



The Design of Indonesia e-Government (SPBE) Governance in Tangerang City

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Abstract. SPBE Governance is a framework that ensures the implementation of regulation, direction, and control in the integrated implementation of SPBE. This SPBE Governance aims to ensure that the 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 SPBE Services in order to achieve the objectives of the SPBE. In the implementation of all the elements of the SPBE, it is necessary to integrate and harmonize the National SPBE and the Regional SPBE, so that in this thesis research will be carried out the Governance of SPBE in Tangerang City. Based on the Decree of the Minister of State Apparatus Empowerment and Bureaucratic Reform of the Republic of Indonesia number 1503 of 2021 concerning “Electronic-Based Government System Evaluation Results at Ministries, Institutions, and Local Governments”, the Tangerang City Evaluation Result Report received a good predicate, by accepting an SPBE Index at 3.40 maturity level. To maintain this condition, even to improve it, some tips are needed, especially in the SPBE Governance domain, namely the SPBE Strategic Planning aspect, the application of Information and Communication Technology aspects, and the SPBE Organizer aspect. From the results of the evaluation, there are several assessments that are categorized as weaknesses, so it is necessary to take holistic steps so that they can be strengthened. Nevertheless, assessments that have been categorized as strengths must still be considered by taking strategic steps so that the implementation of Good Corporate Governance can be realized quickly, accurately, measurably, and sustainably.

Keywords: SPBE · governance · e-government · SPBE Index · Maturity Level

1 Introduction

By the issuance of Presidential Regulation Number 95 of 2018 concerning the Electronic-Based Government System (SPBE), every government administration agency is obliged to participate in the implementation of the policy. So far, ministries, agencies, and local governments have implemented SPBEs individually according to their capacities, and have achieved various levels of progress for SPBEs nationally. To build synergies in the implementation of SPBE that have legal force between ministries, institutions, and local governments, a National SPBE Master Plan is needed which is used as a guide for Central

Agencies and Local Governments to achieve an integrated SPBE. The National SPBE Master Plan is prepared to direct the development of policies, strategies, and initiatives in the field of SPBE governance, SPBE services, ICT, and human resources. It structures to achieve the strategic objectives of the SPBE in 2018–2025 and the development objectives of the state apparatus as stipulated in the National RPJP 2005–2025 and Grand Design for Bureaucratic Reform 2010–2025. The City of Tangerang as one of the regional governments established by law, needs to prepare itself to be able to participate in the implementation of the SPBE.

Along with the rapid development of technology, central agencies and local governments are required to adjust services according to the current technology. Public services are an important part of governance as an effort to fulfill the basic needs of citizens [1, 2]. Today public needs efficient, fast and easy services. In response to this problem, the government uses ICT to launch the public services through e-government implementation [3].

In facing today's global conditions, the use of ICT in governance is compulsory and has become a necessity. The use of ICT is the main supporter in digital government activities, both in government administration services and public services. The purpose of the issuance of Presidential Regulation (Perpres) Number 95 of 2018 concerning the Electronic-Based Government System (SPBE), which contains regulations regarding government administration that utilizes ICT to provide services to users. Various aspects of the regulation in the regulation are expected to be implemented effectively and efficiently, so that it is expected to be able to realize SPBE's vision, namely "The realization of an integrated and comprehensive electronic-based government system to achieve high-performing bureaucracy and public services".

Various applications of SPBE or known as Indonesia e-government (e-gov) or digital government have been produced by various Central and Regional Government Agencies (IPPD) to contribute to the efficiency and effectiveness of IPPD governance. However, the results of SPBE development and the level of maturity are still very diverse between IPPDs. This is reflected in the average achievement of the IPPD SPBE index value that reflects the maturity level of SPBE implementation in each IPPD which is still quite unequal.

The mandate of Presidential Regulation Number 95 of 2018 [6] contains the orders to organize and strengthen the organization and governance of an integrated electronic-based government system, both in central and local government agencies based on a framework that ensures the implementation of regulation, direction, and control in the application of SPBE.

Based on the vision and mission of SPBE, one of the objectives of SPBE is to realize clean, effective, efficient, transparent and accountable governance. Moreover, one of the SPBE targets is the realization of effective and efficient SPBE governance and management.

In addition, as mandated in Presidential Regulation Number 81 of 2010 concerning the Grand Design of Bureaucratic Reform 2010–2025, the policy direction for bureaucratic reform is development policy in the field of law and apparatus to improve good governance through strengthening the implementation of bureaucratic reform. This transformation of governance is essentially to realize Governance 4.0 by providing excellent



Fig. 1. SPBE Framework

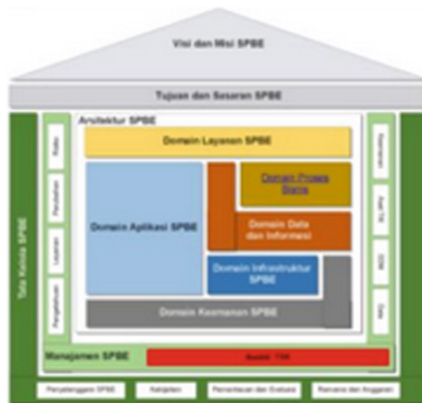


Fig. 2. SPBE Architecture

public services and creating a-world-class bureaucracy. To realize these two things, three pillars of transformation are needed. First, organizational transformation with a flexible and collaborative working mechanism. Second, the transformation of the work system by implementing the digitization of public services and digitizing internal business processes, or a digital-based governance through the application of the SPBE architecture. The third is the transformation of SPBE’s human resources with digital competence.

The three pillars above require an SPBE with the SPBE framework as shown in Fig. 1 and the SPBE architecture as shown in Fig. 2.

The SPBE framework consists of a Master Plan and the SPBE Architecture is a core part of the framework. In addition, the framework also consists of SPBE Governance that includes Plans & Budgets, Internal Business Processes, Data and Information on SPBE Applications running on SPBE Infrastructure using SPBE Security standards. Furthermore, the framework is also supported by an SPBE Management that includes Risk Management, Information Security Management, Data Management, ICT Asset Management, Service Management, Knowledge Management, Change Management, HR Management, and ICT Audit.

The SPBE architecture that acts as one of the core parts of the SPBE framework is a basic framework that describes the integration of business processes, data and information, SPBE infrastructure, SPBE applications, and SPBE security to produce integrated SPBE services. The Tangerang City government builds the Regional Government SPBE Architecture that is integral to the National SPBE Architecture to be applied in its regional government.

Strengthening the governance capacity and coordination management of the SPBE implementation is to build an integrated SPBE within and between Central Agencies and Regional Governments, in this case the Tangerang City government.

To realize an integrated SPBE, Central Agencies and Local Governments need to make basic and sustainable transformation efforts in the management and coordination system of SPBE implementation. SPBE integration is aimed at optimally utilizing SPBE resources and preventing duplication of initiatives and budgets in SPBE implementation.

The strategy to achieve strengthening of governance capacity and management of implementation coordination to build an integrated SPBE within and between Central Agencies and Regional Governments, the Tangerang City government undertakes;

1. The establishment and strengthening of the SPBE coordination team in Tangerang City;
2. The construction of the Tangerang City SPBE Architecture; and
3. The simplification of integrated business processes within the organization and between Central Agencies.

The comprehensive and integrated strengthening of SPBE policies is directed at involving all stakeholders in the formulation and implementation of SPBE policies that include macro policies, meso policies, and SPBE micro policies.

In formulating and implementing SPBE policies, the Tangerang City government should coordinate with the National SPBE Coordination Team to create an integrated SPBE policy, by;

1. Improve coordination between organizations and the community in the formulation and implementation of their regional SPBE policies;
2. Harmonize SPBE policies within the organization; and
3. Evaluate the implementation of the SPBE policy.

In 2020, the Ministry of Administrative Reform and Bureaucratic Reform issued the PANRB Ministerial Regulation Number 59 of 2020 that contains guidelines for evaluating the SPBE maturity level for the central government, state institutions and



Fig. 3. Structure of SPBE’s Capability Maturity Model Integration

local governments. This regulation uses guidelines according to the Capability Maturity Model Integration (CMMI) guidelines to assess the maturity level of process capabilities. In assessing the maturity level of service capabilities, the E-Government Maturity Model is used. The guidelines in this regulation consist of 4 Domains which are broken down into 8 Aspects, and are detailed in 47 indicators [8], as shown in Fig. 3.

Finally, the research in this thesis aims to provide a discourse in the form of SPBE Governance design in Tangerang City, so that all Governance Domains consisting of SPBE Strategic Planning Aspects, ICT Aspects, and SPBE Organizer Aspects can achieve an integrated and measurable level of maturity, even optimally, by evaluating and continual improvement and development.

2 Research Method

The research methods to be carried out are as follows:

2.1 Preparation of Initial Hypotheses

As a first step, an initial study will be carried out as input to get a sufficient picture of Tangerang City from an enterprise ontology perspective. The information extracted related to the formation of the organization, vision and mission, as well as the direction of the planned policy, provides a sufficient picture to know Tangerang City well.

Furthermore, as secondary data needed in this thesis, the following data and information are required:

- Regulations related to the duties and functions of the City of Tangerang;
- Tangerang City Organizational Structure;
- Tangerang City Development Plan (RPJMD, RKPD, and RPJPD);
- List of Services owned;
- List of Data and Information held;
- List of applications owned;
- List of Infrastructure owned;
- History of ICT Security Management; and
- Other related secondary data.

2.2 Primary Data Collection

After obtaining a sufficient description of the organization of the City of Tangerang, then the direction of the implementation of the next activity is obtained, namely verification of the initial hypothesis and data collection of existing resources in the City of Tangerang. Verification and data collection is needed to get the latest information on the conditions in the Tangerang City environment. Field visits and interviews will be required in this process. The results of primary data collection are in the form of a list of available resources in the Tangerang City environment and related to services and administration of Tangerang City government affairs.

2.3 Data Analysis

The list of resources collected in the primary data collection process will be the result for analyzing all aspects of the Governance domain.

2.4 Conclusion

The results of data analysis carried out will produce outputs in the form of conclusions and inputs for the City of Tangerang.

3 Research Questionnaire

The primary questions and data needed in this research are:

1. Has the SPBE Architecture and Roadmap been completed?
2. Has the SPBE Internal Policy been completed and implemented?
3. What is the value of the indicators in the SPBE Governance Domain of the Tangerang City Government in the 2021 Evaluation Results Report?

4 Research Staging

4.1 Study of Literature

Literature research is the initial stage by collecting information and knowledge relevant to this research. After the basic research concept is determined, the next step is to find the underlying theory and supporting theory that will be used as reference material. From the reference set obtained, it is used as library data. Library data collection is a research obligation to collect theoretical foundations, research hypotheses and frameworks of thought. The collection of literature from scientific publications, journals, government regulations, and maturity level models relevant to the SPBE assessment is carried out at this stage as the basis for research theory.

4.2 Preparation of Evaluation Instruments

The tool used is based on the SPBE assessment guidelines contained in the PANRB Ministerial Regulation [8], with a focus on the SPBE Governance Domain which consists of 3 Aspects and 10 Indicators.

4.3 Data Collection

According to the SPBE assessment guidelines in Regulation of PAN-RB No. 59 of 2020, with research data collection that carries out:

1. The interview process, the data collection process is carried out by asking questions or questionnaires to respondents to get answers based on the questions asked.
2. Implementation of visitation, data collection in this process by making observations and visits to the respondent's Regional Apparatus Organizations (OPD) for the validation process after the interview.
3. Business Process Description
The description of the business processes in the OPD is adjusted to the indicators contained in the SPBE evaluation guidelines. The business processes are then grouped according to the indicators in the SPBE Governance Domain.

5 Research Instruments

Research instruments are important things that need to be prepared in order to obtain information that is in accordance with the objectives of conducting research. This study uses an SPBE evaluation instrument that is guided by the PAN-RB Ministerial Regulation [8], which focuses on the SPBE Governance Domain, which consists of 3 Aspects and 10 Indicators, namely.

5.1 SPBE Strategic Planning Aspect

- Indicator 11: IPPD SPBE Architectural Maturity
- Indicator 12: Maturity of IPPD SPBE Roadmap
- Indicator 13: Maturity of SPBE Plan and Budget
- Indicator 14: Maturity of SPBE Business Process Innovation.

5.2 Information and Communication Technology Aspect

- Indicator 15: Maturity of SPBE Application Development
- Indicator 16: Maturity of Data Center Services
- Indicator 17: Maturity of Intra IPPD Network Services
- Indicator 18: Maturity of IPPD Service Relations System.

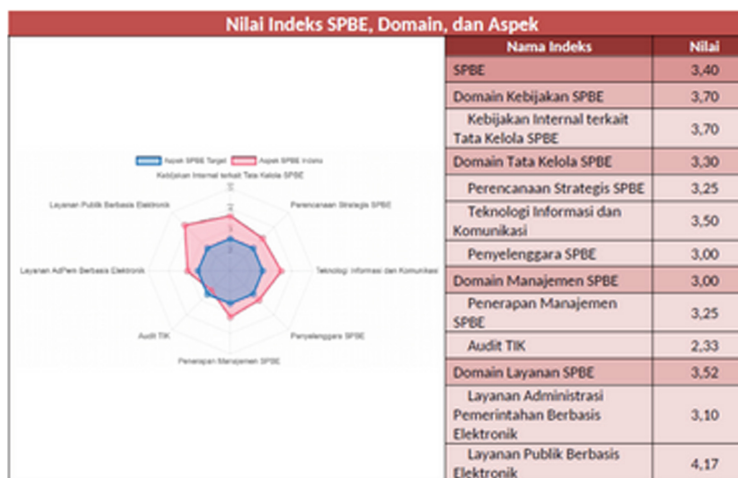


Fig. 4. Index SPBE Value

5.3 Aspects of SPBE Operators

- Indicator 19: Maturity of the IPPD SPBE Coordination Team
- Indicator 20: Maturity of SPBE Implementation Collaboration.

To prepare this research instrument, it is necessary to collect data in the form of related supporting evidence, such as documents, links/web addresses, screenshots, logs, and/or minutes/notes/reports/evidence of meeting invitations. All supporting evidence data is grouped based on the criteria and conditions for each indicator, so that the fulfillment of integrated & structured criteria and optimal sustainability can be achieved.

The Report of SPBE Evaluation on Tangerang City year 2021, the Governance Domain value result as shown in Fig. 4.

6 Feedback

From the data and research instruments on the SPBE Governance of the Tangerang City government, a draft of the SPBE Governance is produced that can be implemented in the Tangerang City organization, and can also be used as an SPBE Evaluation Report in the coming year.

6.1 SPBE Strategic Planning Aspect

- Indicator 11: Maturity of IPPD SPBE Architecture.

The condition that must be prepared is the availability of the Tangerang City SPBE Architecture document, which has been guided by the National SPBE Architecture and has been reviewed and evaluated.

The supporting evidence that must be completed is a formalized SPBE Architecture document that contains and describes all references to the SPBE architecture and the SPBE Architecture domain. As well as documentation of the completeness of supporting the implementation of the review and evaluation where the SPBE Architecture is also updated as a follow-up to the results of the review and evaluation.

The example of supporting evidence is the document that results from filling out 6 (six) domains of SPBE architecture metadata on the Abacus application which contains completely all references to the National SPBE Architecture. In addition, it is also necessary to prepare minutes/notes/reviews/reports of evaluation results, as well as evidence of invitations for review meetings and evaluation of documents/documentation of review activities and document evaluation.

- Indicator 12: Maturity of IPPD SPBE Roadmap.

The condition that must be prepared is the availability of the Tangerang City SPBE Roadmap document which has been consistently applied through the work plan and budget for the last 3 (three) years. The SPBE monitoring and evaluation team has reviewed and evaluated all the related documents and produced a list of evaluation report. Moreover, all apparatus of Tangerang City SPBE team has to update the documents as the continual activity of the evaluation report of the roadmap.

The examples of supporting evidence are Budget Work Plans (RKA) / Budget Implementation Documents (DPA) that are appropriate/ related to programs and activities in the SPBE Roadmap, minutes/ notes/ study/ evaluation results reports, as well as evidence of invitations for review meetings and evaluation of documents/documentation document review and evaluation activities.

- Indicator 13: Maturity of SPBE Plan and Budget.

The condition that must be prepared is that all Tangerang City SPBE plans and budgets have been integrated and can be controlled by regional work units/devices that carry out planning and budgeting functions, and have been reviewed and evaluated. Furthermore, a revised SPBE plan and budget for the following year was also prepared based on the results of the review.

The examples of supporting evidence are the Budget Work Plan (RKA)/Budget Implementation Documents (DPA) which have been integrated and controlled by the Planning Bureau/Bappeda, the availability of SOPs for preparing SPBE budgets, the existence of minutes/notes/study/evaluation reports, and evidence of meeting invitations. The review and evaluation of documents/documentation of review and evaluation of documents, list of RKA/DPA changes related to SPBE.

- Indicator 14: Maturity of SPBE Business Process Innovation.

The condition that must be prepared is the availability of Business Processes that have been implemented into the electronic system, and reviews and evaluations have been carried out. Furthermore, it is also prepared to make improvements to Business Process innovations that are applied to the electronic system as a follow-up to the results of the review.

The examples of supporting evidence are Business Process model documents that are applied to the electronic system, the availability of minutes/notes/study/evaluation reports, as well as evidence of invitations to review meetings and evaluation of documents/documentation of review activities and document evaluation.

6.2 Information and Communication Technology Aspect

- **Indicator 15: Maturity of SPBE Application Development.**

The condition that must be prepared is the availability of an integrated IPPD SPBE Application Development that can be controlled by the work unit/regional apparatus that carries out the ICT management function, and reviews and evaluations have been carried out, besides that it has also been optimally developed to improve efficiency and effectiveness.

The example of supporting evidence is a sectoral SPBE application development document developed by a unit that carries out ICT functions, which is equipped with screenshots, videos, or other documentation showing feature additions, security enhancements, error fixes, etc. In addition, there are also activity documentation/minutes/notes/study/reports on the discussion results of SPBE Application development/invitation to evaluation meeting for SPBE Application development, as well as evidence of invitations for review meetings and document evaluation/documentation of review activities and document evaluation.

- **Indicator 16: Maturity of Data Center Services.**

The conditions that must be prepared are the availability of interconnection of Data Center Services with other National Data Centers/IPPD Data Centers and or the use of National Data Centers, and the use of Data Center Services in IPPD has been evaluated. Furthermore, the results of the evaluation of the use of the Data Center Services have been followed up with improvements to the Data Center Services.

The examples of supporting evidence are the availability of SOPs for using Data Centers, screenshots of Data Center service interconnection/configuration, proof of VPS server utilization on PDNS, logs, application letters, utilization of PDNS, etc. In addition, there is documentation of Data Center Services that have been improved either through service improvements, development of Data Center interconnection, etc. Other supporting evidence is the minutes/notes/reviews/reports of evaluation results, as well as evidence of invitations for review meetings and document evaluation/documentation of review activities and document evaluation.

- **Indicator 17: Maturity of Intra IPPD Network Services.**

The condition that must be prepared is that there is an interconnection of the Intra IPPD Network service with the Tangerang City Intra Government Network and or other Intra IPPD Networks where the Intra IPPD Network Services have been evaluated, and followed up by making improvements to the services.

The examples of supporting evidence are documentation in the form of pictures/screenshots/ etc. that describe the conditions before and after the increase/repair of the intra- IPPD's network topology implementation. Also minutes/notes/study/reports on evaluation results and recommendations for follow-up, as well as evidence of invitations to evaluation meetings for the improvement of IPPD Intra Network services/documentation of evaluation and improvement activities.

- **Indicator 18: Maturity of the Linking System.**

The condition that must be prepared is the availability of the IPPD Service Liaison System that has been integrated with the Government Service Liaison System/ other IPPD Service Liaison System where the IPPD Service Liaison System has been evaluated, and followed up by making improvements.

The example of supporting evidence is the documentation of the SPL configuration description that has been connected to the SPLP and/or has been connected to another IPPD SPL. In addition, the minutes/notes/reports of the evaluation results, as well as evidence of the invitation to the evaluation meeting for the operation of the IPPD service liaison system and/or documentation of the evaluation of the operation of the IPPD service liaison system.

6.3 Aspects of SPBE Operators

- Indicator 19: Maturity of the IPPD SPBE Coordination Team.

The condition that must be prepared is the task/work program of the Tangerang City SPBE Coordination Team, which has been communicated/coordinated to all work units/regional apparatuses where the tasks/work programs of the IPPD SPBE Coordination Team have been reviewed and evaluated, and followed up by making improvements.

The examples of supporting evidence are photos/videos etc., related to the coordination of the implementation of the tasks/work programs of the SPBE Coordination Team with all work units/regional apparatuses. In addition, official notes, invitations, socialization, meeting materials, and so on, as well as minutes/notes/reports on the results of reviews and evaluations.

- Indicator 20: Maturity of SPBE Implementation Collaboration.

The condition that must be prepared is collaboration between work units / regional apparatus that has been implemented in all work units / regional apparatus where the collaboration in the implementation of the SPBE has been reviewed and evaluated, and followed up by making improvements to the implementation of collaboration.

The examples of supporting evidence are the Decree of the Mayor of Tangerang on the Implementation of One Data in the Tangerang City government, as well as documents for developing the scope of collaboration, strengthening tasks and functions in teams, etc.

7 Conclusion

From the results of the 2021 Evaluation Report by the Ministry of PANRB, Tangerang City received several recommendations, as follows;

1. The role of the coordination team formed has not made a real contribution to the implementation of SPBE, so the work program of the Tangerang City Government SPBE Coordination Team has not been communicated/coordinated to all relevant work units/regional apparatus in the Tangerang City Government.
2. The tasks/work programs of the Tangerang City Government SPBE Coordination Team have not yet been reviewed and evaluated.

Thus, the conclusion of the results of this study, the points included in the recommendations need to be reviewed, evaluated, and followed up with improvements to

be implemented optimally and continuously. Meanwhile, the points that have become strengths must still be maintained by always carrying out reviews, evaluations, and follow-up improvements in their implementation.–

References

1. Y. Yusriadi., U. Farida.: Bureaucracy Performance in Public Services in Indonesia. *J. Ad'ministrare* 6(1), p. 17 (2019).
2. N. Nuriyanto.: Penyelenggaraan Pelayanan Publik Di Indonesia, Sudahkah Berlandaskan Konsep 'Welfare State'?. *J. Konstitusi* 11(3), pp. 428–453 (2014).
3. M. Silalahi, D. Napitupulu., G. Patria.: Kajian Konsep dan Kondisi E- Government di Indonesia. *Tekno. Inf. dan Komun* 1(1), pp. 10–16 (2015).
4. Instruksi Presiden Republik Indonesia nomor 3 tahun 2003 tentang Kebijakan Dan Strategi Nasional Pengembangan E-Government.
5. E. E. Supriyanto.: Kebijakan Inovasi Teknologi Informasi (IT) Melalui Program Elektronik Government dalam Meningkatkan Kualitas Pelayanan Publik di Indonesia.
6. Peraturan Presiden Republik Indonesia nomor 95 tahun 2018 tentang Sistem Pemerintahan Berbasis Elektronik. Kementerian Sekretariat Negara Republik Indonesia, Jakarta.
7. Peraturan Menteri Pendayagunaan Aparatur Negara dan Reformasi Birokrasi Republik Indonesia nomor 5 tahun 2018 tentang Pedoman Evaluasi Sistem Pemerintahan Berbasis Elektronik.
8. Peraturan Menteri Pendayagunaan Aparatur Negara Dan Reformasi Birokrasi Republik Indonesia nomor 59 tahun 2020 tentang Pemantauan Dan Evaluasi Sistem Pemerintahan Berbasis Elektronik. Kementerian Pendayagunaan Aparatur Negara Dan Reformasi Birokrasi Republik Indonesia, Jakarta.
9. I. M. Sukarsa., I. B. A. Paramartha., A. A. K. A. Cahyawan., K. S. Wibawa., P. G. A. S. Yasa., N. M. S. Wulanyani., N. W. Wisswani.: Evaluation of E-Government Maturity Models in Sub-District Public Services in Indonesia Using the SPBE Framework.
10. M. R. Y. Saputra., W. W. Winarno., Henderi.: Evaluasi Tingkat Kematangan SPBE di Disperindag Kabupaten Banjar Menggunakan CMMI Dev. Versi 1.3. *Indones. J. Bus. Intell.* 3(1), pp. 14–19 (2020).
11. Evaluasi Implementasi Sistem Pemerintahan Berbasis Elektronik (SPBE) Pemerintah Kabupaten Lumajang Menggunakan Peraturan Menteri PAN-RB Nomor 5 Tahun 2018 Tentang Pedoman Evaluasi SPBE, <http://repository.unej.ac.id/handle/123456789/97914>, last accessed on 2021/10/17.
12. R. Bayu Bayu Sulistiyanto Ipung Sutejo: Evaluasi Domain Manajemen SPBE Pemerintah Kota Tangerang Berdasarkan Peraturan Menteri PANRB Nomor 59 Tahun 2020.

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