Journal Series on Governance and Management of IT in Electronic-Based Government Systems (SPBE) in Indonesia

Andriyanti Asianto [1], Nenden Siti Fatonah[2], Gerry Firmansyah[3], Habibullah Akbar[4]
[1,2,3,4] Universitas Esa Unggul, Indonesia
Email : tinuk.esaunggul@gmail.com, nenden.siti@esaunggul.ac.id, gerry@esaunggul.ac.id, habibullah.akbar@esaunggul.ac.id

KEYWORDS	ABSTRACT
SPBE, Governance, E-Government, GRC, ISO/IEC 38500, COBIT 5, COBIT 2019	SPBE Governance and Management is a framework that guarantees the implementation of regulation, direction and control in the implementation of SPBE in an integrated manner. SPBE Governance and Management aims to ensure that SPBE elements consist of the National SPBE Master Plan, SPBE Architecture, SPBE Roadmap, SPBE Program Plan and Budget, Business Process, Data and Information, SPBE Infrastructure, SPBE Application, SPBE Security, and Services SPBE. to achieve SPBE goals. In implementing all SPBE elements, integration and harmonization between the National SPBE and Regional SPBE are required. Therefore, this thesis research raises SPBE Governance and Management in accordance with COBIT 2019 as a governance framework that is set globally. Thus, this research will provide recommendations for the implementation of SPBE in Indonesia which can provide appropriate benefits for SPBE users, namely the community, business actors, civil servants, and other government agencies, and have detailed objectives and activities in accordance with COBIT 2019.

1. Introduction

On August, 2020, Indonesia President said that digital transformation structurally change the way of work, activities, consumption, learning, and transactions that were previously offline with physical contact to be more online (https://setkab. go.id/anticipation-change-president-given-5-arahan-soal-planning-transformation-digital). Ecosystem changes need to be anticipated, prepared, and carefully planned so that government policies, governance, management and services are good governance.

To anticipate this, the President gave several complete directions as follows:

1. Expansion of access and improvement of digital infrastructure. Internet access is the right of everyone without exception. With the use of the internet, the community of internet users will be more connected, so that in the end they can form communities through online-based platforms. This gives a new and stronger phenomenon to the business community, education, politics, religious discussion, government, health, and others, which makes the internet an important component in the progress of society in the transformation stage towards a digital society.

2. Prepare a digital transportation roadmap in strategic sectors, both in government, public services, social assistance, the education sector, the health sector, trade, the industrial sector, and the broadcasting sector.

3. Accelerate the integration of the National Data Center (NDC), to support excellent and reliable data governance in public services and government administration services.

4. Prepare digital talent HR needs. Indonesia needs digital talents of approximately 9 million people for the next 15 years, this really needs preparation. The Head of State also added that the need for human resources in Indonesia is approximately 600,000 per year so that Indonesia can build a good ecosystem for the growth of digital talents.

5. Matters related to regulations, related to funding schemes, and digital transformation financing must be prepared as soon as possible. In fact, in 2018 Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems (SPBE) was issued. This legal product is the initial reference for planning and implementing SPBE in the Indonesian government.

Strategic management of public organizations is described in a relationship between Legitimacy and Support (Legitimacy and support), Operational Capabilities, and Public Value Added (Public Value) which produces Service, Outcomes, and Trust. This Strategic Triangle was later adapted by Rini Widyantini (2021) in her presentation material to become;

1. Legitimacy and support based on legal basis, consistently high performance, able to achieve organizational goals, maintain trust, and community satisfaction. This activity contains a mandate as well as a legal basis which is an input activity to an Organization with Good Governance.

2. The defined Organization and governance is an organization with an agile, flexible and collaborative work character with technical-operational and administrative capabilities manifested in optimal performance accountability. Organizations should have human resources with capabilities that meet the requirements of their duties, main responsibilities and functions.

3. Organizations should also have established Business Processes and Governance that are simple, thematic, and integrated with information and communication technology (IT) basis.

4. The end result of the resource points above is a Service that becomes a vehicle for achieving organizational goals and realizing the organization's vision through its missions, as well as generating substantial added value for public services.

Based on Presidential Regulation Number 95 of 2018, SPBE supports all areas of change as a fundamental and comprehensive effort in the development of a state apparatus that utilizes IT as a driving force, so that the professionalism of the state civil apparatus and good governance can be realized. This research is a series of studies on SPBE Governance and Management which will be aligned with a global governance framework. The first step is to use SLR to explore previous studies related to IT governance and IT management in the global ecosystem (Sutejo & Firmansyah, 2022). Furthermore, from the results of the

literature study, it will be determined which global governance will be used as a reference as a governance framework that will be compared with SPBE Indonesia.

Thus, the contribution of this research is a recommendation to use an IT governance framework as a reference for SPBE Indonesia to describe the objectives and activities of IT governance and IT management to achieve effective, efficient and accountable governance. After that, this serial research will be continued with research between Presidential Regulation No. 95 of 2018 which will be presented in the next journal.

2. Materials and Methods

From the introduction presented, matters related to governance and management in an e-government framework are essentially inseparable from an overview of the global framework that is usually referred to by an e-government system.

2.1. Definition of e-Government

On the Wikipedia page it is stated that electronic government or e-government or electronics government, also called e-gov, digital government, online government or in certain contexts transformational government is the use of information technology by the government to provide information and services to its citizens, business affairs, and other matters relating to government. E-Gov is implemented to improve internal efficiency, deliver public services, or democratic governance processes with the main delivery models being Government-to-Citizen or Government-to-Customer (G2C), Government-to-Business (G2B) and Government- to-Government (G2G).

On the un.org page, E-government is defined as everything related to online government services and the electronic exchange of information and services with citizens, businesses and other government bodies. Traditionally, e-government has been considered the use of IT to increase the efficiency of government agencies and provide government services online. Today, the e-government framework has expanded to include governments' use of IT to conduct various interactions with citizens and businesses as well as open government data and use of IT to enable innovation in governance.

UN Member States have also emphasized that IT facilitates the flow of information between governments and people, and have recognized the power of communication technologies, including innovative connection and application technologies, to promote knowledge exchange, technical cooperation, and capacity building for sustainable development.

Referring to Presidential Instruction No. 3 of 2003 concerning the National Policy and Strategy for e-Government Development, it is said that the use of communication and information technology in government processes (e-government) will increase the efficiency, effectiveness, transparency and accountability of governance. From all these definitions, eGovernment can be summarized as a system of government that uses IT and IT regulations as a driving force. For that, IT governance becomes an absolute thing.

2.2. GRC (Governance, Risk, dan Compliance)

From the https://aws.amazon.com/id/what-is/grc/ page, there is a fairly comprehensive explanation of Governance, Risk and Compliance (GRC). GRC stands for governance, risk (management), and compliance. Most businesses are familiar with the term but applied it separately in the past. GRC combines governance, risk management and compliance in one coordinated model. This merger helps your company reduce waste, increase efficiency, reduce non-compliance risks, and share information more effectively. GRC is a structured way to align IT with business goals while managing risk and meeting all industry and government regulations. Governance, Risk and Compliance (GRC) includes tools and processes to integrate organizational governance and risk management with innovation and technology adoption. Companies use GRC to reliably achieve organizational goals, eliminate uncertainty, and meet compliance requirements.

Good governance includes the following:
- Ethics and accountability
- Share information transparently
- Conflict resolution policy
- Resource management

Referring back to the https://aws.amazon.com/id/what-is/grc/ page, the components of the GRC are detailed in the image below.

Figure 1 – GRC Component

From the Figure above, the GRC components are described and mapped into several global predefined frameworks. The GRC framework is a model for managing governance and compliance risk within a company. The GRC framework includes identifying key policies that can drive a company towards its goals. By adapting the GRC framework, you can take a proactive approach to mitigating risks, making informed decisions and ensuring business continuity.

Organizations implement GRC by adopting a framework that contains key policies that are aligned with the organization's strategic objectives. Key stakeholders base their work on a shared understanding of the GRC framework as they develop policies, develop workflows and govern the company. Companies may use software and tools to coordinate and monitor the success of the GRC framework.

2.3. IT Governance

IT governance in many definitions is conveyed differently, depending on the needs and character of an organization. Indeed, IT governance consists of a collection of policies, practices, and processes. These three points are used to ensure that the process of making decisions, establishing authority, determining control, and measuring performance (Falahah, 2022). The objects that are the focus of governance are IT Assets, such as investment planning processes, budget planning, implementation & service commitments, change management, security management, and organizational continuity management.

Firmansyah, Gerry (2020) in the IT Governance course material refers to the ebook Moeller (2013) states that IT governance is used to ensure the IT change process complies with regulatory requirements, both government regulations and professional standards (Asianto & Firmansyah, 2022; Rozas, Khalid, Yalina, Wahyudi, & Rolliawati, 2020; Wahyu & Firmansyah, 2018).

And in almost every IT governance plan, it covers several aspects;

- control over all aspects of IT work;
- coordination between various parts of IT-related work, including building new systems;
- IT infrastructure development and support;
- outcome measurement of IT systems and processes;
- compliance with internal IT policies or regulations;
- validation of spending on all IT resources;
- IT accountability and transparency within the organization;
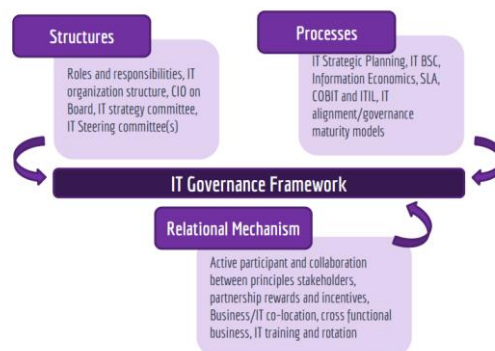- connectivity between the needs of IT users, the wider organization, and other stakeholders.

Figure 2 – IT Governance Framework

2.4. COBIT 5 Framework

According to Ignatius Edward Riantono, S.E., M.Ak., CCFA, CertDA, 2021 on the page https://accounting.binus.ac.id/2021/09/07/it-governance-dengan-penerapan-framework-cobit-5 -part-1/, COBIT 5 is that Information Technology can help make decisions at the managerial level, but the application of Information Technology requires a large amount of money with a high risk of failure. To make the application of Information Technology within

a company optimally used, it requires a proper understanding of the basic concepts of the applicable system, the technology used, the applications used and the management and development of systems carried out at the company.

Information is the main resource for the enterprise. Technology plays an important role that can improve the function of information in the enterprise, social, public and business environment. COBIT 5 provides a comprehensive framework service to help IT governance and management within a company achieve the expected goals. COBIT 5 for Information Security as described in Figure II.5 is part of COBIT 5 as a whole, where the focus on COBIT 5 for Information Security is more emphasis on information security and provides a detailed and practical description of guidelines for information security professionals and people people who are part of the enterprise who have an interest in the field of information security. In general, I can say that the meaning of COBIT 5 is a framework or framework that provides services to enterprises, be it a company, organization or government in managing and managing IT assets or resources to achieve these enterprise goals. COBIT 5 is a set of best practice (framework) for information technology management (IT management) which consists of: executive summary, framework, control objectives, audit guidelines, implementation tool set and management guidelines which are very useful for strategic information system processes (Masuda et al., 2021).
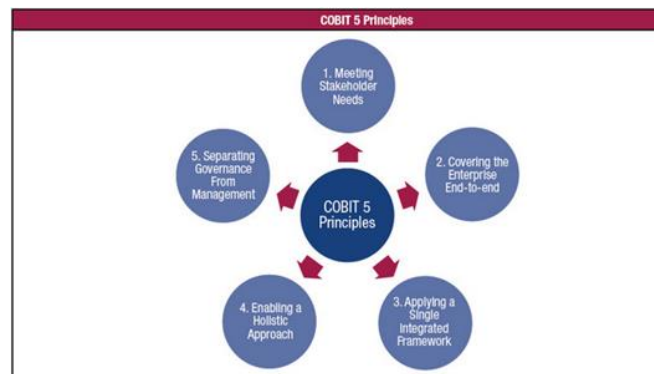

Figure 3 – COBIT 5 Principles

COBIT implementation is believed to be able to assist companies in terms of improving audit approaches/programs, supporting work audits with detailed audit directions, providing guidelines for IT governance, as a benchmark assessment for IS/IT control, improving IS/IT control, and as a standardization of approaches/programs. audits.

2.5. COBIT 2019 Framework

From the https://www.bangfad.com/cobit-2019-modul-1-introduction-framework-methodology.html page, the Governance System Principles and Governance Framework Principles are described using COBIT 19 as shown below.
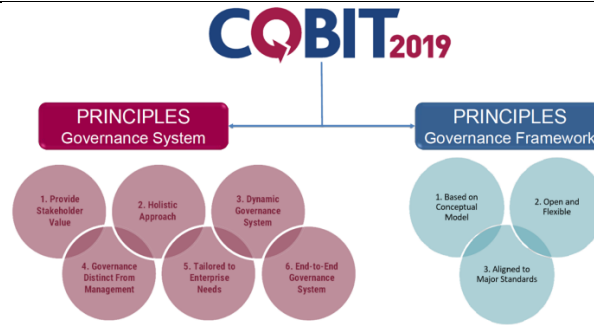
Figure 5 – COBIT 2019 Principles

COBIT 2019 is a Framework issued by the ISACA association, an international professional organization in the field of information technology governance founded in the United States. COBIT 2019 was released in 2019 and is an improvement over the previous version, namely COBIT 5 (Association, 2018; Lainhart, Conboy, & Saull, 2019).

COBIT 2019 is a framework that provides principles, practices, tools and models that are accepted and defined globally to increase trust and value from T&I which is an organizational resource entity that must be properly managed, and strengthen the role of COBIT 2019 on an ongoing basis to encourage major innovation and business transformation work.

2.6. Literature Study

Referring to the page https://romisatriawahono.net//, Systematic Literature Review or often abbreviated as SLR or in Indonesian. it is called a systematic literature review is a method of literature review that identifies, assesses, and interprets all findings on a research topic, to answer research questions (research question) that has been previously determined (Kitchenham & Charters, 2007). The SLR method is carried out systematically by following stages and protocols that allow the literature review process to avoid bias and subjective understanding of the researchers.

Quoting from https://bisnis-s1.stekom.ac.id/, this method can also be used to obtain research gaps and interesting new research areas to study. The framework and background can also be identified with the SLR to position new research.

SLR has three steps, namely Planning, Conducting and Reporting.

1. Planning
   In this phase the identification of what is needed in conducting a literature study must be fixed. When reading scientific articles, we must first know the contents before reading, knowing here is just a general description first. The second in this phase is to determine the research questions that form the basis for conducting a literature study.

2. Conducting
   This phase is the process of searching for literature sources, which consists of identifying research, selecting main research, assessing the quality of literature, extracting data and continuing to monitor, and synthesizing data. Usually LSR uses "searching" media that is already available in several indexers.

3. Reporting
   This phase produces well-systematic literature materials. Usually hundreds of articles are processed into tens and finally dozens that are ready to be read and analyzed. Usually there are three stages, namely Database Search from indexers available on the internet will obtain hundreds of data where the final step is Full Review.

   In this literature study, the research object that will be used is IT Governance in eGovernment which is found in journals or publishers from research and also implementation in other countries. The literature study process will be divided into several stages as follows:
1. Selection of question content; where research questions will be arranged based on the thesis theme. The question is in the operational setting of the organization, what IT governance is generally used.
2. The process of searching for previous research; where previous research searches were carried out to obtain journals with the keywords it governance and e-government to refine search results.
3. Apply inclusion and exclusion to the selected criteria; to filter whether a previous study can be used as a reference for the study of the literature of this research. The criteria are research published from 2018 to 2023, taking from Google Scholar, with the keyword IT Governance.
   - KR 1   : Was the research conducted between 2018 and 2023?
   - KR 2   : Does the research explain in detail the specific themes and issues regarding IT Governance?
   - KR3   : Does the journal elaborate on COBIT IT governance?
   - KR4   : Does the journal elaborate on ISO/IEC IT governance?

4. Check the suitability of the selected criteria; so that the data obtained will be evaluated for feasibility based on the criteria in the points above.
5. Provide a discussion of the results of journal submissions based on research questions; where the results of the collection will be juxtaposed with research questions, to see whether the results of the discussion have answered the research questions that have previously been determined.

3. Results and Discussions

3.1. Journal Filtering

Table 1 - Journals by Criteria

No	Title	Researchers	Years
1	Measuring the capability level of IT governance: a research study of COBIT 5 at Universitas Negeri Gorontalo	Katili, Pateda, Djafri, & Amali,	2019
2	IT governance, IT/business alignment and organization performance for public sectors	Ghildyal & Chang,	2017

No	Title	Researchers	Years
3	Assessment IT governance of human resources information system using COBIT 5	Fernandes, Hartono, & Aziza	2020
4	The Implementation of COBIT 4.1 and COBIT 5-Based IT Governance Audits in the Ministry of Finance of Indonesia	Sholihat	2018
5	Evaluation and recommendation it governance in hospital base on cobit *Framework*	Andry, James, Christian, & Dela,	2019
6	Evaluation Of Information Technology Governance at Mikroskil University Using COBIT 2019 *Framework* with BAI11 Domain	Sipayung & Yunis,	2022
7	The effect of business uncertainty on IT governance	Siregar & Harahap	2021
8	Valuating IT governance strategies with real options in a decision making framework	El Ghorfi, El Aroussi, Ouadou, & Aboutajdine	2018
9	Achieving IT-based synergies through regulation-oriented and consensus-oriented IT governance capabilities	Kude, Lazic, Heinzl, & Neff	2018
10	Enterprise system as business intelligence and knowledge capabilities for enhancing applications and practices of IT governance	Alkhaldi, Hammami, Kasem, Rashed, & Alraja	2017
11	Digital transformation: it governance in the agile environment a study case of Indonesia high regulated company	Indriasari, Supangkat, & Kosala	2020
12	Bibliometric Analysis of Research Trend on Agile IT Governance	Nugroho, Tjhin, Kosasih, & Prabowo	2022
13	Is board IT governance a silver bullet? A capability complementarity and shaping view	Turel, Liu, & Bart,	2019
14	Impact of IT governance mechanisms on organizational agility and the role of top management support and IT ambidexterity	Zhen, Xie, & Dong	2021
15	Emphasis on Capabilities Level Auditing Project *Planning* Tool	SA Arnomo, J Nasir, H Nuryanto	2021

Journaling was done by using the Publish and Persih applications with the keywords egoverment and IT governance. Filtered for journals from 2018 to 2023 from the Google Scholar publisher, until 100 journals were obtained. The journal was then ranked up to 15th. Based on the classification above with the 4 criteria mentioned above, there is 1 journal that is not related to the topic. And of the 14 journals that are references for literature studies, there are 28% of journals that used ISO/IEC 38500 and 72% used COBIT.

3.2. COBIT Comparison

The COBIT 5 and COBIT 2019 frameworks essentially separate the functions and objectives of Governance from Management. In the core models between COBIT 5 and COBIT 2019 there are several update revolutions as shown in the Figure below.

Figure 6 – COBIT 5 versus COBIT 2019

Referring to Aldy Maulana Syuhada's journal (2021), the comparison between COBIT 5 and COBIT 2019 can be seen from the general description (Syuhada, 2021). Formerly, in COBIT 5 there are no design factors, whereas in COBIT 2019 design factors have been added so that it can better adapt to. For companies, the principles in COBIT 5 are more concise so that they can also facilitate implementation while in COBIT 2019 there are more and allow for flexibility.

The domain in COBIT 5 is more process in nature while in COBIT 2019 it has more objective. Moreover, detailed in the domain in COBIT 2019 that has several additions and emphasizes results achieved. The objectives of COBIT 5 are after the goals of the company and the goals of the IT must also be determined, while in COBIT 2019 the goals of IT are aligned first with the goals of the company.

The description of COBIT 5 has no factor design, while COBIT 2019 has factor design. There are 5 principles in COBIT 5 and there are 6 principles in COBIT 2019. In the details process domain, in COBIT 5 it is called IT governance processes and in COBIT 2019 it is called

IT governance objectives. In COBIT 5, each domain becomes a verb, i.e. "manage". In COBIT 2019 each domain becomes an objective word, i.e. "Managed".

There are 37 domains in COBIT 5, and there are 40 domains (3 additional domains) in COBIT 2019. 5 Goals Cascade are used in COBIT 5 and 4 Goals Cascade are used in COBIT 2019 that IT goals are aligned first. The calculation of maturity level is used in COBIT 5 and the maturity level and capability level are used in COBIT 2019. Governance in COBIT 5 is as enabler and in COBIT 2019 governance component system.

4. Conclusion

From the COBIT 5 revolution to COBIT 2019, several facts were obtained that the analysis of the Indonesian SPBE framework is better to use COBIT 2019. The prospect of developing the results of this research is the prospect of implementing further follow-up studies by juxtaposing the 40 objectives in the 2019 COBIT core model with Indonesia Presidential Regulation Number 95 of 2018 concerning SPBE as shown in the figure below.
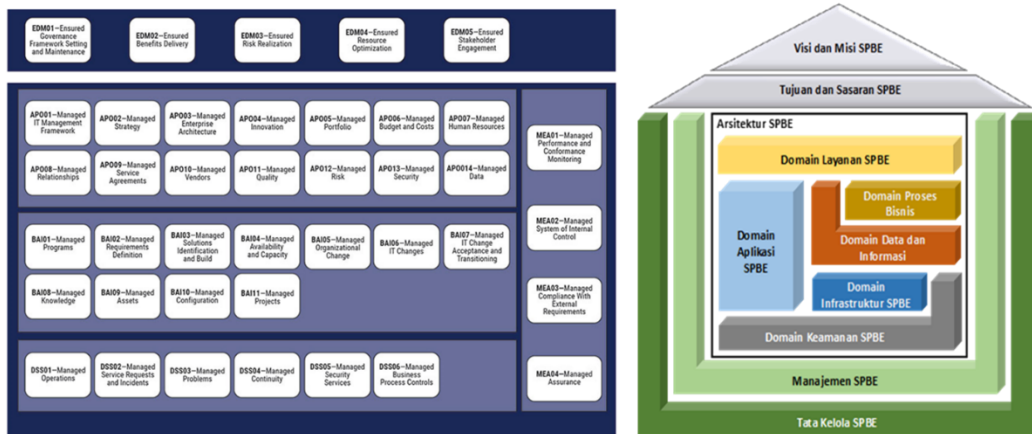

Figure 7 – COBIT 2019 Core Model Objectives versus Indonesia SPBE

5. References

Alkhaldi, Firas M., Hammami, Samir M., Kasem, Saleh, Rashed, Abdullah, & Alraja, Mansour Naser. (2017). Enterprise system as business intelligence and knowledge capabilities for enhancing applications and practices of IT governance. *International Journal of Organizational and Collective Intelligence (IJOCI)*, *7*(2), 63–77.

Andry, Johanes Fernandes, James, Surya, Christian, Salim, & Dela, Haeraini. (2019). Evaluation and recommendation it governance in hospital base on cobit Framework. *International Journal of Open Information Technologies*, *7*(5), 51–58.

Asianto, Andriyanti, & Firmansyah, Gerry. (2022). The Design of Indonesia e-Government (SPBE) Governance in Tangerang City. *First Mandalika International Multi-Conference on*

Science and Engineering 2022, MIMSE 2022 (Informatics and Computer Science)(MIMSE-IC-2022), 22–34. Atlantis Press.

Association, Information Systems Audit and Control. (2018). *COBIT® 2019 Framework: Governance and Management Objectives*. ISACA.

El Ghorfi, Rabii, El Aroussi, Mohamed, Ouadou, Mohamed, & Aboutajdine, Driss. (2018). Valuating IT governance strategies with real options in a decision making framework. *International Journal of Information Systems in the Service Sector (IJISSS)*, *10*(4), 42–58.

Fernandes, Andry Johanes, Hartono, Hartono, & Aziza, Chakir. (2020). Assessment IT governance of human resources information system using COBIT 5. *International Journal of Open Information Technologies*, *8*(4), 59–63.

Ghildyal, Amit, & Chang, Elizabeth. (2017). IT governance, IT/business alignment and organization performance for public sectors. *Journal of Economics, Business and Management*, *5*(6), 255–260.

Indriasari, Elisa, Supangkat, Suhono Harso, & Kosala, Raymond. (2020). Digital transformation: it governance in the agile environment a study case of Indonesia high regulated company. *International Journal of Scientific and Technology Research*, *9*(4), 1557–1562.

Katili, M. R., Pateda, V., Djafri, M. G., & Amali, L. N. (2019). Measuring the capability level of IT governance: a research study of COBIT 5 at Universitas Negeri Gorontalo. *Journal of Physics: Conference Series*, *1387*(1), 12021. IOP Publishing.

Kude, Thomas, Lazic, Miroslav, Heinzl, Armin, & Neff, Alexander. (2018). Achieving IT-based synergies through regulation-oriented and consensus-oriented IT governance capabilities. *Information Systems Journal*, *28*(5), 765–795.

Lainhart, J. W., Conboy, M., & Saull, R. (2019). COBIT 2019 Framework: Governance and Management Objectives. *Schaumburg: ISACA*.

Masuda, Yoshimasa, Zimmermann, Alfred, Viswanathan, Murlikrishna, Bass, Matt, Nakamura, Osamu, & Yamamoto, Shuichiro. (2021). Adaptive enterprise architecture for the digital healthcare industry: A digital platform for drug development. *Information*, *12*(2), 67.

Moeller, Robert R. (2013). *Executive's guide to IT governance: improving systems processes with service management, COBIT, and ITIL* (Vol. 637). John Wiley & Sons.

Moore, Mark H. (2012). *Recognizing public value*. Harvard University Press.

Nugroho, Antonius Sony Eko, Tjhin, Viany Utami, Kosasih, Wibowo, & Prabowo, Harjanto. (2022). BIBLIOMETRIC ANALYSIS OF RESEARCH TREND ON AGILE IT GOVERNANCE. *International Journal of Economics, Business and Accounting Research (IJEBAR)*, *6*(1), 65–79.

Rozas, Indri Sudanawati, Khalid, Khalid, Yalina, Nita, Wahyudi, Noor, & Rolliawati, Dwi. (2020). Digital Enterprise Architecture for Green SPBE in Indonesia. *CCIT (Creative Communication and Innovative Technology) Journal*, *15*(1), 24–26.

Sholihat, Nur Imroatun. (2018). The Implementation of COBIT 4.1 and COBIT 5-Based IT Governance Audits in the Ministry of Finance of Indonesia. *The Indonesian Journal of Accounting Research*, *21*(2).

Sipayung, Anugrahi Bawani, & Yunis, Roni. (2022). Evaluation Of Information Technology Governance at Mikroskil University Using COBIT 2019 Framework with BAI11 Domain. *International Journal of Research and Applied Technology (INJURATECH)*, *2*(2), 128–143.

Siregar, Sylvia Veronica, & Harahap, Siti Nurwahyuningsih. (2023). The effect of business uncertainty on IT governance. *Journal of Financial Reporting and Accounting*, *21*(2), 420–433.

Sutejo, Bayu Sulistiyanto Ipung, & Firmansyah, Gerry. (2022). Evaluation of SPBE Management Domain of Tangerang City Government Based on Regulation of the Minister of PAN-RB Number 59 of 2020. *First Mandalika International Multi-Conference on Science and Engineering 2022, MIMSE 2022 (Informatics and Computer Science)(MIMSE-IC-2022)*, 105–116. Atlantis Press.

Syuhada, Aldy Maulana. (2021). Kajian Perbandingan Cobit 5 dengan Cobit 2019 sebagai Framework Audit Tata Kelola Teknologi Informasi. *Syntax Literate; Jurnal Ilmiah Indonesia*, *6*(1), 30–39.

Turel, Ofir, Liu, Peng, & Bart, Chris. (2019). Is board IT governance a silver bullet? A capability complementarity and shaping view. *International Journal of Accounting Information Systems*, *33*, 32–46.

Wahyu, Sawali, & Firmansyah, Gerry. (2018). Sebuah Tinjauan Literatur Secara Sistematis Pada Enterprise Architecture Framework (EAF). *Konferensi Nasional Sistem Informasi (KNSI) 2018*.

Zhen, Jie, Xie, Zongxiao, & Dong, Kunxiang. (2021). Impact of IT governance mechanisms on organizational agility and the role of top management support and IT ambidexterity. *International Journal of Accounting Information Systems*, *40*, 100501.