Capability Level Assessment of IT Governance in the SIAP KOJA Application Using the COBIT 2019 Framework

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Article Info	ABSTRACT
	This study assesses the IT governance capability of the SIAP KOJA application at the Jambi City Department of Communication and Informatics (Diskominfo). SIAP KOJA was introduced to strengthen attendance discipline, transparency, and accountability through geofencing and biometric features. Using the COBIT 2019 framework, the assessment aligns IT processes with institutional objectives and focuses on two key processes: APO11 (Manage Quality) and BAI05 (Manage Organizational Change Enablement). Data were collected through a literature review, interviews, observations, and a structured questionnaire based on the COBIT 2019 Process Assessment Model. The sample comprised five personnel from Diskominfo's Informatics Applications Division, purposively selected for their direct involvement in planning, development, and operations. Results indicate Level 3 (Defined) capability for both APO11 and BAI05 with standards documented. At Level 4, APO11 reached 75.56% (Largely Achieved) and BAI05 reached 76.00% (Largely Achieved). Because these fall below the ≥85% "Fully Achieved" threshold, progression was halted, and the capability level remains Level 3. Limitations in structured measurement and continuous monitoring contribute to a two-level gap from the Level 5 (Optimizing) target. The study recommends formalizing a quality management system with service-level agreements and performance indicators; strengthening outcome-based change management through compliance audits and systematic user feedback; and institutionalizing lessons learned. These improvements are essential for enhancing governance capability, ensuring system reliability, and supporting successful digital transformation in local government.

I. INTRODUCTION

The acceleration of digital transformation and bureaucratic reform, which proceed in tandem, constitute a prerequisite for realizing good governance in Indonesia [1], [2]. This bureaucratic reform emphasizes strengthening the discipline of civil servants as a pillar of effective and accountable government [3], [4]. Attendance discipline functions both as a performance indicator and as the basis for administrative decision-making in calculating and granting performance allowances [5]. This commitment is reinforced by Government Regulation No. 94 of 2021 on Civil Servant Discipline, which stipulates the obligation to strictly and consistently comply with working hours [6]

In line with this, the government has promoted the adoption of the Electronic-Based Government System (SPBE) through Presidential Regulation No. 95 of 2018, later strengthened by Presidential Regulation No. 82 of 2023 on the Acceleration of Digital Transformation and Integration of National Digital Services. Implementing SPBE has become imperative to align public services with national standards and respond to citizen demands for transparent, swift, and accountable service delivery [7], [8], [9].

As a follow-up to these policy directions, the Jambi City Government launched SIAP KOJA (Attendance Information System for Jambi City Government Employees) managed by

the Diskominfo (The Department of Communication and Informatics), in response to the COVID-19 pandemic, when work-from-home (WFH) arrangements rendered manual attendance infeasible. Accountability was strengthened through geofencing with office-radius settings determined by each organizational unit administrator and biometric face recognition to minimize fraudulent practices such as proxy attendance and ensure accurate attendance records [10], [11], [12].

At the outset of implementation, initial resistance to digital adoption was observed among employees. Diskominfo responded with intensive outreach and training during 2019–2020, which reduced resistance. At present, the majority of employees are able to use the application effectively, although technology-based system changes often pose adoption challenges [13], [14], [15]. Experiences from other regions indicate that digitizing attendance can improve discipline and transparency, yet success is highly contingent on system reliability and organizational change readiness. A study of the Jaktem application shows that service management can reach a mature level ($\geq$ level 4) when standard processes run consistently, whereas other evaluations find average capability only at level 2, necessitating strengthened procedures and monitoring [16], [17]. This gap suggests that SIAP KOJA may face similar issues. Moreover, because SIAP KOJA is mandatory for all Jambi City Government employees, totaling 7,187 as of December 2024, system reliability and governance must be prioritized due to their direct impact on employee entitlements [18]. Thus far, evaluations have relied on annual SPBE assessments that are macro-level in scope, leaving no process-level capability map at the service/application tier. This hampers the identification of service quality and change management, particularly given that SIAP KOJA underpins civil servants' performance assessments and allowances.

To address these needs, COBIT 2019 offers a governance and IT management framework based on the goal cascade and a Process Assessment Model enabling capability measurement per process and the prioritization of improvements [19]. The framework ensures that IT utilization aligns with strategic objectives, supports value realization, and manages risk and regulatory compliance [20], [21]. Various public sector studies using COBIT 2019 report a range of capability levels from incomplete to largely achieved, shaped by quality management and change-management practices. An evaluation of the Gianyar Department of Agriculture prioritized MEA03, BAI04, and EDM03, with a one-level capability gap [22]. At the Cabinet Secretariat, 13 of 15 processes were at level 0 with a target of level 3 [23]. An audit of the SRIKANDI System in Tuah Madani Subdistrict found three domains had reached level 3, although documentation, consistency, and continuous monitoring still require reinforcement [24]

Based on the above exposition, although SIAP KOJA contributes to civil servant discipline and advances digital transformation, fundamental weaknesses remain in governance and evaluation. The absence of instruments grounded in internationally recognized frameworks limits capability measurement and continuous improvement. Therefore, this study aims to: (1) assess the capability level of SIAP KOJA processes using COBIT 2019, (2) identify the gaps between the current capability level and the expected target, and (3) formulate priorities for improving IT governance and management. Practically, this study provides a capability map of SIAP KOJA processes and measurable recommendations for the Jambi City Government to enhance service reliability, ensure accountability in performance and allowance calculations, and support the acceleration of bureaucratic reform and the Electronic-Based Government System.
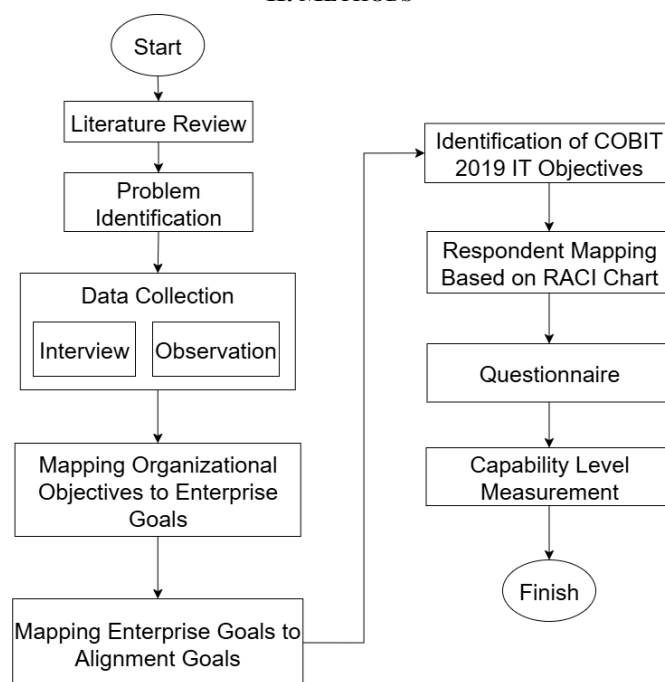
II. METHODS

Figure 1. Research Methodology

A. Literature Review

This study employs the COBIT 2019 framework as the primary reference for evaluating IT governance. The literature review informed the development of the assessment instrument, facilitated the identification of SIAP KOJA's governance capability level, and supported the formulation of targeted recommendations aligned with the operational context of the Jambi City Department of Communication and Informatics (Diskominfo).

COBIT 2019 represents the culmination of over two decades of research and development in IT governance. Beyond consolidating contemporary scholarly insights, it translates them into actionable guidance applicable across diverse organizational contexts. While initially developed for IT auditing, COBIT has evolved into a comprehensive framework for governing and managing information and

communication technology (ICT) and is now widely recognized as a global reference standard [25]

B. Interviews and Observations

To further contextualize the assessment, the researchers conducted informal interviews and direct observations involving Diskominfo's IT management team. These qualitative methods provided insights into operational routines and usage patterns of the SIAP KOJA application, thereby informing the capability evaluation conducted under the COBIT 2019 framework.

C. Mapping the Vision, Mission, and Objectives to Enterprise Goals

Building on the qualitative findings, the subsequent step involved aligning Diskominfo's strategic directives namely its vision, mission, and institutional objectives with the Enterprise Goals (EGs) outlined in COBIT 2019. This alignment established a reference point for determining the IT governance priorities that support the organization's broader strategic objectives.

D. Mapping Enterprise Goals to Alignment Goals

This step extended the previous mapping by linking each identified Enterprise Goal to its corresponding Alignment Goal (AG), as prescribed by the COBIT Goal Cascade. These mappings clarified how high-level business goals are operationalized as IT-specific targets. Each AG was categorized as either Primary (P), indicating a direct and critical linkage, or Secondary (S), reflecting an indirect relationship.

E. Identification of COBIT 2019 Management Objectives

Following the EG–AG mapping, the researchers aligned these findings with COBIT 2019's 40 Management Objectives to identify the relevant domains and processes for assessment. These objectives were then grouped into primary and secondary categories based on organizational relevance. Only those classified as primary were selected for capability evaluation. These selected objectives formed the basis for measuring the maturity level of IT governance practices in the SIAP KOJA system.

F. RACI Chart Analysis

To ensure role clarity in the assessment process, the researchers employed the Responsible, Accountable, Consulted, and Informed (RACI) model. This chart defines stakeholder roles for each selected COBIT 2019 process [26]. The RACI responsibilities were mapped against the existing human-resource structure of the SIAP KOJA management environment. This mapping ensured that each questionnaire item would be answered by personnel with the appropriate roles, thereby enhancing the validity and reliability of the capability measurement.

TABLE I
RACI CHART FOR APO11

Key Management Practice	Responsible Roles	Accountable Roles
APO11.01	Chief Information Officer, Chief Digital Officer, Head IT Administration, Service Manager	Chief Operating Officer
APO11.02	Chief Technology Officer, Chief Digital Officer, Business Process Owners, Service Manager	Chief Information Officer
APO11.03	Chief Technology Officer, Chief Digital Officer, Business Process Owners, Portfolio Manager, Program Manager, Project Manager, Project Management Office, Data Management Function, Head Architect, Head Development, Head IT Operations, Head IT Administration, Service Manager, Information Security Manager, Business Continuity Manager	Chief Information Officer
APO11.04	Chief Risk Officer, Chief Digital Officer, I&T Governance Board, Business Process Owners, Service Manager	Chief Information Officer
APO11.05	Business Process Owners, Portfolio Manager, Program Manager, Project Manager, Project Management Office, Head Architect, Head Development, Head IT Operations, Head IT Administration, Service Manager, Information Security Manager, Business Continuity Manager	Chief Information Officer

TABLE II
RACI CHART FOR BAI05

Key Management Practice	Responsible Roles	Accountable Roles
BAI05.01	Chief Digital Officer, Business Process Owners, Chief Technology Officer, I&T Governance Board, Project Manager, Executive Committee, Head Human Resources, Program Manager, Chief Operating Officer, Chief Information Officer.	Chief Executive Officer
BAI05.02	Project Manager, Head Development, Chief Information Officer, Chief Technology Officer, Project Management Office, Program Manager, Chief Digital Officer.	Executive Committee
BAI05.03	Program Manager, Chief Technology Officer, Chief Information Officer, Project Manager, I&T Governance Board, Chief Digital Officer.	Executive Committee
BAI05.04	Project Manager, Program Manager, Chief Digital Officer, Chief Technology Officer, Chief Information Officer.	Executive Committee
BAI05.05	Business Process Owners, Chief Digital Officer, Chief Information Officer, Service Manager, Chief Operating Officer, Head Development, Information Security Manager, Chief Technology Officer, Business Continuity Manager, Head IT Operations, Project Management Office.	Executive Committee
BAI05.06	Business Process Owners, Chief Digital Officer, Chief Information Officer, Service Manager, Chief Operating Officer, Head Development, Information Security Manager, Chief Technology Officer, Business Continuity Manager, Head IT Operations, Project Management Office.	
BAI05.07	Business Process Owners, Head IT Operations, Information Security Manager, Chief Digital Officer, Chief Operating Officer, Service Manager, Project Management Office, Chief Information Officer, Chief Technology Officer, Project Manager, Program Manager, Business Continuity Manager, Head Development.	Executive Committee

G. Questionnaire

The assessment instrument, in the form of a structured questionnaire, was designed based on the COBIT 2019 Management Objectives and informed by the role mapping from the RACI analysis. Each item corresponded to specific process components categorized under Capability Levels 2 through 5. The questionnaire was distributed in sequential stages, subsequent levels were administered only when the achievement rate for the preceding level reached 85%–100%, in line with COBIT's Process Assessment Model.
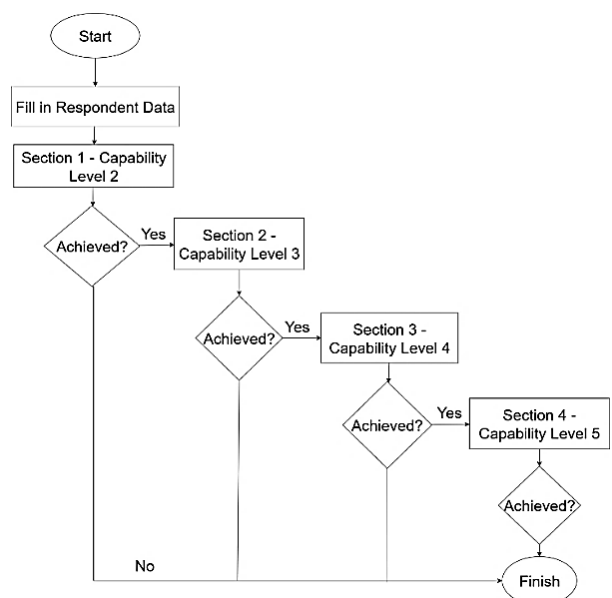

Figure 2. Questionnaire Dissemination Flow

H. Maturity Level Measurement

The questionnaire results were used to determine the governance maturity of each process. Each capability level represents a progressive stage of process achievement. The capability score was calculated using the following formula:

$$Capability\ Level = \frac{\Sigma\ Activities\ Completed}{Total\ Activities}\ x\ 100\%$$

In COBIT 2019, maturity levels for focus areas are categorized into six stages, ranging from Level 0 to Level 5 each reflecting the extent of process standardization and effectiveness within an organization. At Level 0 (Incomplete), processes may be absent or inconsistently applied, implying that work related to governance and management objectives may be carried out irregularly or not at all. Level 1 (Initial) denotes that although tasks are performed, they do not fully achieve the scope and intent of the focus area in a consistent or repeatable manner [26].

At Level 2 (Managed), planning and performance monitoring mechanisms are introduced, but process execution remains non-standardized across the organization. Level 3 (Defined) represents the establishment of organization-wide standards and documented procedures, enabling structured and consistent execution of processes. Advancing to Level 4 (Quantitatively Managed), governance practices become data-driven, with quantitative metrics used to assess performance and guide systematic improvements. Finally, Level 5 (Optimizing) reflects the highest maturity, where organizations institutionalize a culture of continuous improvement, routinely refining governance and management practices to ensure sustained excellence [26].

This maturity model illustrates a structured progression from ad hoc, fragmented practices to fully optimized and continuously improving governance systems. As such, it provides a practical framework for organizations including Diskominfo Jambi City to assess their current capability levels, identify performance gaps, and prioritize targeted improvements in the governance of the SIAP KOJA application.

I. Improvement Recommendations

Based on the capability evaluation results for information security and broader IT governance, the researchers formulated strategic improvement recommendations. These recommendations were guided by the identified capability levels and the gaps observed in each relevant COBIT 2019 Management Objective. The final recommendations aimed to help SIAP KOJA's management team enhance governance maturity in targeted domains.

III. RESULTS AND DISCUSSION

A. Results of Mapping Organizational Goals to Enterprise Goals

Mapping the organization's goals to COBIT 2019 Enterprise Goals (EG) aims to determine the scope of business objectives that align with IT objectives (Alignment Goals/AG). Based on interviews with the Jambi City Diskominfo, the organizational objectives aligned with the COBIT 2019 Enterprise Goals are presented in Table 3.

TABLE III
ORGANIZATIONAL GOALS MAPPED TO COBIT 2019 ENTERPRISE GOALS (EG)

Organizational Target	BSC Dimension	Enterprise Goals (EG)
Delivering high-quality communication and informatics services	Customer	EG06 (Business service continuity and availability)
		EG07 (Quality of management information)
Improving the quality of sectoral statistical data	Customer	EG07 (Quality of management information)
Enhancing cryptography services and information security	Customer	EG06 (Business service continuity and availability)
	Internal Business Processes	EG11 (Compliance with internal policies)
Increasing implementation of reporting systems for performance, finance, and human resources	Internal Business Processes	EG08 (Optimization of internal business process functionality)
		EG10 (Skills, motivation, and staff productivity)
	Growth	EG12 (Managed digital transformation programs)

After mapping Diskominfo's objectives to Enterprise Goals, six COBIT 2019 Enterprise Goals were identified. These six EGs were then remapped to Alignment Goals.

B. Results of Mapping Enterprise Goals to Alignment Goals

Alignment Goals are derived to ensure consistent linkage between the previously identified business objectives and IT-specific objectives. Following the Goal Cascade process, eight priority Alignment Goals were obtained as summarized in Table 4.

TABLE IV
ENTERPRISE GOALS MAPPED TO ALIGNMENT GOALS

Alignment Goals	Enterprise Goals					
	EG06	EG07	EG08	EG10	EG11	EG12
AG03			S			P
AG04		P				
AG07	P					
AG08		S		S	P	
AG09		S			P	
AG10		P				
AG11					P	
AG12				P		

C. Results of Identifying COBIT 2019 IT Process Objectives

IT process identification was conducted by adapting the selected Alignment Goals to COBIT 2019 IT Management Objectives, to determine the domains and processes actually present or implemented in the organization that would be the focus of the capability assessment.

From the COBIT 2019 Objective–Alignment mapping, 17 recommended objectives were obtained and aligned with the organization's issues. Two domains with three primary processes were selected as focal points, namely APO11 and BAI05, as summarized in Table 5.

TABLE V
ALIGNMENT GOALS MAPPED TO COBIT 2019 IT OBJECTIVES)

COBIT 2019 IT Objective	Alignment Goals							
	AG03	AG04	AG07	AG08	AG09	AG10	AG11	AG12
EDM01	P			S			S	
EDM04	S			S	P			S
EDM05		S				P	S	
APO01	P		S	S	S	S	P	
APO02	S				P			S
APO03	S		S	P				
APO05	P				S	S		
APO06	S	P			P	S		
APO07	S					S		P
APO08	S				S	S		P
APO11	S	S	P			P	P	
BAI01	P				S	P		
BAI02	S				S	P		S
BAI03	S				S	P		
BAI05	P				P	P		S
BAI08	S				S	S		P
DSS06			S	P			S	

The selection of the two processes in this study was based on the Critical Process Identification method, using goal-cascade mapping within the COBIT 2019 framework. This stage began by mapping the organization's Enterprise Goals to Alignment Goals and, subsequently, to IT-related Objectives to identify IT processes that most significantly contribute to the achievement of the organization's strategic objectives.

Given resource and time constraints, the study focused on processes that exhibited the highest number of primary linkages between Alignment Goals and IT-related Objectives. This analytical approach ensured that the selected processes represented the most critical components influencing the organization's IT-governance performance. The results of the analysis revealed two dominant and contextually relevant processes APO11 (Manage Quality) and BAI05 (Manage Organizational Change Enablement). The APO11 process is closely associated with ensuring the quality and reliability of IT services, which is essential for the operational effectiveness of the SIAP KOJA system. Meanwhile, the BAI05 process pertains to managing organizational change, a critical aspect that supports the successful adoption of digital systems by government personnel. Therefore, these two processes were selected as the primary focus of the capability assessment because they best represent the key governance areas necessary to enhance IT-governance maturity and optimize the SIAP KOJA application.

D. Questionnaire Development

The total number of questions/activities evaluated for each selected COBIT 2019 process are shown in Table 6:

TABLE VI
NUMBER OF ACTIVITIES BY CAPABILITY LEVEL AND PROCESS

COBIT 2019 IT Process	Level 2	Level 3	Level 4	Level 5
APO11	2	13	9	2
BAI05	9	14	5	1

The questionnaire distribution process was carried out in stages, whereby the subsequent questionnaire level was administered only after the response rate for each target reached the threshold of 85% to 100% (Fully Achieved). If the specified level had not been fully attained, the process was not advanced to the next stage.

The number of questionnaire responses obtained from the dissemination of questionnaires for the APO11 and BAI05 processes corresponded precisely to the number of questionnaires distributed to the designated respondents. The collected questionnaire results were then analyzed to provide an overview of the maturity level of each target that had been established.

The respondents involved in this study consisted of five personnel from the APTIKA Division (Informatics Applications) of the Department of Communication and Informatics (Diskominfo) of Jambi City. This division is directly responsible for planning, developing, and managing the SIAP KOJA application. The respondents held official positions as First Expert Computer Analysts and Information Systems Analysts. They were purposively selected based on their direct involvement in the design, development, and operational management of the system. In the evaluation

process, the distribution of roles among respondents followed the RACI framework as outlined in COBIT 2019. All respondents were assigned the Responsible role. Their assessments reflected their active participation and firsthand experience in the system's operational and governance activities.

E. Capability Level Measurement Results

The assessment of process capability was conducted using a structured questionnaire developed in accordance with the COBIT 2019 framework, specifically addressing the APO11 (Manage Quality) and BAI05 (Manage Organizational Change Enablement) domains. Each questionnaire item corresponded to a capability level and used binary response options: "Yes, fulfilled" or "No, not fulfilled" to indicate whether the relevant process activities had been implemented within the organization.

Each respondent evaluated the extent to which the process activities had been implemented within their area of responsibility. The capability score for each level was calculated as the proportion of fulfilled activities relative to the total number of activities. The scores from all respondents were then averaged to obtain the consolidated capability score for each level.

$$Capability\ Level = \frac{\Sigma\ Activities\ Completed}{Total\ Activities}\ x\ 100\%$$

Progression to the next evaluation level was permitted only when the current level reached a completion rate classified as Fully Achieved (85%–100%). This threshold indicates that the process is consistently implemented and monitored across relevant organizational units. If the threshold was not met, the assessment did not proceed to the next level. This approach ensured methodological rigor and compliance with COBIT 2019 assessment standards [27]. After the scoring process, the aggregated results were analyzed to determine the current (as-is) capability of each measurable process objective. This analysis helped identify gaps between current practice and the target (to-be) capability level, which served as the basis for improvement planning and alignment with governance objectives.

The criteria used to interpret capability level achievement are summarized in Table 7, as follows.

TABLE VII
CAPABILITY LEVEL OF BAI05

Average Capability Score	Description
0-15%	Not achieved (N)
15-50%	Partially achieved (P)
50-85%	Largely achieved (L)
85-100%	Fully achieved (F)

To ensure the validity and reliability of the data, inter-rater reliability testing was conducted by comparing individual assessments across respondents for each activity. Any

differences in perception were addressed through clarification and consensus discussions. This process produced an agreed-upon final score that accurately reflected the actual condition of IT process implementation. This approach also ensured that the assessment outcomes were methodologically sound and replicable for future research.

The capability achievement for the APO11 process is presented in Table 8 below:

TABLE VIII
CAPABILITY LEVEL OF APO11

	APO11 process			
	Level 2	Level 3	Level 4	Level 5
R1	100	100	100	0
R2	100	100	77.77	0
R3	100	100	88.8	0
R4	100	53.84	11.11	0
R5	100	100	100	0
Capability	**100**	**90.77**	**75.56**	**0**
Maturity	**F**	**F**	**L**	

Based on the APO11 assessment table, the capability level is determined at Level 3 (Defined). This decision is supported by the results at Level 2 (100%, Fully Achieved) and Level 3 (90.77%, Fully Achieved), which indicate that process standards are documented and consistently serve as organizational guidance. Meanwhile, Level 4 (75.56%, Largely Achieved) falls short of the ≥85% threshold required to be considered fully achieved; therefore, advancement to Level 5 is not possible. In accordance with COBIT 2019 guidelines, the capability level is defined by the highest level fully achieved, thereby confirming APO11 at Level 3 (Defined).

The capability achievement for the BAI05 process is presented in Table 9 below:

TABLE IX
CAPABILITY LEVEL OF BAI05

	BAI05 Process			
	Level 2	Level 3	Level 4	Level 5
R1	100	85.71	60	0
R2	77.77	85.71	80	0
R3	77.77	85.71	80	0
R4	77.77	71.42	60	0
R5	100	100	100	0
Capability	**86.67**	**85.71**	**76.00**	**0**
Maturity	**F**	**F**	**L**	

Based on the BAI05 assessment table, the capability level is also set at Level 3 (Defined). The results demonstrate that Level 2 (86.67%, Fully Achieved) and Level 3 (85.71%, Fully Achieved) satisfy the requirement for complete attainment, confirming that the organization has implemented

documented and standardized processes as operational guidance. Nevertheless, Level 4 (76.00%, Largely Achieved) does not reach the ≥85% threshold and thus cannot be deemed fully achieved, while Level 5 remains uninitiated. Accordingly, the capability of BAI05 is formally determined at Level 3 (Defined).

After conducting an evaluation of the capability levels for each selected process, the results of the maturity assessment are presented in the following Table 10 below.

TABLE X
MATURITY LEVEL OF APO11 AND BAI05

COBIT 2019 IT Objective	Capability Level	Maturity Level
APO11 (Manage Quality)	3	*Defined*
BAI05 (Manage Organizational Change Enablement)	3	*Defined*
Average Maturity Level		*Defined*

Based on the table above, the measurement results indicate that both APO11 and BAI05 are positioned at Level 3 (Defined). Consequently, the overall maturity level is also established at Level 3 (Defined). This demonstrates that the organization has well-documented standards that function as guidelines across the institution, although consistent implementation and continuous control mechanisms must be strengthened to progress toward higher maturity levels.

Following the maturity assessment, a gap analysis was conducted to determine the difference between the current state (as-is) and the targeted state (to-be). Interviews with the Diskominfo Jambi City officials confirmed that the expected maturity level is Level 5. The gap analysis between the current and expected maturity levels is presented in the following Table 11 below.

TABLE X
GAP ANALYSIS

IT Objective	As-is	To-be	Gap
APO11	3	5	5-3 = 2
BAI05	3	5	5-3 = 2

The results of the gap analysis reveal that both APO11 and BAI05 have not yet achieved the targeted maturity level. For APO11, the current position at Level 3 (Defined) falls short of the target Level 5, resulting in a two-level gap. Similarly, BAI05 is currently at Level 3 (Defined) with the same two-level gap toward Level 5. These findings indicate that both processes require systematic improvement efforts focused on strengthening consistency in implementation, sustaining continuous control mechanisms, and enhancing governance practices to attain the expected maturity level.

A graphical representation of the gap between the current (as-is) and the desired (to-be) maturity levels is presented in Figure 3 below.
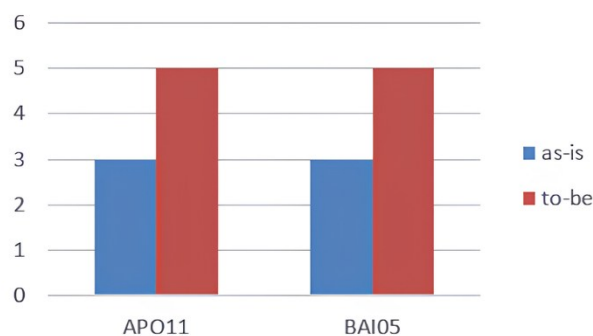

Figure 3. Gap Analysis

Aligned with national policy, the maturity gaps observed in APO11 and BAI05 should be situated within the framework of the Electronic-Based Government System (SPBE). Presidential Regulation No. 95 of 2018 and Presidential Regulation No. 82 of 2023 mandate central and local governments to standardize digital public services and accelerate service integration, which, at the local level, is operationalized through SPBE evaluations that emphasize service quality measurement, operational reliability, and governance accountability. Within this framework, the finding that APO11 and BAI05 are at Level 3 (Defined) while the agreed target is Level 5 (Optimizing) indicates a two-level gap that requires enhanced, metric-based control mechanisms, ongoing monitoring, and a documented continuous-improvement cycle.

Advancing APO11 to Level 4 necessitates formalizing an operational quality management system through the specification of service quality indicators and performance targets, the documentation of acceptance criteria that are integrated into SIAP KOJA service-level agreements, and routine monitoring of relevant metrics, such as defect rates, availability, and response or resolution times, with periodic managerial and process-owner reviews followed by corrective action. Advancing to Level 5 requires a systematic improvement cycle grounded in root cause analysis, traceable preventive and corrective actions, cross-unit learning from quality audits, and external benchmarking to ensure that service standards adapt to evolving user needs.

In parallel, advancing BAI05 to Level 4 calls for comprehensive change management through a formal change plan with success indicators that capture business outcomes and user perceptions, regular assessments of employees' comprehension of and alignment with SIAP KOJA's vision and objectives, compliance audits to identify adoption barriers, and a structured user feedback mechanism. The shift to Level 5 presupposes mature organizational learning through the institutional documentation and dissemination of change experiences across units, thereby strengthening the organization's capacity for subsequent digital

transformations. Collectively, these improvements align with SPBE indicators in the governance and digital public service domains and underpin process reliability that directly affects the fulfillment of employee rights and performance within the Jambi City Government.

The linkage between this study's findings and national benchmarks is reinforced by empirical evidence from Indonesia's public sector. An assessment of IT governance capability at the Cabinet Secretariat using the COBIT 2019 framework showed that several processes remained below the expected maturity threshold (below Level 3) and recommended strengthening measurable controls and designing improvement initiatives directly linked to Electronic-Based Government System (SPBE) performance targets. These recommendations align with the Jambi City Department of Communication and Informatics (Diskominfo) need to transition from Level 3 (Defined) to Level 4 through the institutionalization of performance indicators, service-level agreements, compliance audits, and a continuous-improvement cycle[28]. Furthermore, a systematic literature review of cross-sector COBIT 2019 implementations identifies recurring challenges framework complexity, resource constraints, and terminology comprehension alongside substantive benefits in strategic alignment, risk management, and operational efficiency. These findings affirm that capability improvement requires institutionalized metrics, strengthened managerial roles, and well-documented improvement practices, consistent with the recommended improvement pathway for APO11 and BAI05 in the SIAP KOJA context[29]. Consistently, a study in Tangerang Regency applying COBIT 2019 to optimize SPBE quality underscores the importance of strong governance, consistent measurement of digital services, and continuous performance monitoring to achieve the target state. Accordingly, Diskominfo Jambi City's Level 3 position can be regarded as a strategic baseline ready to be elevated through evidence-based controls and more systematic cross-unit monitoring toward higher capability levels[30].

IV. CONCLUSION

The findings reveal that the capability level of SIAP KOJA's IT governance processes at the Jambi City Diskominfo, as assessed using the COBIT 2019 framework, are positioned at Level 3 (Defined) for both APO11 (Manage Quality) and BAI05 (Manage Organizational Change Enablement). The overall maturity level is therefore also at Level 3, indicating that standards and procedures are documented and applied across the organization. However, structured management practices and systematic performance measurement remain inconsistently applied, leaving a two-level gap to reach the targeted Level 5.

Future studies are recommended to expand the evaluation domain, particularly focusing on security and service continuity as SIAP KOJA's key features, GPS and biometric verification, are directly linked to data security, system reliability, and service continuity. Thus, future capability assessments should should not be limited to APO11 and BAI05 but should also incorporate broader domains and potentially adopt alternative frameworks beyond COBIT 2019 to provide a more comprehensive evaluation.

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