



Evaluation of SPBE Management Domain of Tangerang City Government Based on Regulation of the Minister of PAN-RB Number 59 of 2020

Bayu Sulistiyanto Ipung Sutejo^(✉) and Gerry Firmansyah^{ID}

Master of Computer Science Study Program, Esa Unggul University, Jakarta, Indonesia
r.bayoesutejo@gmail.com, gerry@esaunggul.ac.id

Abstract. To maintain the quality of electronic services to be fast, efficient, and convenient, the government has issued Ministerial Regulation PAN-RB Number 59 of 2020 concerning Guidelines for Evaluation of the Implementation of the Electronic-Based Government System (SPBE). There is one new domain in the SPBE implementation evaluation guideline, namely the SPBE Management Domain when compared to the previous SPBE management guidelines, namely the PANRB Ministerial Regulation Number 5 of 2018. If the SPBE Management Domain index is not known, it means that the level of SPBE Management Domain implementation cannot be measured, resulting in difficulties in planning the implementation of SPBE in the future. The effect is that the implementation of the SPBE does not go according to plan or there is even a failure in the implementation of the SPBE. This study aims to determine the maturity level of the SPBE Management Domain in Tangerang City Government through the assessment of SPBE Management Implementation Aspects and ICT Audit Aspects. Assessment of indicators is done through interviews, questions, answers, and supporting evidence. Based on the index value of these aspects, it can be determined the index value of the SPBE Management Domain is then linked to the SPBE assessment predicate table to determine the implementation predicate of the SPBE Management Domain. The results showed that the SPBE Management Domain index was 3.40. The Tangerang City Government still has several aspects with standard maturity, especially in the aspects of SPBE Operator, SPBE Management Implementation and Administrative Services Electronic-Based Government. One very clear indicator is in Team Maturity Level SPBE Coordination Agency SPBE organizer. The role of the coordination team formed has not made a real contribution to the implementation of the SPBE, so the work program of the SPBE Coordination Team of the Tangerang City Government has not appeared to be communicated/coordinated to all relevant work units/regional apparatus in the Tangerang City Government. In addition, the tasks/work programs of the Tangerang City Government SPBE Coordination Team have not been reviewed and evaluated.

Keywords: SPBE · Evaluation · Electronic Public Services · E-Government · Maturity Level

1 Introduction

Along with the rapid development of technology, the government is required to adjust services according to the current state of technology. Public services are an important part of governance as an effort to fulfill the basic needs of citizens [1, 2]. Today's public wants services that are efficient, fast and easy. In response to this problem, the government uses information and communication technology to promote public services through e-government policies [3].

The strategy for developing and implementing e-government has been determined nationally through Presidential Instruction No. 3 of 2003. This regulation contains considerations that by implementing e-government there will be an increase in effectiveness and efficiency in government in order to create good governance [4]. The government through e-government can interact and disseminate information not only to the public, but also to central government institutions and local governments [5].

In 2018, the government enacted a Presidential Regulation of the Republic of Indonesia [6] which contains orders to administer the Electronic-Based Government System (SPBE) that runs in state institutions, the central government and local governments. The purpose of this is to determine the level of implementation of SPBE in state institutions and local governments. Local governments and state institutions are expected to run SPBE using information and communication technology and SPBE infrastructure. The SPBE infrastructure itself consists of software, hardware, and all kinds of system support facilities in order to create good governance [6]. The PANRB Ministry has issued SPBE evaluation guidelines in 2018 through the PANRB Ministerial Regulation No. 5 of 2018 which contains 3 domain, 7 aspects and 35 indicators [7]. However, this regulation was later revoked because there are several mandates of the presidential regulation that have not been contained in it. In 2020, the Ministry of State Apparatus Empowerment and Bureaucratic Reform then issued the PANRB Ministerial Regulation Number 59 of 2020 which contained guidelines for evaluating the SPBE maturity level for the central government, state institutions and 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 contain 47 indicators, 4 domains, and 8 aspects [8]. What is different from the previous guidelines is that there is one new domain, namely SPBE Management Domain. This domain was not in the previous evaluation guidelines. The results of the evaluation of the maturity level of the SPBE implementation are in the form of an index value that shows the maturity level of SPBE implementation from state institutions or local governments.

Research on how SPBE evaluation indicators are applied to public services at the sub-district level that has used the District Integrated Administrative Service (PATEN) system has been carried out [9]. This study uses SPBE evaluation guidelines in accordance with Presidential Regulation [6]. From this research, it can be concluded that in PATEN services there are still many indicators that have not been met when using SPBE evaluation guidelines on electronic services for the public at the sub-district level.

Another study regarding the evaluation of the maturity level of SPBE is a study to assess the maturity of the application of SPBE in the Department of Industry and Trade (Disperindag) Banjar Regency [10]. This research uses CMMI Dev. 1.3 to assess the level

of e-government performance in Banjar Regency in the SPBE Service Domain using a questionnaire to predetermined respondents. The result is the Disperindag of Banjar Regency at level 1 information level where SPBE services use one-way information.

Research on the level of SPBE implementation in the Lumajang Regency Government [11] using the guidelines for the Regulation of the Minister of PAN-RB [7] are carried out in the SPBE Policy Domain, SPBE Governance Domain and SPBE Service Domain. The results obtained are that the Lumajang Regency Government gets an index value of 2.85 which is included in the “GOOD” predicate for the level of SPBE application.

Research [12] on the Sumbawa Besar District Government to evaluate the level of e-government implementation using the SPBE framework based on the PAN-RB Ministerial Regulation Number 5 of 2018 obtained the results in the form of a “GOOD” predicate with an average index value of 2.80 on the following indicators. The indicator. This study focuses on the SPBE Service Domain using a descriptive qualitative research methodology. Data collection was obtained through interviews and observations with the Sumbawa Besar Regency Government.

Research on the application of the SPBE maturity level was also conducted at the Sukamandi Training Center for Apparatus Education and Training [13]. The evaluation guide chosen in this study is based on the PAN-RB Ministerial Regulation Number 5 of 2018. The results obtained are the SPBE index of 1.85 indicating the predicate “ENOUGH”. It can be concluded from this research that the implementation of SPBE in BDA Sukamandi has not been implemented properly. BDA Sukamandi has not yet prepared a master plan for the implementation of SPBE. The intended improvement is in the public service sector. Research using the E-Government Maturity Model framework was carried out at the Gorontalo City Government [14]. This study uses 35 indicators, 3 domains, and 7 aspects of SPBE. This study obtained an SPBE index of 2.88 so that it was included in the “GOOD” category. It can be concluded that the implementation of SPBE in Gorontalo City is going well. A similar evaluation was also carried out by Wildan [15], using instruments from the guidelines of the PAN-RB Ministerial Regulation Number 5 of 2018 at the Situbondo Regency Government. The result of this study is that Situbondo Regency has an SPBE index of 2.79 so it is included in the “GOOD” category.

Research on the application of SPBE [16] was conducted at the Kuningan District Government. The purpose of this study is to optimize SPBE services for business processes and applications in the Kuningan Regency Government, namely designing SPBE enterprise architecture in the service domain by adopting a combined framework of TOGAF ADM architecture and SPBE architecture, resulting in several outputs in 3 stages, namely the initial stage, architectural vision and service architecture. The results of this study are in the form of a Service Catalog Government Administration and Business Process Matrix that can improve the quality of internal services of the Kuningan Regency Government.

Based on the background explanation, there is an update of the SPBE maturity level assessment methodology, the emergence of SPBE Management Domain. The unknown value of the SPBE Management Domain maturity index means that it is not possible to measure the level of implementation of SPBE management in local governments in the dothe main, making it difficult to plan the implementation of SPBE in the future.

This can result in the SPBE process not running smoothly, or a more fatal impact is the failure of SPBE to be applied to local governments. This study aims to determine the maturity of the SPBE implementation in the SPBE Management Domain of the Tangerang City Government by measuring the value of the SPBE index. By knowing the value of the SPBE index in the SPBE Management Domain, it is hoped that the level of SPBE implementation in the Tangerang City Government, especially in the SPBE Management Domain, is already running so that planning and improvements can be made so that the SPBE implementation can run well in the future.

2 Research Method

This research is descriptive quantitative research. To collect data with the aim of helping to complete the determination of the SPBE evaluation assessment at the Tangerang City Government, the authors use interviews, observation and document evaluation. Purposive sampling method was used to select samples to fill out the questionnaire. The selected sample is people who are directly related to the things in the SPBE evaluation assessment criteria, namely the section heads and heads of fields as well as SPBE operators at the Office of Communication and Information Technology of the Tangerang City Government.

To calculate the maturity index value of the SPBE application in the SPBE Management Domain, use the guidelines contained in the PAN-RB Ministerial Regulation Number 59 of 2020.

3 Research Question

The research questions of this study are:

1. What is the value of the indicators in the SPBE Management Domain of the Tangerang City Government?
2. What is the value of the maturity level index of the Aspects of the SPBE Management Domain at the Tangerang City Government?
3. What is the maturity level index of SPBE Management Domain in Tangerang City Government?
4. How is SPBE Implementation in Tangerang City in SPBE Management Domain?

4 Research Stage

The stages of this research are shown in Fig. 1.

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

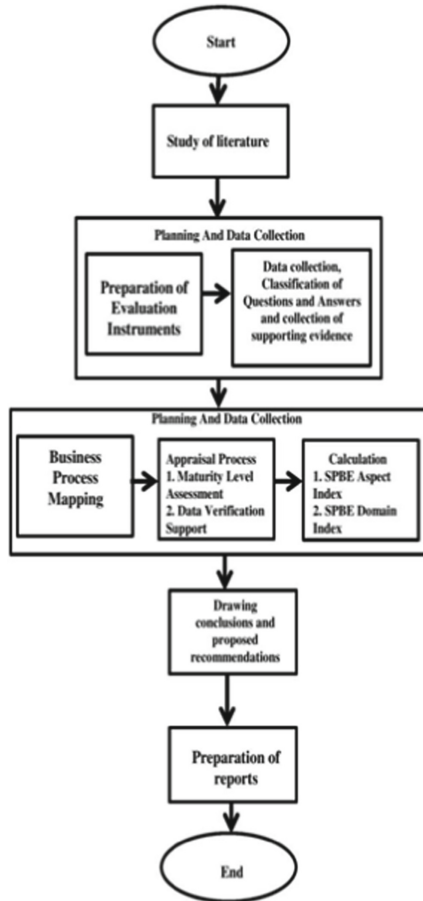


Fig. 1. Research stages.

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

To obtain information that is in accordance with the research objectives, it is necessary to prepare research tools. The tool used is based on the SPBE assessment guidelines contained in the Ministerial Regulation PAN-RB [8], with a focus on the SPBE Management Domain which consists of 2 aspects and 11 indicators.

4.3 Data Collection

Data collection is carried out through a question-and-answer process and visitation to obtain data that will be used in the SPBE maturity level assessment process. According to the SPBE assessment guidelines in Permen PAN-RB No. 59 of 2020, research data collection is carried out by:

1. Interview Process, the process of collecting data is done by asking questions or questionnaires to respondents to get answers based on the questions asked.
2. Implementation of visitation, collecting data in this process by observing and visiting the respondent's Regional Apparatus Organization (OPD) for the validation process after the interview.

4.4 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 Management Domain.

4.5 Maturity Level Assessment and Verification of Supporting Data

The assessment process is carried out on the SPBE Management Domain indicators after the interview and visitation process is complete. The process capability maturity level criteria consist of a scale of 1 to 5.

4.6 SPBE Aspect and Domain Index Calculation

The calculation of the aspect and domain index values in the SPBE Management Domain is carried out after all indicators in the domain are given a maturity level value and are based on the equations that have been determined in the SPBE evaluation guidelines.

4.7 Drawing Conclusions and Proposed Recommendations

Recommendations and conclusions are drawn up after the index of the SPBE Management Domain is known. Thus, the conditions for implementing the SPBE can be known so that recommendations can be made in the form of improvement areas that will be followed up by the OPD to improve the implementation of the SPBE.

5 Evaluation Instrument

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 Management Domain which consists of 2 Aspects and 11 Indicators as shown in Fig. 2.

Domain 3 SPBE Management
SPBE Management
Aspect 5- Implementation of SPBE Management
Indicator 21 Maturity Level of SPBE Risk Management Implementation
Indicator 22 Maturity Level of Information Security Management Implementation 5
Indicator 23 Maturity Level of Data Management Implementation
Indicator 24 Maturity Level of ICT Asset Management Application
Indicator 25 Maturity Level of Human Resource Competency Implementation
Indicator 26 Maturity Level of Knowledge Management Application
Indicator 27 Maturity Level of Change Management Implementation
Indicator 28 Maturity Level of SPBE Service Management Implementation
Aspect 6- Implementation of ICT Audit
Indicator 29 Maturity Level of SPBE Infrastructure Audit Implementation
Indicator 30 Maturity Level of SPBE Application Audit Implementation
Indicator 31 Maturity Level of SPBE Security Audit Implementation

Fig. 2. SPBE management domain evaluation instrument.

6 Calculation of SPBE Aspect Index Value

The Aspect Index value represents the maturity of state or local government institutions in implementing certain aspects of the SPBE. The aspect index value is obtained from the total value of all indicators multiplied by the total value of the aspect weight as in Eq. (1).

$$Indeks\ Aspek_i = \frac{1}{BA_i} \sum_{j=m}^n NI_{ij} \times BI_{ij} \tag{1}$$

- Indeks Aspek_i* nilai dari indeks urutan ke-*i*.
- BA_i* bobot aspek urutan ke-*i*.
- NI_{ij}* nilai kematangan indicator ke-*j* di aspek ke-*i*.

7 SPBE Domain Index Value Calculation

The SPBE domain index value is a value that describes the maturity level of the SPBE application in a particular domain. The calculation of the SPBE domain index value uses Eq. (2).

$$Indeks\ Domain_i = \frac{1}{BD_i} \sum_{j=m}^n NA_{ij} \times BA_{ij} \tag{2}$$

Table 1. SPBE Assessment Predicate.

No.	Predicate Index	Value
1.	4.2–5.0	Satisfactory
2.	3.5–<4.2	Very Good
3.	2.6–<3.5	Good
4.	1.8–<2.6	Enough
5.	<1.8	Less

Indeks Domain_i nilai dari indeks urutan ke-*i*.

BDi bobot domain urutan ke-*i*.

NA_{ij} nilai aspek urutan ke-*j* di domain urutan ke-*i*.

BA_{ij} bobot aspek urutsn ke-*j* dalam domain urutan ke-*i*.

8 SPBE Assessment Predicate

After getting the SPBE index value, the value can be interpreted into a predicate that has been determined according to the SPBE evaluation guidelines [8]. Details of SPBE scores and predicates can be seen in Table 1.

9 Results and Discussion

From the research on the implementation of the SPBE Management Domain in the Tangerang City Government, the indicator values were obtained in accordance with the SPBE evaluation instrument in the PAN-RB Ministerial Regulation Number 59 of 2020 which can then be calculated the index value of the SPBE Management Implementation. Aspect and the ICT Audit Implementation Aspect. From the results of the index values of the two aspects, the SPBE Management Domain index value can be calculated.

From Table 2, it can be seen that the SPBE Management Implementation Aspect has an index value of 3.25 This is due to several indicators with low scores, namely indicator 26 with a value of 2, indicator 21, indicator 23, indicator 24, indicator 25, indicator 27 with a value of 3 and indicator 28 by 4.

10 Aspect 6: Implementation of Ict Audits

Aspects of the Implementation of the ICT Audit consist of 3 indicators. The value and weight of the indicators on the aspects of ICT audit implementation can be seen in Table 3.

Table 2. SPBE Management Implementation Aspect.

Indicator Value	Value Indicator (NI)	Indicator Weight (BI) (%)	NI × BI (%)
Indicator 21	3	1.5	4.5
Indicator 22	5	1.5	7.5
Indicator 23	3	1.5	4.5
Indicator 24	3	1.5	4.5
Indicator 25	3	1.5	4.5
Indicator 26	2	1.5	3
Indicator 27	3	1.5	4.5
Indicator 28	4	1.5	6
Aspect Weight (BA)		12	
Total (NI × BI)			39
SPBE 5 Aspect Index			3.25

Table 3. Value of Aspect 5 Index of ICT Audit Implementation.

Indicator Value	Value Indicator (NI)	Indicator Weight (BI) (%)	NI × BI (%)
Indicator 29	2	1.5	3
Indicator 30	2	1.5	3
Indicator 31	3	1.5	4.5
Aspect Weight (BA)		4.5	
Total (NI × BI)			10.5
SPBE 5 Aspect Index			2.3

11 SPBE Management Domain

SPBE Management Domain consists of 2 aspects. After knowing the index value of the two aspects, the index value for the SPBE Management Domain can be calculated. The calculation of the index value of the SPBE Management Domain can be seen in Table 4.

In Table 4 it can be seen that the SPBE Management Domain index value is 3.0. This value is included in the good category when compared to the maximum value of 5. The reason is the low value of Aspects. This shows that the implementation of SPBE management in the Tangerang City Government has not run optimally. There is still a lot of room for improvement in the implementation of SPBE management.

Table 4. SPBE Management Domain Index Value

Aspect	Aspect Index (NA)	Aspect Weight (BA)%	Value NA × BA %
Aspect 5	3.25	12	39
Aspect 6	2.3	4.5	10.35
Domain Weight (BD)		16.5	
Total (NA × BA)			49.35
SPBE Management Domain Index			3

12 SPBE Management Application

Some of the applications in the SPBE Management Implementation Aspect have been fulfilled by the City of Tangerang with some evidence of the ISMS Risk Management Policies and Procedures and the decision of the Tangerang City DPRD No 171/036-DPRD/2019.

12.1 Strength

In this aspect, most of the indicators are at standard maturity, so there is no visible strength that exist in this aspect of SPBE Management Implementation, but related to Maturity Level Implementation of Information Security Management is a strength in this aspect.

12.2 Weakness

In this aspect, most of the indicators are at standard maturity, so it doesn't look too bad in this SPBE Management Implementation aspect. However, regarding the Maturity Level of Knowledge Management Implementation, this aspect is weak in the Tangerang City Government.

13 Conclusion

Based on the results of the SPBE evaluation of the SPBE Management Domain in the Tangerang City Government, the results obtained in the form of an index value of the maturity level of Aspect 5 of the Implementation of SPBE Management at the Tangerang City Government, which is 3.0, the index value of the maturity level of Aspect 6 of ICT Audit Implementation is 2.3 and the index value of the maturity level of SPBE Management Domain is of 3.0 so that it is included in the "good" predicate. For the implementation of SPBE management to be more efficient and effective, corrective action is needed, especially for indicators with low scores, namely Indicator 21, Indicator 23, Indicator 24, Indicator 25, Indicator 26, Indicator 27, Indicator 28, Indicator 29, Indicator 30, and Indicator 31. In principle, the implementation of internal policies, governance, and SPBE services will encourage an increase in the implementation of SPBE in Tangerang

City. As for the results of the SPBE evaluation that has been carried out on the City of Tangerang, it has been able to describe the predicate with a superior index in the application of SPBE, as there are several advantages and disadvantages. In the implementation of SPBE owned by Tangerang City, there are five aspects that have strong maturity, namely the implementation of Internal Policies related to SPBE Governance, SPBE Strategic Planning, Information and Communication Technology, ICT Audit and aspects of Electronic-Based Public Services. Among the aspects with strong maturity are Electronic-Based Public Services. This advantage can be seen from the existence of various public services based on master plans, development and various service application innovations for the public. But on the other hand, the Tangerang City government still has several aspects with standard maturity, especially in the aspects of SPBE Operator, SPBE Management Implementation and Electronic-Based Government Administration Services. One very clear indicator is in the Maturity Level of the SPBE Coordination Team. The role of the coordination team formed has not made a real contribution to the implementation of the SPBE, so the work program of the SPBE Coordination Team of the Tangerang City Government has not appeared to be communicated/coordinated to all relevant work units/regional apparatus in the Tangerang City Government. In addition, the tasks/work programs of the Tangerang City Government SPBE Coordination Team have not been reviewed and evaluated. In the presentation and reporting carried out by the Tangerang City government, the enthusiasm and efforts that have been made are very visible. The legal basis that has been instilled shows the directions and policies that have supported the planning, implementation and evaluation of SPBE. Likewise, various public services have also been sought and evaluated.

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