

The Readiness of Disadvantaged Regions in Implementing E-Government in Indonesia: Case Study in East Seram Regency

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Received: August 30, 2020

Revised : October 19, 2020

Accepted: December 18, 2020

Available Online: December 25, 2020

Abstract

The East Seram Regency is a disadvantaged region in Indonesia with many sub-districts that do not have access to internet and electricity. The remaining options for sub-districts was hindered because it is limited by wilderness and free oceans and the APBD (Regional Revenue and Expenditure Budget) in this regency is also limited. Although, the implementation of e-Government by the Regent are willing to follow the mandate of Presidential Regulation No. 95 of 2018 concerning Electronic-Based Government Systems (SPBE). The purpose of this study was to analyze and determine the readiness of the East Seram Regency in implementing the e-government system in Indonesia. This study used a mixture of qualitative and quantitative methods and data collection technique was also carried out by using a questionnaire for 76 respondents, in-depth interviews for 7 informants, and documentation. The result showed the quality of public human resources and civil servants in the field of communication and the informatics are low. Also, the ICT infrastructure such as internet, servers, networks, and

DOI: <https://doi.org/10.33701/jtp.v12i2.1285>

computer equipment are inadequate. The East Seram Regency is a disadvantaged region that prioritizes physical development infrastructure rather than allocating a high budget for the information technology tools. Therefore, it is concluded that the East Seram Regency as one of the disadvantaged region in Indonesia whose Local Government is 'Not Ready' to implement an e-government system as mandated by Presidential Regulation No. 95 of 2018.

Keywords: *Readiness Disadvantaged Regions Government; Electronic-Based Government Systems; SPBE; e-government; e-readiness*

Abstrak

Kabupaten Seram Bagian Timur merupakan daerah tertinggal. Banyak kecamatan tidak memiliki akses internet dan listrik. Alternatif antar kecamatan terhambat karena dibatasi oleh hutan belantara dan lautan bebas. Selain itu, APBD-nya juga terbatas. Meskipun demikian tingginya kemauan Bupati untuk menerapkan e-Government sesuai dengan amanat Peraturan Presiden Nomor 95 tahun 2018 tentang Sistem Pemerintahan Berbasis Elektronik (SPBE). Tujuan penelitian ini adalah untuk menganalisis dan mengetahui kesiapan Pemerintah Kabupaten Seram Bagian Timur dalam penerapan e-Government. Penelitian ini menggunakan metode campuran kualitatif dan kuantitatif. Teknik pengumpulan data dilakukan dengan angket (76 responden), wawancara mendalam (7 informan), dan dokumentasi. Temuan penelitiannya bahwa kualitas SDM masyarakat dan ASN yang membidangi komunikasi dan informatika masih rendah. Infastruktur ICT berupa internet, server, jaringan, dan Perangkat komputer masih belum memadai. SBT sebagai daerah tertinggal lebih mengutamakan infrastruktur pembangunan fisik ketimbang harus mengalokasikan anggaran yang tinggi untuk pengembangan perangkat teknologi informasi. Oleh karena itu kesimpulan dari penelitian ini adalah sebagai salah satu daerah tertinggal di Indonesia, Pemerintah Kabupaten Seram Bagian Timur 'Belum Siap' menerapkan sistem e government sesuai amanat Peraturan Presiden Nomor 95 tahun 2018.

Kata Kunci: *Kesiapan Pemerintah Daerah Tertinggal; Sistem Pemerintahan Berbasis Elektronik; SPBE; e-government; e-readiness*

INTRODUCTION

The global world is currently entering the digitalization era which means that the world is converting from analog to digital and experts call it the era of the industrial revolution (Suwardana, 2017). This was unable to stop in all lines of life that the Indonesian government are now willing to have a digital transformation in the public service sector. This digital transformation is the government's obligation to improve service and efficiency (Alsaad et al., 2018; Gong et al., 2020; Santoro et al., 2019). It also help them to provide better communication and public services (Norris & Reddick, 2013); Nugraha, 2018). These changes form a clean and transparent government, shorten the lines of decision-making, and also expand the range of control (Christofi et al., 2018; Hendra Kusuma, 2019; Mursitama, 2012). The E-Government system allow the availability of resident's to work together for urban management (Silva & Fernandes, 2020).

Therefore, one of the government's efforts to have a digital transformation in the public service sector is by issuing Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems (SPBE). Through this issuance, every agency both central and regional is expected to implement an e-government system in carrying out

the wheels of government and public services 2020.

The Local Government of East Seram Regency make efforts by issuing the legal umbrella of Regent Regulation Number 20 of 2018 concerning the Road Map for Information and Communication Technology Development. Also, the Regional Secretary form the SPBE development acceleration team during this year. The team conduct an assessment of e-Government readiness that includes financial factors like electronic and infrastructure facilities, communication technology innovation, etc (Glyptis et al., 2020). The digital transformation factors include Artificial Intelligence, Cloud Technologies, and the Internet of Things (Limani et al., 2019) and it also related to the elements of a smart city. These elements include technology (hardware and software infrastructure), human resources (creativity, diversity, education), and institutions (governance, policy) (Nam & Pardo, 2011). Also, this internal readiness was carried out to address the existing weaknesses (Nento et al., 2017).

The main point that East Seram Regency is a disadvantaged region in Maluku Province (JDIH, 2020) with many sub-districts that do not have access to internet (Kabartimurnews, 2019) and electricity (CNN Indonesia, 2020). However, infrastructure availability is a major

problem in this application. Although, following Budi et al's research that "The highest correlation between e-government and government 2.0 is the infrastructure dimension" (Budi et al., 2020). Therefore, this technology infrastructure tends to be a link to the service sector.

The sub-district free will are also hindered by the wilderness, damaged road conditions (Kompas.com, 2019), and the sub-district boundaries are open seas (East Seram Regency Government, 2010). Another problem is the APBD (Regional Revenue and Expenditure Budget) of East Seram Regency is about 1.59 trillion in 2019 (Kompastimur.com, 2020). Furthermore, the covid-19 pandemic and preparation for the 2020 election had caused network infrastructure development to become lower. However, the willingness of the leadership element is very strong to carry out the mandate of the Presidential Decree No.95 of 2018. This is an opportunity for the implementation of e-government in a disadvantaged region. Information and communication technology in remote regions also provide benefits in increasing access, speeding up work implementation and not requiring many employees, as well as improving the service quality.

There are several research for the readiness of a disadvantaged

region in implementing e-government. According to Waheduzzaman, the e-government implementation in Bangladesh did not run smoothly due to the bureaucratic attitude of the officials who do not wish to participate in government performance (Waheduzzaman, 2013). Putri and Darmawan's research (2018) found that the Kepri (Riau Islands) Smart Province that was being implemented are not ready in all factors such as technological, human, and institutional factors (Putri & Darmawan, 2018). Subsequently, Nento et al stated that the e-readiness of the Provincial Government of Gorontalo is measured by using a socio-technical approach that prioritizes regional indicator studies (Nento et al., 2017). Likewise, Damanik and Purwaningsih found that the Mandailing Natal Regency Government had not yet reached the highest limit but utilized ICT in the government work process. Based on the infrastructure side, internet networks in OPD (Regional Apparatus Organization) use telephone cables with slow speeds. Also, the human resources makes the general respondents to have the operational capability of ICT devices but do not understand technical matters. Meanwhile, the governance aspect did not have a legal framework as an operational basis and planning for future

development. This study also found several obstacles in implementing e-government system and formulated recommendations for corrective measures. (Damanik & Purwaningsih, 2018). Further research by Muqhita and Handayaningsih stated that the residents was ready to participate in the system implementation and change towards E-Government. However, the tools availability and the need for making two mobile phones are not ready (Muqhita & Handayaningsih, 2013).

This study is different from the previous in measuring the readiness of implementing e-government in a disadvantaged and remote regions, namely the East Seram Regency. The measurement indicator was carried out by combining the measurements from various experts (Glyptis et al., 2020; Kovačić, 2005; Limani et al., 2019; Musa, 2010; Putri & Darmawan, 2018). The Four key indicators are human resources, ICT infrastructure, budget, and laws and regulations to analyze and determine the readiness of implementing e-government in Eastern Seram Regency.

METHOD

This study focused in East Seram Regency (SBT) as a disadvantaged region in Maluku Province. This used a Convergent Parallel Mixed Method and data was analyzed through a joint display, that presents both

qualitative and quantitative data groups (Sugiyono, 2013). In this method, Creswell explains that both the qualitative and quantitative data are collected at the same time, analyze separately, and compare the results to know whether the findings are complementary or not (Creswell John W., 2018). In collecting qualitative data, in-depth interviews were conducted with (7) seven informants (Sekda/Regional Secretary, Deputy Chairman of the Regional Parliament etc). Quantitative data collection was carried out by distributing questionnaires to 26 civil servants in charge of informatics services in SBT and 50 residents from various circles. This is done in order to measure an indicator that is related to the readiness of human resources in implementing e-government. The analysis continues to use data reduction procedures adapted to the case study model (Creswell, 2018).

RESULT AND DISCUSSION

East Seram is one of the sixty-two disadvantaged regions in Indonesia based on the Presidential Regulation of No. 63 of 2020 concerning the Designation of Disadvantaged Regions in 2020-2024 (JDIH, 2020). Through the Presidential Regulation No. 95 of 2018 concerning Electronic-Based Government Systems (SPBE), all regions are required to implement

an e-government system by 2020. In this study, 4 (four) key indicators was conducted on the readiness of this regency in implementing e-government. They include human resources, ICT infrastructure, budget, and laws and regulations.

A. Human Resource

Human resources is a key indicator in implementing e-government policies (Ministry of Communication and Information, 2017). Consequently, this implementation needs to be supported by adequate human resources to achieve the goals. Civil Servant's knowledge and skills need to be considered in the HR indicator. The total number of servants in charge of Communication and Informatics are 26 and none of them have an IT background. Ideally, there are at least 8 (eight) people that have informatics educational backgrounds. They are responsible in managing data, servers and content (Head of the Ministry of Communication and Information, 2020), but this has not been implemented in the East Seram Regency Government. Therefore, this shows the weakness of human resources in the IT sector in East Seram Regency.

Human resources development is provided through formal and non-formal education such as education and training, as well as computer courses. Through this, they are

expected to master and understand the use of information technology. Based on the interview with Head of Office's that the "Training and competency development on information technology and competence are rare". Also, the Regional Secretary belief that "Competency development training is rare, and the employees expect that government manage their own systems without any assistance from third parties ". It was concluded that the Local Government of East Seram Regency are not ready to pay attention to the development of human resources in the IT sector.

A simple measurement from the observations was carried out to strengthen the analysis on the computer mastery skills of IT employees. It showed that out of 26 civil servants, only 10 or around 38.4% master the application office and they were accustomed to using information systems such as e-planning. This percentage is classified in low level because it has not reached half number of IT servants that are familiar with management information systems and its work culture that relies on one or two servants. This indicates that civil servants in SBT are also not ready to implement e-government system.

Furthermore, a survey against 50 residents from various circles was conducted. The result showed that only 14 of them or about 28% were

accustomed to using computers, Androids and had generally used service management information systems (outside the SBT service application). This strengthens the statement that the SBT residents also not ready to use electronic-based services.

B. Information, Communication, Technology (ICT) Infrastructure

The implementation of e-government are determined by the support of infrastructure technology such as computer devices, internet networks, and others. The results found that the ICT infrastructure was not the best and this is seen when Head of the Office belief that "Many LAN network connections are lost, we usually use Wi-Fi networks of the 40 OPDs only half have internet access". The bandwidth provided that access to internet which is up to 20 Mbps are used for one OPD, and some were even less. Based on the interview results with the Head of ICT Office, "The internet network was connected to several points through the indihome network, but many OPDs do not have internet access". The internet tends not to be accessed if there are blackouts and the SBT condition as an archipelago area are prone to internet disruptions caused by natural disasters such as earthquakes. Based on the interview results, it was concluded that the network is inadequate and

experiencing difficulties in the connectivity process to the internet.

An observation on the Wi-Fi network at Diskominfo (Information and technology communication office) was also conducted. Many PCs and devices are connected to one Wi-Fi point with a very low bandwidth capacity and was the same in other OPDs. This condition causes internet access speed to be slower, especially during working hours, including PCs in the service section. Furthermore, the observation was also made in the sub-district area and the result shows that it was only in Bula that have access to indihome network out of the 15 sub-districts.

Furthermore, it has documented a cellular network provider and provided services at SBT, namely Telkomsel. Other providers such as XL, Indosat, 3, and so on have not yet entered this region. The Telkomsel network internet access tends to be accessed in West Bula and Bula, while the other sub-districts are unable to have access to it because the 4G network is not yet available.

As an effort to increase network access in other sub-districts, several providers have built 30 towers in various areas including the sub-districts of Werinama, Kilmur, Gorom Island, etc (Eastern Seram Diskominfo, 2020). In total, 4 (four) towers have 4G network specifications and this shows an

increase in network tower capacity located in SBT.

PC availability is also a benchmark for ICT support facilities and computer units are available in the workspace of each field, but not for each employee. Another important is the server and it does not belong to the local government, but rather hosting a compatible provider. This reduces the problem of inaccessible servers considering the unstable network conditions in SBT and frequent cutouts of electricity access. Besides, the existing information systems to support the e-government implementation include the information technology managed by BAPPEDA, the Health Office, and the Local Government Website by the Secretariat. Generally, the conditions are up to date, accessible and used easily with the exception of local government websites that the content is not up to date and less informative.

C. Budget

Based on the results, the allocation of the expenditure budget for the ICT sector is one of the toughest challenges in implementing e-government at SBT. Based on the interview done with the Head of office, they receive 200 million for implementing e-government in 2020, namely for website development. This budget is very small when compared to other funds

and it is caused by the plan to move the capital to the Hunimua Plain as well as the simultaneous regional head elections in 2020.

The work programs related to the e-government implementation have been running since 2019, including the servers procurement as data storage and applications. The current condition is that the server are activated with various balances and constraints. Meanwhile, website maintenance are limited to an annual routine for making the local government websites to be accessed by the public. Also, it has not yet reached the integration stage of the applications that have been used in SBT. Furthermore, making applications and increasing the existing internet bandwidth capacity in 2020 are not carried out due to changes in the budget intended for the prevention and control of the Covid 19 pandemic in this regency.

The ICT development blueprint has not been created due to inadequate budget allocations. In fact, this development document is a matter that has to be considered by the Local Government as the basis for e-government development in SBT. Furthermore, budget allocations for developing human resource capacity in the IT sector needs to be prioritized considering the absence of Civil Servants with an IT background. Likewise, technology infrastructure

and other supporting facilities have not been prioritized for implementation.

D. Legal Protection

The legal basis for implementing e-government is the East Seram Regent Regulation Number 20 of 2018 concerning the Road Map for Information and Communication Technology (ICT) Development. The local regulation only regulates ICT development in general, therefore, the technical guidance regulates in detail the implementation model and e-government system in Indonesia. For example, a blueprint for application integration of each OPD, plans for the requirement in the public service process, the Regulation concerning the Mid-Term Development Plan (RPJM) in 2015-2020 etc. They were all relevant to the system implementation in the East Seram Regency. Accordingly, it was concluded that the indicators for the implementation of e-government from the perspective of legal protection were adequate. It only needs development planning and technical documents for further implementation of e-government system.

Decision making supports were needed to realize e-government and one of them was that receives input from various parties for the advancement of this system implementation. The finding was that top leaders were pro towards

the e-government implementation in SBT. They have not been able to be properly captured by OPD leaders like research by Waheduzzaman and Miah (Waheduzzaman & Miah, 2015). The next finding was that the Ministry of Communication and Information along with other OPDs are not ready to implement e-government as seen from the human resources, ICT infrastructure, and budget. They are almost the same as the research of Putri and Darmawan's that regards the unpreparedness of technological, institutional and human factors in running the Kepri Smart Province (Putri & Darmawan, 2018). Likewise, Damanik and Purwaningsi's research stated infrastructure as a barrier. However, it is slightly different because this study did not find legal protection from obstacles such as in Damanik and Purwaningsi's own (Damanik & Purwaningsih, 2018). It was also found that the resident's skills in computer operation were low and expectations of the local government were quite high. Muqhita and Handayani stated that there are limitations of village residents in owning smartphones to support the e-government implementation (Muqhita & Handayaningsih, 2013).

CONCLUSION

The conclusion is that the East Seram Local Government are "Not Ready" to implement an e-

Government system. This is mainly due to the unpreparedness of Human Resources, both civil servants and users, in SBT. The readiness of ICT infrastructure are far from ideal and also contributes to the success of e-government implementation in this regency. It is closely related that a disadvantaged region will prioritize physical development infrastructure to meet their basic needs, rather than allocating a high budget for information technology. This study proves that Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems are not automatically applied. This is seen in all regions in Indonesia especially the disadvantaged and remoted regions such as SBT Regency. Therefore, it suggests that this system implementation are carried out in stages and becomes a priority in the Regional Long-Term Development Plan.

The weakness of this study is that it focused more on only one disadvantaged region without looking at the conditions in others. Therefore, it is suggested that a similar study should be carried out in other disadvantaged regions to find deeper results and different conditions related to the readiness to implement e-government.

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