



Management Functions for Effective Civil Service Competency Data Governance in Cilegon City Government

Shabrina Alfiah Nabila^{1*}, Muhammad Iqbal Ismail²

^{1,2} Management Study Program, Faculty of Economics and Business, Universitas Pamulang, South Tangerang, Indonesia.

*Email: dosen03423@unpam.ac.id

Received: —

Accepted: —

ABSTRACT

Local governments increasingly depend on reliable competency data to support workforce planning, job mapping, and human resource decisions. This study examines how management functions contribute to the effectiveness of Civil Service Competency Standards (Standar Kompetensi Jabatan/SKJ) data governance in the Organization Division of the Cilegon City Regional Secretariat, Indonesia. A descriptive qualitative single-case design was used during a one-month field placement from 22 June to 22 July 2026. Evidence was obtained through direct participation, structured observation, review of administrative and technical documents, and supporting literature and regulations. The analysis focused on approximately 1,085 civil-service position records and mapped observed practices to planning, organizing, implementation, and control functions. The findings show that the SKJ process already contains the core logic of management functions, but its effectiveness is constrained by the volume of records, inconsistent document formats, and limited change tracking in predominantly manual verification workflows. The study proposes a staged improvement model consisting of standardized master templates, a data dictionary, two-stage verification, change logs, a shared database with role-based workflow statuses, and ultimately an integrated web-based e-SKJ system. The findings underline that digitalization should follow process standardization and data governance rather than replace them.

Keywords: public administration; digital transformation; human resources; standardization; traceability.

1. INTRODUCTION

Public organizations increasingly rely on structured workforce data to make decisions about job design, staffing, competency development, and institutional capacity. In local government, the quality of such data has operational consequences because inaccurate or inconsistent records can propagate into job mapping, workforce planning, and administrative decisions. Management therefore matters not only at the policy level but also in the design and control of routine data processes. Robbins and Coulter (2021) and Daft (2022) describe planning, organizing, leading or implementation, and controlling as core managerial functions through which organizational resources are directed toward intended outcomes.

From an operations-management perspective, effectiveness concerns whether a process produces outputs that meet organizational objectives, while efficiency concerns the resources and time used to produce them. Process standardization, quality control, clear workflow design, and continuous improvement are central to reducing variation and maintaining reliable outputs (Heizer et al., 2020; Slack et al., 2022). These principles are particularly relevant to administrative data because the output is

not a physical product but information whose value depends on accuracy, completeness, consistency, and traceability.

In Indonesia, public-sector workforce management is closely linked to the professionalization of the state civil apparatus. Law No. 20 of 2023 on the State Civil Apparatus emphasizes professional, accountable, effective, and efficient human resource management, while Ministerial Regulation No. 38 of 2017 establishes Civil Service Competency Standards (Standar Kompetensi Jabatan/SKJ) as a reference for defining competency requirements for government positions (Republic of Indonesia, 2023; Ministry of Administrative and Bureaucratic Reform, 2017). Competency information is therefore more than an administrative inventory; it is an input for aligning people, positions, and organizational needs (Dessler, 2020).

The challenge is that competency information must be managed across documents, organizational units, and changing job structures. Government data governance consequently requires standard definitions, controlled formats, accountable stewardship, and mechanisms for tracking change. Indonesia's One Data policy explicitly promotes data standards, metadata, interoperability, and reference codes (Republic of Indonesia, 2019b). International studies similarly show that data maturity in

public agencies depends on systematic practices and clear stewardship, not simply on acquiring new technology (Thomas et al., 2019; Shah et al., 2021; van Donge et al., 2022).

Digital transformation adds another layer to this issue. Public-sector digitalization is not merely the conversion of paper-based work into electronic files; it involves changes in processes, roles, capabilities, governance, and organizational culture (Mergel et al., 2019; Vial, 2019; Verhoef et al., 2021). Research on local governments further demonstrates that automation changes work configurations and that successful transformation requires managerial capability, user acceptance, and organizational adaptation (Pittaway & Montazemi, 2020; Andersson et al., 2022; Wilson & Mergel, 2022). These insights suggest that an electronic SKJ system would be valuable only if its underlying data and workflow are first standardized.

This study was conducted in the Organization Division of the Cilegon City Regional Secretariat during a field placement from 22 June to 22 July 2026. The work involved inventorying, reviewing, verifying, and entering approximately 1,085 civil-service position records. Field observations revealed three recurring operational constraints: a large volume of records, inconsistent formats across source documents, and limited tracking of revisions in manual verification processes. These conditions create a useful case for examining the relationship between management functions, data governance, and digital transformation in a local-government setting.

Existing studies have discussed digital government, public-sector data maturity, data stewardship, employee competencies, and organizational change. However, relatively little attention has been given to how classical management functions operate at the micro-process level of competency-data administration in Indonesian local government. The present study addresses this practical gap by asking how management functions are manifested in SKJ data governance, what operational constraints reduce effectiveness, and what staged improvements can strengthen accuracy, traceability, and process efficiency. Its contribution lies in translating broad digital-government principles into an operational improvement model for a specific public human-resource data process.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. Management Functions and Operational Effectiveness

Management provides the coordinating logic through which organizational objectives are translated into activities. Planning defines objectives, priorities, standards, and expected outputs; organizing allocates tasks and responsibilities; implementation or leading mobilizes people and resources; and controlling compares actual work with standards and initiates corrective action (Robbins & Coulter, 2021; Daft, 2022). In information-intensive administrative work, these functions can be observed in target setting, workload allocation, execution of verification steps, approval procedures, and quality checks.

Operations-management literature complements this managerial view by emphasizing process design and quality. Standardized work reduces unnecessary variation, while clearly sequenced activities make bottlenecks and rework more visible (Heizer et al., 2020; Slack et al., 2022). For administrative

datasets, operational effectiveness can therefore be interpreted through the reliability of outputs, the clarity of workflow status, the reduction of repetitive correction, and the ability to trace how a record has changed.

Public organizations face additional constraints because administrative work must remain accountable and compliant with formal mandates. Widiyanto et al. (2021) show that dynamic managerial capabilities and organizational capacity for change are associated with performance in public-service organizations. This is relevant to data-governance improvement because managerial capability is required to align new procedures, staff responsibilities, and digital tools rather than treating technological adoption as an isolated technical project.

2.2. Competency Standards in Public Human Resource Management

Competency standards describe the knowledge, skills, behaviors, and other attributes expected for successful job performance. In human resource management, competency information supports recruitment, placement, development, performance management, and succession decisions because it connects job requirements with individual capability (Dessler, 2020). In public administration, the reliability of competency records is especially important where job structures are regulated and workforce decisions need to be documented.

Indonesia's SKJ framework is regulated through Ministerial Regulation No. 38 of 2017, which provides the formal basis for competency standards in government positions (Ministry of Administrative and Bureaucratic Reform, 2017). Monang et al. (2022) demonstrate that superior performance across government management levels is associated with differentiated managerial, task-management, unit-management, socio-cultural, and functional competencies. This reinforces the idea that competency data should be treated as structured organizational information rather than as a static document archive.

Because competency standards may be revised when job structures, nomenclature, or organizational arrangements change, effective administration requires version control and clear source references. Without such controls, an apparently complete dataset may still contain outdated, duplicated, or inconsistent information. The managerial challenge is therefore to maintain both substantive validity and administrative traceability.

2.3. Data Governance and Digital Transformation in Government

Data governance defines responsibilities, standards, controls, and decision rights related to organizational data. Thomas et al. (2019) show that public-sector data-management maturity is multidimensional and must be assessed systematically. Shah et al. (2021) propose a data-lifecycle perspective for data-driven government, emphasizing that data quality is shaped from creation and collection through storage, use, sharing, and retirement. Van Donge et al. (2022) further highlight the role of data stewardship in coordinating data quality and exchange across government ecosystems.

These ideas correspond with Indonesia's One Data policy, which requires standards, metadata, interoperability, and reference or master codes (Republic of Indonesia, 2019b). Applied to competency administration, these principles imply that field names, data definitions, valid values, source documents,

responsible reviewers, and revision histories should be made explicit. A spreadsheet or application cannot by itself resolve ambiguity if users do not share the same definitions and control rules.

Digital transformation literature consistently emphasizes organizational change. Mergel et al. (2019) define digital transformation in the public sector as a process involving new ways of working and organizational adaptation. Vial (2019) frames digital transformation as a response to digital disruption that alters value creation, organizational structures, and capabilities, while Verhoef et al. (2021) emphasize the multidisciplinary nature of transformation and the need to redesign processes and performance measures.

At the local-government level, leadership, user capability, and work design become decisive. Pittaway and Montazemi (2020) show that local governments require know-how to lead digital transformation. Andersson et al. (2022) find that automation reconfigures public-service work rather than simply eliminating manual tasks. Blanka et al. (2022) likewise link digital transformation with employee competency, and Ahn and Chen (2022) show that government employees' willingness to use advanced technologies is shaped by perceptions and experience. These findings support a staged approach in which process standardization and capability development precede full system integration.

The wider policy context also supports such a progression. Indonesia's Electronic-Based Government System framework and One Data policy encourage integrated, interoperable, and accountable government information systems (Republic of Indonesia, 2018; Republic of Indonesia, 2019b). International benchmarks similarly stress governance foundations and data-driven public services as prerequisites for sustainable digital government (Dener et al., 2021; OECD, 2024; United Nations Department of Economic and Social Affairs, 2024).

2.4. Analytical Framework and Research Gap

This study integrates four analytical lenses: management functions, operational effectiveness, public human-resource competency administration, and data governance. Planning is examined through the use of targets and reference standards; organizing through task allocation and data grouping; implementation through matching, verification, correction, and entry activities; and controlling through rechecking, validation, approval, and revision tracking. The effectiveness of the process is assessed qualitatively through observed issues affecting accuracy, consistency, traceability, and workload efficiency.

The literature suggests that technology should be introduced only after the process and data architecture are sufficiently clear. Accordingly, the study does not test statistical hypotheses. Instead, it uses the literature as an analytical framework for a qualitative case and develops practical propositions: stronger standardization should reduce format variation; clearer verification and change tracking should improve traceability; and a role-based shared system should improve monitoring once the underlying process has stabilized.

The research gap lies in the limited process-level evidence on how these principles interact in local-government competency administration. By focusing on an actual SKJ workflow and translating observed constraints into a phased improvement roadmap, the study provides an applied bridge between public-

management theory and day-to-day data governance.

3. RESEARCH METHODOLOGY

3.1. Research Design

The study used a descriptive qualitative single-case design. A qualitative approach was selected because the research questions concern how management functions are manifested in an administrative process, what operational problems emerge during that process, and how those problems can be addressed in context. The approach is consistent with case-oriented qualitative research that seeks to understand organizational processes through multiple sources of evidence rather than estimate population parameters (Creswell & Creswell, 2018).

The case was the SKJ data-management process in the Organization Division of the Cilegon City Regional Secretariat, Banten Province, Indonesia. The observation period covered the internship from 22 June to 22 July 2026. The unit of analysis was the workflow used to inventory, compare, verify, adjust, and record competency-related position data. The working volume included approximately 1,085 civil-service positions, which provided a sufficiently substantial operational setting for observing issues of standardization, workload, and quality control.

3.2. Data Sources and Collection

Four evidence sources were used. First, direct participation provided first-hand exposure to the sequence of tasks and the practical difficulties encountered during data processing. Second, structured field observation was used to record the flow of work, coordination points, recurring corrections, and the use of electronic worksheets. Third, document analysis covered technical and administrative materials that could be used for academic purposes, including job-data formats, applicable regulations, organizational information, and workflow documentation. Fourth, scholarly and policy literature was used to interpret the observed process.

No individual employee performance scores, personal identifiers, or confidential personnel information are reported in this article. The number of approximately 1,085 positions is used only as an aggregate indicator of workload. Evidence was limited to information already available for the academic report and observations made during the placement. This boundary reduces privacy risks and keeps the analysis focused on organizational process rather than individual employees.

3.3. Data Analysis and Trustworthiness

Analysis was conducted in three stages. First, the observed SKJ workflow was mapped from source-document inventory to matching, verification, adjustment, entry, and final checking. Second, activities were coded deductively using the four management functions and inductively for operational problems. The recurring problem codes were then consolidated into three categories: high data volume and verification load, format inconsistency, and weak change tracking. Third, improvement options were developed by comparing these findings with operations-management, data-governance, and digital-government principles.

Trustworthiness was strengthened through simple source triangulation: descriptions of work were checked against available documents, applicable regulations, and field records. Proposed improvements were explicitly separated from observed findings.

For example, suggested indicators such as completeness rates, correction counts, and processing time were treated as future control measures rather than as outcomes already measured during the internship. This distinction was maintained to avoid overstating the evidence.

4. RESULTS AND DISCUSSION

4.1. SKJ Data-Management Process

The observed workflow consisted of five recurring stages: inventory, matching, verification, adjustment or entry, and control. Source documents were first grouped to identify the records that had to be processed. Position names, classifications, and related elements were then compared with the references used by the Organization Division. Verification focused on completeness, consistency, duplication, and obvious input discrepancies. Necessary corrections were entered into the working format, followed by rechecking before the data were considered ready for subsequent use.

The workflow reflects a data-lifecycle logic. Shah et al. (2021) argue that public data should be managed systematically across its lifecycle, while Thomas et al. (2019) emphasize that data maturity depends on repeatable organizational practices. The Cilegon case confirms that the core challenge is not simply the existence of electronic files; it is the ability to apply consistent rules across many records and source documents.

Management Functions Observed in the SKJ Workflow

Planning: Defines target records, references, priorities, and completion sequence, clarifying scope and reducing repeated work.

Organizing: Groups positions and assigns responsibility for checking and correction, structuring workload and accountability.

Implementation: Covers matching, verification, entry, correction, and discrepancy coordination, producing processed records.

Control: Uses rechecking, validation, and correction records to reduce error risk and strengthen traceability.

The management-function summary shows that the SKJ process already contains recognizable managerial functions. The important implication is that improvements do not require replacing the process conceptually; rather, they require making each function more explicit and controllable. Planning should be reflected in measurable work targets and reference rules, organizing in clear ownership, implementation in standardized steps, and controlling in verifiable status and change records.

The process also demonstrates why management and data governance are inseparable. A technically correct data field can still become operationally unreliable if the source is unclear, a revision is not recorded, or different users apply different naming conventions. Laudon and Laudon (2022) note that information systems create value only when data quality and organizational controls are adequate. In the SKJ context, process discipline is therefore a prerequisite for digital integration.

4.2. Operational Constraints Affecting Effectiveness

Three constraint groups were consistently observed. The first was the scale of the workload. Processing approximately 1,085 positions created a repetitive verification burden, increasing the importance of workload allocation and quality-control discipline. Repetitive manual checking can raise the probability of omission and fatigue-related errors, particularly when different types of discrepancies must be resolved within limited time.

The second constraint was inconsistent formatting across source documents. Equivalent information could appear under

different labels, column structures, or naming conventions. This increased the time required for matching and created room for interpretation. The problem is consistent with data-governance research showing that standardization and stewardship are essential to data quality in public-sector ecosystems (Thomas et al., 2019; van Donge et al., 2022).

The third constraint was limited change tracking. When revision status and correction history are not captured in a shared mechanism, it becomes more difficult to identify who changed a record, why it was changed, and whether the correction has been approved. Matheus et al. (2021) emphasize that digital transparency depends on appropriate organizational and system design. At the internal process level, this principle translates into clear workflow statuses, change logs, access rights, and approval rules.

Main Constraints in SKJ Data Governance

High record volume: Approximately 1,085 positions required review and processing, increasing verification load and error exposure.

Format inconsistency: Different sources used different labels and column structures, lengthening matching time and increasing interpretation risk.

Limited change tracking: Revision status and history were not fully integrated, reducing traceability and progress-monitoring efficiency.

These constraints are interdependent. High volume magnifies the cost of format inconsistency, while weak tracking makes it difficult to manage the larger number of corrections generated by inconsistent data. The case therefore supports a systems view: improving only one step may shift rather than remove the bottleneck. A standardized input structure, explicit verification workflow, and controlled record history need to be developed together.

The findings also illustrate why automation should not be treated as an immediate substitute for manual work. Andersson et al. (2022) show that automation reconfigures public-sector work, and Wilson and Mergel (2022) identify structural and cultural barriers that digital champions must overcome. If an e-SKJ application is introduced before data definitions and responsibilities are clear, inconsistency may simply become embedded in a faster system.

4.3. Staged Improvement Model

The analysis supports a staged improvement model. The short-term stage focuses on standardization and validation using tools already available. A single master template should define mandatory columns, valid formats, reference codes, source fields, verification status, update dates, and correction notes. A concise data dictionary should accompany the template so that each field has one agreed meaning. Where values are limited to known categories, spreadsheet validation rules can reduce entry variation.

A two-stage verification procedure is also recommended. The first check can be performed by the data processor and the second by a designated reviewer. Corrections should be captured in a simple change log containing the previous value, new value, reason, date, and reviewer. This recommendation is consistent with One Data principles and lifecycle-based government data management (Republic of Indonesia, 2019b; Shah et al., 2021). It also parallels evidence from standard-implementation contexts showing that consistent rules and structured evaluation processes are critical to reliable organizational outputs (Sova et al., 2023).

The medium-term stage is a shared database with role-based access and explicit workflow statuses, such as draft, revision

required, verified, and final. A basic dashboard can summarize the number of records in each status so that supervisors can monitor progress without opening files individually. Such a system would address both version control and managerial visibility, but it should be introduced together with user training and clear ownership.

Digital capability is an important enabling condition. Blanka et al. (2022) connect employee competency with digital transformation, and Ahn and Chen (2022) show that government employees' willingness to use technology is influenced by perceived benefits and experience. In the present case, training in spreadsheet validation, data cleaning, controlled naming, and version management can create a practical foundation before more complex technology is deployed. Ismail et al. (2026), in a different data-analytics context, similarly demonstrate that cleaning, normalization, and structured evaluation are prerequisites for trustworthy analytical outputs; the relevance here is methodological rather than domain-specific.

The long-term stage is an integrated web-based e-SKJ system. Its development should begin with business-process mapping, data architecture, user requirements, access authority, and audit needs. The system should enable controlled editing, documented approval, search and filtering, status monitoring, revision history, and interoperability with other authorized government data where appropriate. This direction aligns with Indonesia's electronic-government and One Data frameworks (Republic of Indonesia, 2018; Republic of Indonesia, 2019b) and with international digital-government maturity principles (Dener et al., 2021; OECD, 2024; United Nations Department of Economic and Social Affairs, 2024).

Importantly, the proposed e-SKJ should be viewed as the final layer of an improved management system rather than the starting point. Mergel et al. (2019), Vial (2019), and Pittaway and Montazemi (2020) all emphasize that transformation requires redesigned processes, managerial capacity, and organizational adaptation. The case therefore supports the principle of "standardize first, integrate second, automate third."

Proposed Improvement Roadmap

0-3 months: Master template, data dictionary, validation rules, a two-stage checklist, and a change log to improve consistency and traceability.

3-12 months: Shared database, workflow statuses, a progress dashboard, role-based access, and user training to improve version control and monitoring.

Beyond 12 months: An integrated web-based e-SKJ with audit trails and authorized interoperability to support sustainable updating and stronger governance.

4.4. Implications, Novelty, and Limitations

The practical implication is that managers can improve competency-data quality before making a major technology investment. A master template, data dictionary, verification checklist, and change log are low-cost controls that directly strengthen planning and control. At the same time, clear task ownership strengthens organizing, while training supports implementation. The improvement roadmap therefore operationalizes the four management functions within a data-governance context.

The study also contributes to public-management literature by showing how broad concepts of digital transformation and data stewardship appear in a specific administrative micro-process. Previous research has often examined digital government at the organizational or service level (Lindgren et al., 2019; Mergel et

al., 2019; OECD, 2024). This case adds process-level evidence that a seemingly routine HR data task contains governance choices about standards, ownership, control, and digital readiness.

The findings should be interpreted within the study's limitations. The case covers one organizational unit and one month of field involvement, and it did not measure processing time, error rates, or user perceptions quantitatively. The proposed performance indicators are therefore recommendations for future monitoring rather than measured outcomes. Future studies could test the roadmap by comparing pre- and post-standardization error rates, completion times, user acceptance, and auditability across multiple local governments.

5. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

This study examined the role of management functions in supporting the effectiveness of SKJ competency-data governance in the Organization Division of the Cilegon City Regional Secretariat. The field case shows that planning, organizing, implementation, and controlling are already embedded in the workflow through target setting, grouping and allocation of records, verification and correction activities, and final checking. However, effectiveness is constrained by the interaction of high data volume, inconsistent source formats, and limited revision tracking.

The central conclusion is that digitalization should be sequenced after process and data standardization. A web-based e-SKJ system can strengthen integration and monitoring, but it will deliver sustainable value only when field definitions, responsibilities, verification rules, and change histories are already clear. The study therefore proposes a staged pathway: standardized templates and controls in the short term, shared workflow-enabled data management in the medium term, and integrated e-SKJ development in the long term.

Theoretically, the findings connect classical management functions with public-sector data governance and digital-transformation literature at the micro-process level. Practically, they show that managers can strengthen data quality through low-cost governance mechanisms before undertaking larger system-development investments. For policy and administration, the case reinforces the importance of aligning local competency-data management with One Data and electronic-government principles.

For future implementation, the Organization Division should establish measurable indicators such as completeness of mandatory fields, number of discrepancies detected during verification, average processing time per data group, number of post-verification corrections, and percentage of records with identifiable sources and revision histories. Future research should evaluate these indicators longitudinally and examine whether standardized workflows and an integrated e-SKJ system produce measurable improvements in accuracy, timeliness, user acceptance, and auditability.

REFERENCES

- Ahn, M. J., & Chen, Y.-C. (2022). Digital transformation toward AI-augmented public administration: The perception of government employees and the willingness to use AI in government. *Government Information Quarterly*, 39(2), 101664. <https://doi.org/10.1016/j.giq.2021.101664>
- Andersson, C., Hallin, A., & Ivory, C. (2022). Unpacking the digitalisation

- of public services: Configuring work during automation in local government. *Government Information Quarterly*, 39(1), 101662. <https://doi.org/10.1016/j.giq.2021.101662>
- Blanka, C., Krumay, B., & Rueckel, D. C. (2022). The interplay of digital transformation and employee competency: A design science approach. *Technological Forecasting and Social Change*, 178, 121575. <https://doi.org/10.1016/j.techfore.2022.121575>
- Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (5th ed.). SAGE Publications.
- Daft, R. L. (2022). *Management* (14th ed.). Cengage.
- Dener, C., Ghunney, L. E., Johns, K. D., & Nii-Aponsah, H. (2021). *GovTech Maturity Index: The State of Public Sector Digital Transformation*. World Bank.
- Dessler, G. (2020). *Human Resource Management* (16th ed.). Pearson.
- Gabryelczyk, R. (2020). Has COVID-19 accelerated digital transformation? Initial lessons learned for public administrations. *Information Systems Management*, 37(4), 303-309. <https://doi.org/10.1080/10580530.2020.1820633>
- Heizer, J., Render, B., & Munson, C. (2020). *Operations Management: Sustainability and Supply Chain Management* (13th ed.). Pearson.
- Ismail, M. I., Susanto, D., Riyanto, I., & Rosady, M. M. (2026). Performance evaluation of Naive Bayes, SVM, LSTM, and IndoBERT for fashion review sentiment classification. *Building of Informatics, Technology and Science (BITS)*, 8(2), 727-741. <https://doi.org/10.47065/bits.v8i2.10357>
- Laudon, K. C., & Laudon, J. P. (2022). *Management Information Systems: Managing the Digital Firm* (17th ed.). Pearson.
- Lindgren, I., Madsen, C. O., Hofmann, S., & Melin, U. (2019). Close encounters of the digital kind: A research agenda for the digitalization of public services. *Government Information Quarterly*, 36(3), 427-436. <https://doi.org/10.1016/j.giq.2019.03.002>
- Matheus, R., Janssen, M., & Janowski, T. (2021). Design principles for creating digital transparency in government. *Government Information Quarterly*, 38(1), 101550. <https://doi.org/10.1016/j.giq.2020.101550>
- Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government Information Quarterly*, 36(4), 101385. <https://doi.org/10.1016/j.giq.2019.06.002>
- Ministry of Administrative and Bureaucratic Reform. (2017). Regulation of the Minister of Administrative and Bureaucratic Reform of the Republic of Indonesia Number 38 of 2017 concerning Civil Service Competency Standards [Peraturan Menteri PANRB Nomor 38 Tahun 2017 tentang Standar Kompetensi Jabatan].
- Ministry of Administrative and Bureaucratic Reform. (2026). Regulation of the Minister of Administrative and Bureaucratic Reform Number 8 of 2026 concerning Digital Government Performance Evaluation [Peraturan Menteri PANRB Nomor 8 Tahun 2026 tentang Evaluasi Kinerja Pemerintah Digital].
- Monang, J., Sudirman, I., Siswanto, J., & Yassierli. (2022). Competencies for superior performance across management levels in the provincial government executive offices. *Journal of Management Development*, 41(1), 24-50. <https://doi.org/10.1108/JMD-02-2021-0048>
- OECD. (2024). 2023 OECD Digital Government Index: Results and Key Findings (OECD Public Governance Policy Papers No. 44). OECD Publishing. <https://doi.org/10.1787/1a89ed5e-en>
- Pemerintah Kota Cilegon. (2025a). Peraturan Walikota Cilegon Nomor 9 Tahun 2025 tentang Kedudukan, Susunan Organisasi, Tugas dan Fungsi, serta Tata Kerja pada Sekretariat Daerah.
- Pemerintah Kota Cilegon. (2025b). Rencana Pembangunan Jangka Menengah Daerah Kota Cilegon Tahun 2025-2029. Pemerintah Kota Cilegon.
- Pittaway, J. J., & Montazemi, A. R. (2020). Know-how to lead digital transformation: The case of local governments. *Government Information Quarterly*, 37(4), 101474. <https://doi.org/10.1016/j.giq.2020.101474>
- Republic of Indonesia. (2016). Government Regulation Number 18 of 2016 concerning Regional Apparatus [Peraturan Pemerintah Nomor 18 Tahun 2016 tentang Perangkat Daerah].
- Republic of Indonesia. (2018). Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems [Peraturan Presiden Nomor 95 Tahun 2018 tentang Sistem Pemerintahan Berbasis Elektronik].
- Republic of Indonesia. (2019a). Government Regulation Number 72 of 2019 amending Government Regulation Number 18 of 2016 concerning Regional Apparatus.
- Republic of Indonesia. (2019b). Presidential Regulation Number 39 of 2019 concerning One Data Indonesia [Peraturan Presiden Nomor 39 Tahun 2019 tentang Satu Data Indonesia].
- Republic of Indonesia. (2023). Law Number 20 of 2023 concerning the State Civil Apparatus [Undang-Undang Nomor 20 Tahun 2023 tentang Aparatur Sipil Negara].
- Robbins, S. P., & Coulter, M. (2021). *Management* (15th ed., Global ed.). Pearson.
- Shah, S. I. H., Peristeras, V., & Magnisalis, I. (2021). DaLiF: A data lifecycle framework for data-driven governments. *Journal of Big Data*, 8, 89. <https://doi.org/10.1186/s40537-021-00481-3>
- Slack, N., Brandon-Jones, A., & Burgess, N. (2022). *Operations Management* (10th ed.). Pearson.
- Sova, M., Lumbanraja, T., & Ismail, M. I. (2023). Analysis of the implementation of PSAK No. 71 on impairment loss reserves: A case study of state-owned pharmaceutical companies listed on the Indonesia Stock Exchange. *Greenation International Journal of Economics and Accounting*, 1(2), 87-95. <https://doi.org/10.38035/gijea.v1i2.42>
- Thomas, M. A., Cipolla, J., Lambert, B., & Carter, L. (2019). Data management maturity assessment of public sector agencies. *Government Information Quarterly*, 36(4), 101401. <https://doi.org/10.1016/j.giq.2019.101401>
- United Nations Department of Economic and Social Affairs. (2024). United Nations E-Government Survey 2024: Accelerating Digital Transformation for Sustainable Development. United Nations.
- van Donge, W., Bharosa, N., & Janssen, M. F. W. H. A. (2022). Data-driven government: Cross-case comparison of data stewardship in data ecosystems. *Government Information Quarterly*, 39(2), 101642. <https://doi.org/10.1016/j.giq.2021.101642>
- Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, 122, 889-901. <https://doi.org/10.1016/j.jbusres.2019.09.022>
- Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems*, 28(2), 118-144. <https://doi.org/10.1016/j.jsis.2019.01.003>
- Widianto, S., Lestari, Y. D., Adna, B. E., Sukoco, B. M., & Nasih, M. (2021). Dynamic managerial capabilities, organisational capacity for change and organisational performance: The moderating effect of attitude towards change in a public service organisation. *Journal of Organizational Effectiveness: People and Performance*, 8(1), 149-172. <https://doi.org/10.1108/JOEPP-02-2020-0028>
- Wilson, C., & Mergel, I. (2022). Overcoming barriers to digital government: Mapping the strategies of digital champions. *Government Information Quarterly*, 39(2), 101681. <https://doi.org/10.1016/j.giq.2022.101681>