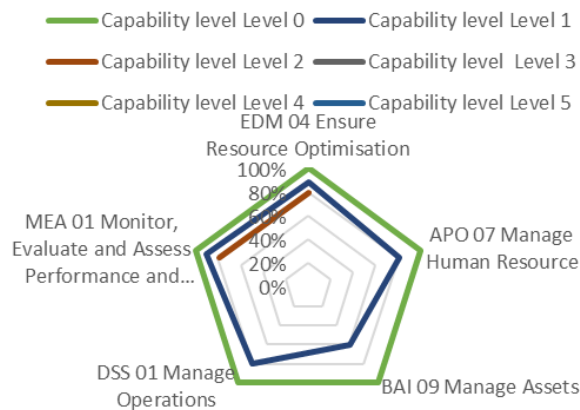

Figure 2. Summary of Achievement Results

The following will explain how to calculate the average of the capability level assessment carried out in the previous stage at Dukcapil. So the average calculation for this assessment is as follows:

CL $\quad= (0*0)+(3*1)+(2*2)+(0*3)+(0*4)+(0*5) / 5$

$\quad\quad= 7/5$

$\quad\quad= 1,4$

So the average capability level assessment that was carried out in the previous stage was obtained, namely at level 1 and had a difference of 2 to reach the target level, namely level 3 which had been determined by researchers at Dukcapil.

4. Conclusion

Based on the results of the IT governance evaluation using the COBIT 2019 framework at the West Pasaman Civil Registration Office, an overview of the capability levels of five priority processes was obtained, namely EDM04, APO07, BAI09, DSS01, and MEA01. The assessment using the capability level (CL) indicates that the average achievement is at level 1 (Performed), with the percentage of fulfillment varying between 60% and 100%. These results indicate that most processes have been implemented and documented, but have not yet reached the level of integration and consistency required for the target level, namely level 3 (Established Process).

Specifically, the EDM04 and MEA01 processes achieved fully achieved status at level 1 with a percentage above 85%, but did not meet the requirements for level 3 because the performance attribute (PA 2.1) and work product management (PA 2.2) values were below the 85% threshold. The APO07, BAI09, and DSS01 processes were in the largely achieved category with achievements of 60–80%, indicating the need for improvements in HR management, IT assets, and operational services.

These findings confirm the effectiveness of COBIT 2019 as an objective and measurable evaluation tool, capable of identifying specific performance gaps and providing a basis for developing improvement strategies. Key recommendations include developing and refining standard operating procedures (SOPs), strengthening cross-unit communication, enhancing human resource competencies, optimizing asset management, and developing an IT development roadmap aligned with public service objectives. By implementing the principles of continuous improvement and regular monitoring, it is hoped that the IT governance capability level at the West Pasaman Civil Registration Office (Dukcapil) can measurably improve towards the set targets.

Referensi

[1] R. R. E. Voll and M. A. Azam, "Peran Strategis Dinas Komunikasi dan Informatika Kabupaten Semarang dalam Penerapan Sistem Pemerintahan Berbasis Elektronik," *J. Ilm. Wahana Pendidik.*, vol. 10, no. 13, pp. 676–681, 2024.

[2] Y. A. Putra and S. Kawuryan, "PENGUATAN DOMAIN TATA KELOLA SISTEM PEMERINTAHAN BERBASIS ELEKTRONIK UNTUK MENINGKATKAN INDEKS SPBE KOTA PANGKALPINANG." IPDN, 2025.

[3] R. R. Badii and N. Nurdin, "Implementasi kebijakan e-government dalam pelayanan publik di Dinas Kependuduk dan Pencatatan Sipil Kabupaten Dogiyai Provinsi Papua Tengah." INSTITUT PEMERINTAH DALAM NEGERI, 2025.

[4] A. Kahfi, Z. Naufal, and A. W. Johannes, "EFEKTIVITAS SISTEM INFORMASI PEMERINTAHAN DAERAH DALAM MENINGKATKAN PENGELOLAAN KEUANGAN DAERAH DI PROVINSI LAMPUNG." INSTITUT PEMERINTAHAN DALAM NEGERI, 2025.

[5] T. A. Gading, "Pengembangan Enterprise Architecture untuk meningkatkan Tata Kelola IT menggunakan Framework Idea: Studi Kasus Puskesmas Sleman." Universitas Islam Indonesia, 2025.

[6] S. D. Putra, H. Herman, and A. Yudhana, "Audit Tata Kelola Academic Information System Menggunakan Framework Cobit 2019," *J. Teknol. Inf. dan Ilmu Komput.*, vol. 10, no. 3, pp. 467–474, 2023.

[7] Anadya Tafdhilla, J. Hasna Iftinan, Azzahra Rahmadani, and Anita Wulansari, "Penilaian Penggunaan Framework COBIT 2019 dalam Pengelolaan Teknologi Informasi Pada Institusi Perguruan Tinggi," *Bull. Comput. Sci. Res.*, vol. 4, no. 1, pp. 91–100, 2023.

[8] S. Suroto and J. Friadi, "Evaluasi Tingkat Capability Keamanan Sistem Informasi PT. CPPI Menggunakan Framework COBIT 2019," *J. Ilmu Siber dan Teknol. Digit.*, vol. 2, no. 1, pp. 45–60, 2024.

[9] W. Mangoki, D. Manongga, and A. Iriani, "IT Governance Design in XY University using Cobit 2019 Framework," *J. Sist. Inf. Bisnis*, vol. 14, no. 2, pp. 111–122, 2024.

[10] J. Timur and B. Framework, "Hal. 110," vol. 1, no. 2, pp. 110–127, 2024.

[11] F. J. Sopacua and E. Haryani, "Penerapan Framework COBIT 2019 pada Evaluasi Tata Kelola Teknologi Informasi di Yayasan Pendidikan," *J. Edukasi dan Penelit. Inform.*, vol. 10, no. 2, p. 323, 2024.

[12] M. D. Widjaja and J. F. Andry, "Analisis Multi Computer System Menggunakan Framework COBIT 2019 pada Perusahaan Perkakas," *J. Sist. Inf. Bisnis*, vol. 13, no. 2, pp. 120–126, 2023.

[13] E. A. Sulistiawan, "Design Factors CV Divi Trans Menggunakan Control Objectives for Information and Related Technologies (COBIT) 2019." 2024.

[14] I. N. R. W. Kesuma, I. Hermadi, and Y. Nurhadryani, "Evaluasi Tata Kelola Teknologi Informasi di Dinas Pertanian Gianyar Menggunakan COBIT 2019," *J. Teknol. Inf. dan Ilmu Komput.*, vol. 10, no. 3, pp. 513–522, 2023.

[15] E. Hariyanti, N. Nuzulita, M. E. Ranandha, and I. T. Indari, "Performance Analysis of Information Technology Services in Higher Education using COBIT 2019," vol. 01, pp. 45–51, 2025.

[16] J. Tonapa and E. Suryani, "Design of Information Technology Governance in the Information Technology Division of Pt Pln Using the Framework Cobit 2019," *JIKO (Jurnal Inform. dan Komputer)*, vol. 6, no. 2, pp. 97–105, 2023.

[17] R. S. Nugroho and P. F. Tanaem, "Perancangan Tata Kelola Teknologi Informasi Pada Angkasa Vapor Menggunakan Framework Cobit 2019," *Sebatik*, vol. 27, no. 1, pp. 344–354, 2023.

[18] M. Lestari, A. Iriani, and H. Hendry, "Information Technology Governance Design in DevOps-Based E-Marketplace Companies Using COBIT 2019 Framework," *INTENSIF J. Ilm. Penelit. dan Penerapan Teknol. Sist. Inf.*, vol. 6, no. 2, pp. 233–252, 2022.

[19] Y. Ansanai and A. Rasyid, "Tantangan dan Strategi Reformasi Birokrasi di Negara Berkembang," *J. Public Policy*, vol. 1, no. 1, pp. 60–73, 2025.

[20] Y. Sakira, T. Tamrin, and L. P. Sari, "Analisis Keberhasilan Penerapan Sistem Pelayanan Administrasi Kependudukan Berbasis E-Government Pada Aplikasi Dukcapil Ceria Mobile," *J. Suara Polit.*, vol. 4, no. 1, 2025.

[21] Mardison, A. Ramadhanu, L. N. Rani, and S. Enggari, "Hybrid DSS for recommendations of halal culinary tourism west Sumatra," *IAES Int. J. Artif. Intell.*, vol. 10, no. 2, pp. 273–283, 2021.

[22] D. C. Wijaya, E. Erdisna, and S. D. Rizki, "Penerapan Audit Sistem Informasi E-Raport pada SMAN 8 Padang menggunakan Metode Framework Cobit 4.1," *J. KomtekInfo*, vol. 9, pp. 18–28, 2022.

[23] F. Rizaldi, A. P. Gusman, and U. M. Wahyuni, "Pengukuran Kualitas BMKGsoft Menggunakan Framework COBIT 5 Studi Kasus : Stasiun Meteorologi Maritim Teluk Bayur," *J. KomtekInfo*, vol. 7, no. 1, pp. 67–74, 2020.

[24] J. Na'am, J. Harlan, R. Syelly, and A. Ramadhanu, "Filter technique of medical image on multiple morphological gradient (MMG) method," *Telkomnika (Telecommunication Comput. Electron. Control.*, vol. 17, no. 3, pp. 1317–1323, 2019.

Author Biography

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Edo Septiawan, S.Kom., born in Simpang Tiga on September 13, 1998, is a young academic, guitarist, and badminton enthusiast who adheres to Islam. He earned his Bachelor of Computer Science (S.Kom) from Universitas Putra Indonesia "YPTK" Padang, Indonesia in 2022, with a focus on Information Systems. Currently, he is continuing his Masters in Informatics Engineering (M.Kom) studies at the same university, starting in 2024. He is known as a diligent person, always thirsty for knowledge, and committed to making the best contribution in the field of information technology. His enthusiasm for learning is strengthened by the life principle: "Nothing is impossible if you believe," as well as the inspirational quote: "The more you contain, the more you bow." which he interprets as an invitation to always be humble, continue learning, and respect others, as his knowledge and experience increase.

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	Dr. Ir. Sumijan, M.Sc [ID] [G] [SC] [P] Dr. Ir. Sumijan, M.Sc., born in Nganjuk on May 7, 1966, is an academic, researcher, and educator who is active in the development of science, especially in the field of Information Technology. He serves as a Lecturer at Universitas Putra Indonesia "YPTK" Padang, with NIDN 0005076607 and can be contacted via email soe@upiyptk.org or HP/WhatsApp number 08126607355. Having a strong academic track record, he earned a Bachelor's degree in Informatics Management from Universitas Putra Indonesia YPTK, a Master's degree in Information Systems from University Technology Malaysia, and a Doctoral degree in Information Technology from Gunadarma University. As a productive researcher, Dr. Sumijan has Scopus ID 57194787076, ORCID ID 0000-0002-9932-4325, and has produced various reputable international publications. His expertise includes digital image processing, information technology auditing, computer vision, data mining, and information systems engineering. He has mentored thousands of students to graduation (7,558 undergraduate students and 445 postgraduate students) and is active in research, community service, and scientific seminars at both national and international levels. Known as a figure who consistently pursues knowledge and makes real contributions to the advancement of education, Dr. Sumijan adheres to the principle that mastery of knowledge requires hard work, dedication, and a willingness to always develop.