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Challenges of Implementing an Electronic-Based Government System in Local Governments

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Abstract.

Digital transformation is a necessity not an option. Local government is encouraged to develop information technology that generates applications to help overcome the problems of society as part of digital transformation. However, since the release of the presidential decree No. 95/2018, there are still many problems in the application of the Electronic-Based Government System (SPBE). This paper focused on identifying the challenges faced by local governments in implementing SPBE. Qualitative research methods were used. Data were collected through interviews with informants in the local government of Wonogiri and by document analysis. The results indicated that there are still many challenges in implementing SPBE in terms of structure, infrastructure and superstructure. The challenges included regional topography, facilities, infrastructure, human resources, digitization and policies. The most important factor was the existence of regional policies related to the smart city masterplan that supported the digitization of activities that make it easier for the society so that people feel comfortable, safe, and prosperous.

Keywords: electronic-based government system, local government, challenge

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1. Introduction

The development of global technology is forcing national conditions to change in terms of social, economic, cultural and governance life. At this time the government is faced with the "forced" migration of all public services using technology. Indonesia has realized the need for digital governance since 2013. The central government and local governments are competing to create digital services for the community. Until 2017, many applications overlap and are not interoperable with one another. There is no good cooperation, nor collaboration between services. In 2018, the idea of one data, one door application and the like was started to reduce the rate of similar applications.

Every year starting in 2018 an evaluation of the Electronic-Based Government System (SPBE) is determined. This evaluation was conducted to evaluate the implementation

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of e-government at the local government level. Of course, it is also literate for local governments about special applications for local governments. In Java, the average SPBE evaluation results showed good results.
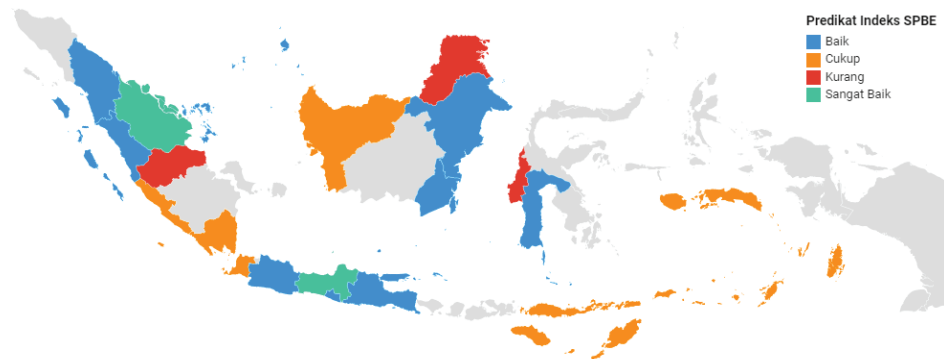

Figure 1: National SPBE Value Map in 2020.

Based on the 2019 SPBE evaluation, Central Java Province received an SPBE index of 3.85 and was included in the very good category [1]. Central Java is the only province that gets the very good predicate. One of these predicate is the SPBE index from the regional government in Central Java. However, not all local governments in Central Java have good SPBE index. One of the districts that has not had a good SPBE index is Wonogiri Regency [1].

Wonogiri Regency in 2019 only entered the predicate enough with an SPBE index value of 2.51 [1]. The achievement of the Wonogiri SPBE index is still included in the low predicate. It is necessary to improve the implementation of SPBE at the government level of Wonogiri Regency. Since the results of the 2019 SPBE index came out, the Wonogiri Regency government has been determined to focus on digital development. Wonogiri Regency seeks improvements in sectors that implement SPBE elements.
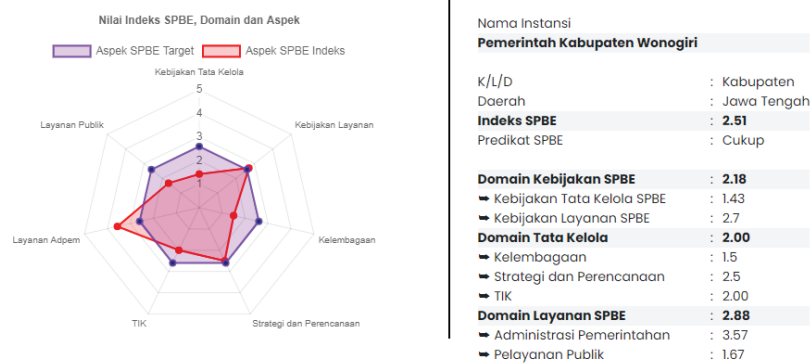

Figure 2: Wonogiri Regency SPBE Value in 2019. (Source: (Kementerian Pendayagunaan Aparatur Negara dan Reformasi Birokrasi, 2020)).

In the 2020 Regional Competitiveness Index, the Regency's final score is assessed to cover 4 main aspects, namely the reinforcing environment, human resources, markets and innovation ecosystems, generally having the "MEDIUM" category. Of the 216 districts above, 1 district has a score in the "Very High" category (3.76 - 5), 66 districts have a score in the "High" category (2.51 - 3.75), 71 districts have a score with the " Medium" (1.26 - 2.5) and a total of 78 districts with the category of "Low" (0 - 1.25) The ten districts with the best score sequence are Wonogiri District (3.9179), Kendal District (3.7486), Badung Regency (3.6945), Bogor Regency (3.6715), Semarang Regency (3.6468), Pekalongan Regency (3.6125), Pati Regency (3.6118), Temanggung Regency (3.5529), Banyumas Regency (3.5333), Karanganyar Regency (3.4271)[2]. For the Regional Government at the Regency level, only 1 Regency has a score with the "Very High" category, namely Wonogiri Regency, Furthermore, as many as 16% have a score in the "High" category, 17% have a score in the "Medium" category, 19% have a score in the "Medium" category. Low". There are 200 (two hundred) District Governments that have not mapped the Regional Competitiveness Index [2].

If looks at the references sourced from research on same topic on SPBE, researchers have not found any research results that discuss the challenges of implementing SPBE. The existing research is the relationship between the SPBE index value and local revenue/PAD [3]; Evaluation of SPBE implementation [4] ; readiness of actors in e-government [5]; assessing readiness for the public sector [6]; more about digital transformation in organizations [7,8] both public and private [9] ; leadership in digital transformation [10]. The topic of the challenges of e-government implementation is still very limited, especially at the local government level. Thus, this paper focuses on identifying the challenges of implementing SPBE at the local government level, especially in Wonogiri Regency.

2. Literature Review

2.1. Electronic-Based Government System

Electronic-Based Government System or SPBE as an enabler of digital transformation [11]. The Electronic-Based Government System (SPBE) is a government administration that utilizes information and communication technology to provide services to SPBE users. The aim is to realize clean, effective, transparent and accountable governance; realizing quality and reliable public services; improve the integration and efficiency of SPBE implementation. The SPBE is led by a national SPBE coordination team which has

the task of coordinating and implementing SPBE policies at central and local government agencies.

2.2. Digital Governance

The world bank defines Digital governance or e-Governance can be defined as the use of information and communication technology by the government to provide the quality information and services to citizens, businesses, voluntary organizations, and other government agencies in an efficient, cost-effective, and convenient manner and to bring transparency, accountability in government functioning to strengthen democracy [12]. Digital governance includes services and processes in any between: Government to government (G2G), Government to person (G2P), and Government to Business (G2B).

The greatest challenge for governments is to meet these new expectations. Governments are adapting public service delivery, policy making, engagement and collaboration approaches to the digital age [13]. New digitally enabled approaches, supported by the necessary changes in the public sector culture, need to be implemented if governments are to successfully meet citizens' and businesses' needs and demands. Ultimately, a transformed public governance should produce outcomes that best meet user needs.
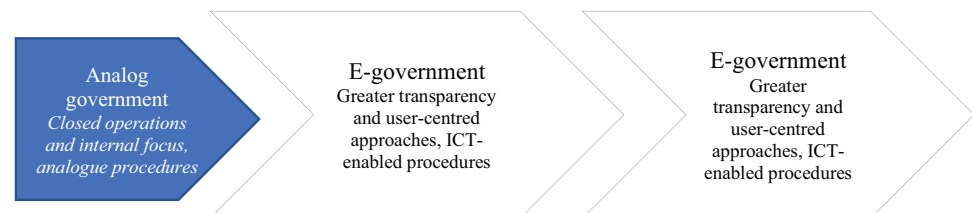

Figure 3: Progession towards the digital transformation of goverments. (Source: Based on OECD).

In Indonesia, digital transformation is marked by the shift of public services to digital services. In fact, every year, the central government has audited the Electronic-Based Government System (SPBE) since 2016. Previously, to assess the e-readiness of digitalization of local governments, there were many models developed. The ereadiness model provides measurement results that can be taken into consideration by decision makers to choose what policies are appropriate and improvements that must be made to increase e-readiness [15]. In Indonesia, a similar assessment has also been carried out through the Indonesian eGovernment Rating (PeGI), but since 2016 this assessment has not been carried out anymore and has been replaced with an Electronic-Based Government System (SPBE) index, but the SPBE index focuses more on assessing maturity levels.

Nugroho adopted and modified the STOPE concept (strategy, technology, organization, people environment plus budgeting to analyze the readiness for e-government implementation [16]. Researchers adopted the elements of structure, infrastructure [17] superstructure, and environment [18] to identify the challenges when implementing e-government.

3. Method

This type of research is a type of qualitative research. The researcher raised this theme starting from the SPBE evaluation phenomenon which every year began to be actively evaluated. The evaluation began in 2019. Researchers collected data from direct interviews with the head of the communication and informatics office of Wonogiri Regency, the head of the Information and Encryption Division of the Wonogiri Regency Communication and Information Office, and the national SPBE Audit Supervisor. The number of informants is 3 (three) informants with the determination of informants based on purposive techniques. Researchers appointed informants who have knowledge and competence and are in accordance with the field in the implementation of SPBE at the Wonogiri Regency Government level. After the interview data has been obtained, it is then processed and analyzed. The analysis uses qualitative data analysis techniques [19]. The stages of analyzing qualitative data are (1) classifying primary data, namely the results of interviews are grouped based on environmental readiness, structural readiness, infrastructure readiness, and superstructure readiness; (2) identify unpreparedness per dimension; (3) analyzing the challenges of implementing SPBE in terms of unpreparedness per dimension, both environmental, structure, infrastructure, and superstructure dimensions.

4. Results and Discussion

The implementation of SPBE can be seen in 4 (four) dimensions, namely the implementation in terms of environmental dimensions, structural dimensions, infrastructure dimensions, and superstructure dimensions. First, the environmental dimension analysis includes geographical conditions, topographic conditions, climatological conditions, land use conditions, potential conditions for regional development, and conditions of disaster-prone areas. These conditions affect the implementation of SPBE.

Wonogiri Regency is a regency in the southern region of Central Java Province with an area of 190,432 Ha or 5.85% of the total area of Central Java Province. Wonogiri

Regency is divided into 25 sub-districts consisting of 251 villages and 43 sub-districts, as well as 2,306 hamlets/neighborhoods. The topography of Wonogiri Regency is mostly hilly, with 20% of the area consisting of limestone hills, especially those in the southern region of Wonogiri Regency. This makes it difficult to access the internet or many blank areas. On the other hand, Wonogiri Regency has a tropical climate with 2 seasons, namely the rainy season and the dry season which alternate throughout the year. Even though there is a rainy season, the drought lasts longer. So that Wonogiri Regency is more prone to disasters in landslides and droughts. SPBE programs are more about providing internet and realizing a system that can minimize drought in Wonogiri Regency.

Second, dimensional analysis of the structure. The sub-dimensions analyzed are the analysis of the quality of human resources in the region, the analysis of the quality of human resources in the Wonogiri district government, and the analysis of regional financial capacity. Human resources in the area related to the number of ICT communities are in good condition, where there are MGMP Community, KKG, Education and Learning Content Development Team, Regional Coordinator Creative Team, Sub District Creative Team, Digital School Piloting. There are two digital startups in the area, namely Go Sukses and Regar Sport. There are also 5 (five) universities. Wonogiri Regency encourages 600 students to get scholarships and then they can contribute to the Wonogiri area.

However, in terms of employee human resources, there are still limited human resources with an ICT education background, only 1.28% [20]. For the ownership of a laptop/computer for work, the majority use a personal laptop. There is no available SOP on government data protection yet. Even though this SOP is important in today's digital era. A lot of digital data is misused. Meanwhile, in digital applications, there are still many applications that are not yet interoperable, so many applications stand alone.

Wonogiri district's financial capacity is still limited. The percentage of Regional Original Income Value to Total Regional Revenue still reaches 12.06%. Wonogiri Regency is still very dependent on funding from the central government. The limited PAD makes the SPBE budget also limited. The allocation for SPBE awaits from the central finance. In order to increase the 2020 SPBE index, the budget for SPBE increased with details of internet spending of IDR 1,305,114,000, application program spending of IDR 367,745,000, and computer capital expenditure of IDR 7,461,054,500 for a total of IDR 9,420,802,000 [21].

Alternative funding for e-governance programs can be through CSR. However, in Wonogiri, the CSR track record has not been recorded in the system. Wonogiri Regency

can collaborate with CSR in Wonogiri to implement SPBE. In 2021, there will be 133 CSR programs from Bank Jateng worth Rp. 8,455,000,000.

Third, analysis of infrastructure dimensions. The sub-dimensions analyzed are analysis of physical infrastructure, analysis of digital infrastructure, and analysis of Social infrastructure. A total of 70.71% of the total length of the road is in good condition. Completeness of the road such as signage is still not entirely there. Meanwhile, digital infrastructure is still limited where 4G networks still cover 26-50%. In the health sector, out of 9 hospitals, only 6 hospitals are connected to an electronic/online service system. The digital infrastructure of Wonogiri Regency is in good condition including the availability of wireless for the public, almost 100% of residents have been covered by electricity except for 1 village because access to electricity facilities is difficult; power outages are rare; and almost all private and public schools have internet access.

While social infrastructure, the availability of public open space in the RW; community hall; sports facilities; and public libraries. Social infrastructure that is still not maximized is the library and reading park at the village level. This community learning activity center already exists but is not accessible due to the lack of care and maintenance.

Fourth, the analysis of the superstructure includes analysis of regional policies, analysis of regional institutions, and analysis of regional community organizations. Wonogiri Regency has issued a Regent's Regulation on the Smart City Council and a Regional Head's Regulation on the Regional Smart City Implementation Team. Smart city policies that do not yet exist are the smart city master plan; local regulations (Perda) Smart City; A development vision that is in line with the vision of the RPJMD; ensuring the sustainability of the smart city program; and a mechanism for evaluating and appreciating the performance of the apparatus and organizations that excel in implementing the smart city program. However, there is no regional smart city SOP yet.

Based on the analysis of the conditions of SPBE implementation, it can be seen the challenges in implementing SPBE in Wonogiri Regency. The challenges are divided by dimension are as follows. The challenge in the environmental dimension is that the topography of Wonogiri Regency is hilly and wide so that there are blankspot areas in villages that have no hills.

The challenges of the structural dimension include (1) the low level of human resources in the programming field; (2) limited ICT volunteers; (3) each employee's laptop/computer; (4) there is no SOP on government data protection; (5) virtual offices and online work are still a difficult thing to do; (6) the percentage of the value of local revenue to total regional income is low (12.06%); (7) Last Year's Budget Financing Surplus Value (SILPA) was high; (8) SCR has not been systematically recorded even

though there are many factories and private companies. On the other hand, the Human Resources aspect of Wonogiri in my national competitiveness index report was ranked first (Kemenristek & Brin, 2020). There are two regions that are classified into regions with very high competitiveness category. The two regions that have a score above 3.76 are Karanganyar Regency (4,1042) and Wonogiri Regency (3.8333) (Kemenristek & Brin, 2020). When viewed from the competitiveness of human resources, the people of Wonogiri can compete with other regions. This shows that technological change can actually be adopted quickly if given to the Wonogiri community. So it can be interpreted that the Wonogiri community can quickly adapt to technological changes.

The challenges of the physical infrastructure dimension include (1) the lack of analytical cctv cameras, only 1 (one) camera at the crossroads; (2) lack of medical equipment so that people are still limited in accessing health needs, not yet integrated health information systems and other information systems. There are only 6 hospitals that are connected to the online service system (66%). (3) The facilities for the 4G/3G network area are still limited. But on the other hand, road conditions throughout Wonogiri Regency are in good condition.

The challenges of the superstructure dimension include regional policy challenges, regional institutional challenges, and regional community organization challenges. The challenges of the superstructure dimensions include (1) the absence of a regional smart city master plan; (2) there is no integrated policy on e-government. However, in fact the implementation of SPBE carried out by central and regional agencies does not yet have the spirit of integration [21].

5. Conclusions

The 2020 SPBE index for Wonogiri Regency reached 2.79. The SPBE index of Wonogiri Regency is included in the sufficient category. The Wonogiri SPBE index shows that there are still many challenges in regional conditions that can be turned into opportunities and then overcome with the right strategy so that the Wonogiri SPBE index can continue to advance.

The challenges in conducting SPBE in Wonogiri Regency include the challenges of the environmental dimension, namely the challenges of the topography of Wonogiri in the form of hills and 25 sub-districts spread over a large area.

The challenges of the structural dimension include (1) limited human resources in the field of programmers; (2) limited ICT volunteers; (3) most of the laptops/computers for work are privately owned; (4) there is no SOP on government data protection; (5) virtual

offices and online work are still a difficult thing to do; (6) the percentage of the value of local revenue to total regional income is low (12.06%); (7) Last Year's Budget Financing Surplus Value (SILPA) was high; and (8) SCR has not been systematically recorded.

The challenges of the infrastructure dimension include (1) the lack of analytical CCTV cameras, (2) the unintegrated health information system and other information systems. There are only 6 hospitals that are connected to the online service system (66%). (3) The facilities for the 4G/3G network area are still limited.

The challenges of the superstructure dimension include (1) the absence of a regional smart city master plan; (2) there is no integrated policy on SPBE.

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