Analysis of Information Technology Governance in Supporting the Effectiveness of BPHTB Services Using COBIT 2019

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Abstract
The digitalization of Land and Building Rights Acquisition Duty (BPHTB) services requires reliable information technology (IT) governance to support efficient, accessible, accurate, and accountable local tax administration. This paper develops a case-study-based evaluation framework for analyzing IT governance in BPHTB services using COBIT 2019. The proposed descriptive-analytical approach combines interviews, observation, document review, service performance records, and evidence-based process capability assessment. COBIT 2019 design factors and the goals cascade are used to identify relevant governance and management objectives; preliminary candidates include APO09, DSS01, DSS02, DSS04, DSS06, and MEA01. Effectiveness is operationalized through processing timeliness, incident resolution, service availability, transaction accuracy, and monitoring of performance targets. The analytical procedure compares current and target capability levels and translates identified gaps into prioritized improvements. As BPHTB-specific field assessment data were not supplied, this paper does not report measured capability levels or claim verified service improvement. Its contribution is an integrated analytical instrument connecting COBIT 2019 process assessment with service-effectiveness indicators to guide subsequent empirical evaluation and actionable improvement planning.
***Keywords**:* IT Governance; COBIT 2019; BPHTB; Service Effectiveness; Capability Assessment; Public Service**.**

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Introduction

The use of information technology in local tax administration is closely linked to the need for public services that are fast, traceable, accurate, and accountable. The Tax on the Acquisition of Land and Building Rights (BPHTB) is one type of local tax regulated under Law No. 1 of 2022 on Financial Relations between the Central Government and Local Governments [1]. In practice, technology can support document submission, completeness checks, application processing, transaction recording, and the provision of service status information. However, the existence of an application does not automatically guarantee service effectiveness if responsibilities, operational controls, incident handling, and performance measurement are not managed consistently. [1][2][11]

In this study, the effectiveness of BPHTB services is understood as the degree to which service objectives are achieved, specifically in terms of processing timeliness, system availability, data/transaction accuracy, complaint resolution, and the traceability of application status. These dimensions constitute the proposed operational indicators for evaluation; their specific values and actual issues must be confirmed using data from the agencies at the study sites. The effectiveness perspective is necessary so that governance audits do not stop at assessing process documentation but demonstrate their relevance to service outcomes. [2][9][15]

COBIT 2019 was developed as an organization-level framework for information and technology governance and management. This framework provides governance and management objectives, design factors, and an approach for assessing process capabilities. Its five main domains are EDM, APO, BAI, DSS, and MEA [2][3]. The use of goal cascades and design factors allows the scope of the assessment to be determined based on the organization's needs, rather than simply selecting domains arbitrarily. [4][3][5]

This article employs a descriptive-analytical case study approach, analyzing design factors, capability levels, and gaps to establish governance priorities [5]. This article adapts that methodological framework to the context of BPHTB and adds an explicit link between the COBIT 2019 processes and measures of service effectiveness. The adaptation does not include transferring the measurement results from the example article, as the units of analysis are different. [6][8][13]

The research questions are: (1) Which COBIT 2019 objectives are most relevant to the IT governance of BPHTB services? (2) What is the level of capability of the implemented processes based on field evidence? and (3) What improvement priorities can support the effectiveness of BPHTB services? The purpose of this research is to develop an IT governance analysis that can produce a map of the current state, gaps relative to targets, and recommendations for improvement linked to service indicators. Its contribution lies in an evaluation framework specific to the BPHTB service workflow that can be tested in local government agencies. [4][14]

Literature Review

A number of other studies have also applied COBIT 2019 to public sector services, academic systems, and healthcare systems. The variation in subjects, evaluation objectives, and domains used reinforces the case for conducting context-based, objective selection rather than adopting assessment results from different organizations. [13] [19]

The study by Lubis et al. on ITIL V3-based library service governance and the study by Hasanuddin and Siahaan on evaluating governance readiness using ISO/IEC 38500 reinforce the argument that process evaluations need to be integrated with service performance indicators. Thus, the specific contribution of the BPHTB study lies in the objective mapping of COBIT 2019 to the speed, accuracy, continuity, and traceability of local tax services. [9][10]

Previous research conducted at Panca Budi University provides an appropriate benchmark. Hardinata et al. examined university IT governance audits using COBIT 5; Siahaan

et al. reviewed the management of digital clippings in the government sector using COBIT 2019; and Nainggolan et al. evaluated the governance of the SIMPEG application in government agencies. All three studies highlight the importance of assessing process controls and the alignment of governance with service objectives, without assuming that these findings automatically apply to BPHTB. [6][8]

COBIT 2019 establishes governance and management objectives as well as a contextual design approach. In BPHTB services, process capability assessments must be linked to timeliness, service availability, incident resolution, data integrity, and compliance with applicable service requirements. These relationships are analytical in nature and require validation using service records and evidence from stakeholders. [1][5]

Research Methodology

This research was designed as an evaluative case study using a descriptive-analytical approach supported by both quantitative and qualitative data. The unit of analysis is the governance and management of information technology that supports the BPHTB service system at [name of agency and research location]. Quantitative data consists of evidence of process activity achievement and service performance indicators, while qualitative data consists of stakeholder explanations regarding operational practices, constraints, policies, and service risks. This study examines the current state (as-is), establishes the target state (to-be) through agreement with process owners, and then analyzes the gap between the two. [3][5][16]

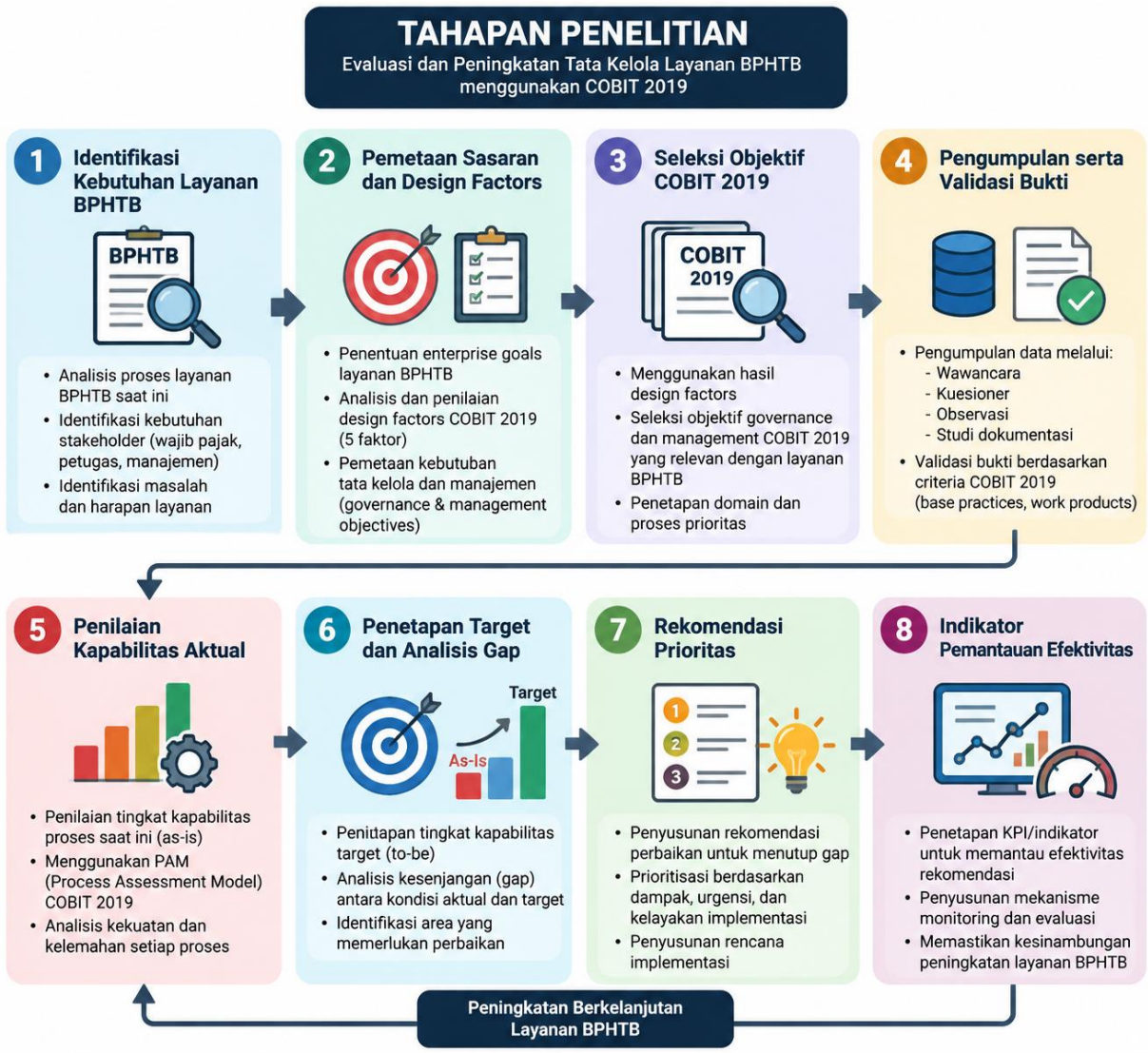


Figure 1. Research Stages and Expected Outputs

Data Collection Techniques and Respondents

Data collection was conducted through (a) semi-structured interviews with the BPHTB service manager, information system administrator, verification officers, service operators, and/or complaint managers; (b) observation of service stages; (c) a review of SOPs, access policies, incident reports, ticket logs, maintenance records, service time reports, and evaluation documents; and (d) an assessment of COBIT 2019 activities based on available evidence. Informants were selected purposively based on their responsibilities and mastery of the processes, rather than solely on their length of service. The number of informants, the data collection period, and the identities of the agencies need to be specified after the observations. [15][17]

Results

The following results present a conceptual mapping and an assessment instrument, not empirical capability scores. The BPHTB institution, assessment respondents, operational records, and actual capability levels have not yet been supplied. [3][5] The mapping table shows the lines of reasoning to be tested, not empirical conclusions. For example, non-compliance with DSS02 activities may be linked to delays in handling incidents, but this relationship must be tested using ticket records and interviews. Similarly, the implementation of MEA01 can help ensure that service time indicators are monitored and followed up on; however, improvements in effectiveness cannot be claimed without performance data from before and after the improvements. [4][9]

Table 1. Governance Areas and Service Effectiveness Indicators

Area evaluasi	Risiko/ketidakefektifan yang diuji	Objektif COBIT	Indikator keterkaitan
Kepastian standar layanan	Target waktu tidak ditetapkan atau tidak dievaluasi	APO09, MEA01	Persentase layanan tepat waktu
Operasional aplikasi	Pelaksanaan operasi tidak konsisten	DSS01	Uptime dan log kegagalan
Layanan dukungan	Keluhan atau gangguan lambat ditangani	DSS02	Persentase insiden sesuai SLA
Keberlangsungan sistem	Gangguan menyebabkan penghentian proses	DSS04	Durasi downtime dan keberhasilan pemulihan
Kontrol proses transaksi	Kesalahan atau proses tak terlacak	DSS06	Akurasi transaksi dan kelengkapan audit trail

The following tables and figures demonstrate how a completed BPHTB field assessment may be reported. These values were created solely for manuscript layout and analysis practice; they do not represent observations, interviews, respondents, official BPHTB service statistics, or verified COBIT 2019 ratings. Replace all simulated values with evidence-based results before submission. [3][5]

For illustration, six candidate objectives were compared against a common target of level 3. The current levels below are hypothetical integer classifications, not computed averages from questionnaires. A real assessment must evaluate applicable process activities and supporting evidence using COBIT 2019 performance criteria. [3][4]

Table 2. Simulated Capability Levels of Selected COBIT 2019 Objectives

Objective	Service governance focus	Current*	Target*	Gap*
APO09	Service agreements	2	3	1
DSS01	IT operations	2	3	1

DSS02	Requests and incidents	1	3	2
DSS04	Service continuity	1	3	2
DSS06	Business process controls	2	3	1
MEA01	Performance monitoring	1	3	2

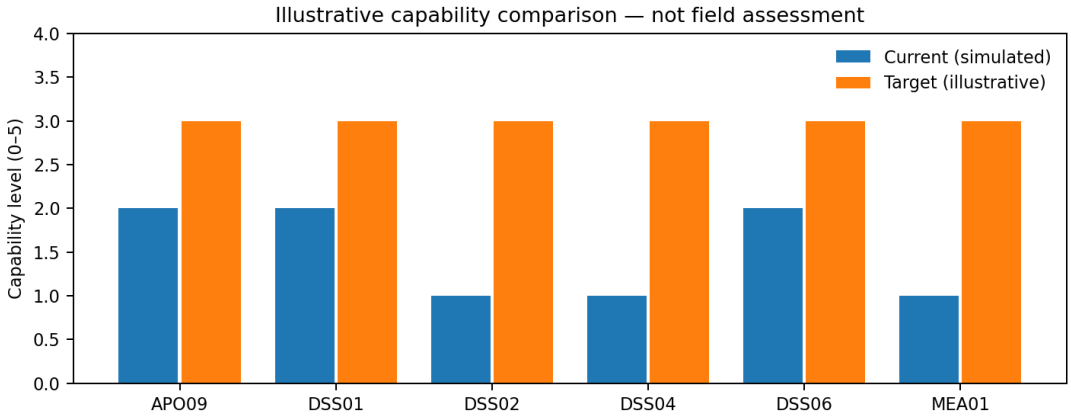


Figure 2. Simulated current and target capability levels

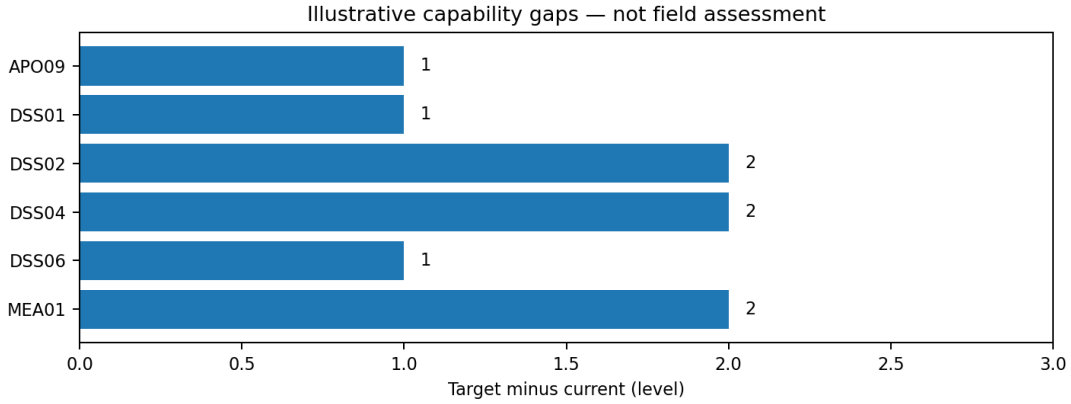


Figure 3. Simulated capability gap by COBIT 2019 objective

In this hypothetical scenario, DSS02, DSS04, and MEA01 each have a two-level gap, while APO09, DSS01, and DSS06 each have a one-level gap. This numerical ranking demonstrates an analytic procedure rather than an empirical finding. High gaps alone do not establish priority: service disruption risk, statutory requirements, availability of evidence, and organizational design factors must also be considered. [4][5][21]

Table 3. Example Interpretation and Improvement Actions

Objective	Hypothetical concern	Proposed verification / action
APO09	Service targets not formally tracked	Verify documented service commitments and establish measurable response targets
DSS01	Operational activities not consistently recorded	Audit operational logs, SOPs, and role assignment
DSS02	Service complaints handled reactively	Review ticket records, escalation path, resolution time
DSS04	Continuity response not tested	Review backups, recovery tests, and service restoration plans
DSS06	Validation controls may be inconsistent	Test authorization, reconciliation, and audit trail

MEA01	Performance reports not routine	Define dashboards for processing time, errors, and complaint resolution

Table 3 contains proposed checks and recommendations, not confirmed weaknesses. Effectiveness must subsequently be evaluated using actual indicators such as turnaround time, service success rate, incident resolution time, transaction accuracy, and user complaints. Without observed before/after indicators, improvements in BPHTB effectiveness cannot be claimed. [1][4]

Gap Analysis and Improvement Priorities

Priorities for improvement are determined based on a combination of three factors: capability gaps, relevance to service indicators, and the magnitude of operational risks or consequences. The matrix below provides conditional recommendations that will be adjusted based on field findings. [5][13][21]

Table 4. Conditional Governance Improvement Recommendations

Jika temuan membuktikan	Arah rekomendasi	Ukuran keberhasilan
Tidak ada SLA dan pengukuran waktu yang konsisten	Tetapkan standar layanan, pemilik proses, dan pelaporan KPI (APO09/MEA01)	Capaian SLA dipantau per periode
Keluhan/gangguan belum dicatat terpusat	Bangun registrasi tiket, klasifikasi, eskalasi dan penutupan insiden (DSS02)	Waktu penyelesaian dan backlog terukur
Operasi sistem bergantung pada praktik informal	Dokumentasikan SOP operasi, pemantauan, dan evaluasi rutin (DSS01)	Kepatuhan pelaksanaan SOP dapat diaudit
Mekanisme pemulihan tidak pernah diuji	Siapkan dan uji backup, pemulihan, serta komunikasi gangguan (DSS04)	Hasil uji pemulihan terdokumentasi
Jejak validasi/otorisasi tidak memadai	Perkuat validasi, pembatasan hak akses dan audit trail (DSS06)	Kesalahan transaksi dan pengecualian terkendali

Discussion

The adaptation of the COBIT 2019 framework to BPHTB services underscores the need to bridge the gap between the evaluation of internal processes and public service outcomes. A process may have better administrative governance without automatically shortening the time required to process an application. Therefore, the evaluation should produce two traceable outputs: an objective COBIT capability profile and a BPHTB service KPI profile. These two outputs are then compared to assess the consistency of arguments regarding the contribution of IT governance to service effectiveness. [11][12][20]

The research in the example document prioritizes security, risk, sustainability, and service support based on the organization's metrics [5]. In the context of BPHTB, service sustainability and incident handling remain relevant, but their priority cannot be assumed to be identical. Determining the sequence of actions must consider the agency's needs, evidence of actual incidents, service provisions, and the level of resource capacity. This approach is consistent with the COBIT 2019 principle of adaptation to the organizational context [3][10]

The current limitations of this manuscript include the unavailability of a study site, informants, documentary data, assessment results, and historical BPHTB KPI data. Therefore, the verifiable contribution at this stage is the design of the methodology and analysis matrix, rather than findings regarding capability levels or evidence of the causal effects of governance improvements on service performance. Once the data becomes available, the discussion must examine alternative explanations—such as administrative policies, personnel capacity, and application volume—to avoid attributing all service changes solely to IT. [14][17] All values

in Table 2 and Figures 2–3 are simulated and should not be used as field results or the basis for empirical conclusions.

Conclusion

This article formulates a framework for analyzing information technology governance in support of the effectiveness of BPHTB services using COBIT 2019. The evaluation was structured by linking service requirements, mapping governance and management objectives, evidence of process activity achievement, and operational indicators such as timeliness, system availability, incident resolution, transaction accuracy, and application traceability. APO09, DSS01, DSS02, DSS04, DSS06, and MEA01 are proposed as initial candidates for validation through the goals cascade and design factors. [3][5] [15]

Methodologically, the study aims to determine actual and target capability levels, conduct a gap analysis, and develop a measurable improvement plan explicitly linked to BPHTB service objectives. Since no specific BPHTB assessment data is currently available, these findings do not establish capability values nor claim that specific improvements have enhanced service quality. Subsequent empirical research should refine the assessment tools, validate priorities in collaboration with stakeholders, and monitor changes in indicators before and after the implementation of recommendations. [4][21]

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