



Challenges of Indonesia Digitalization Government in Disruptive Era

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Abstract. This research is aimed at examining the challenges faced by the Government of Indonesia to digitizing government and public services in Indonesia. This study uses a qualitative method with a descriptive approach. The data source for this research comes from secondary data taken from official government data, related institutions, online mass media news, and previous research with relevant themes. The results of this study found that in transforming public services and government has several challenges such as inequality in people's digital literacy, uneven penetration of internet networks, the quality of e-government features that need to be improved, and high cybercrime that disrupts data security and privacy of e-government itself. The problem of bureaucratic management is also an urgent problem because currently the bureaucracy in Indonesia is dominated by generation X, who difficult to adapting digital uses.

Keywords: Bureaucracy Digital Skill, Digitalization Government, Disruptive Era

1 INTRODUCTION

In recent years, technological advances have been used as a forum for integrated community interaction [1]. Ease of access to digital technology triggers the public service sector to use it [2]. The use of digital technology in public services is believed to be more effective, accurate, and efficient in providing services [3].[4] also added that the use of digital technology in services or what is commonly called smart government is considered effective in the process of public service transactions. Therefore, government agencies are competing in implementing digital technology adoption in their services.

Coupled with the demands of the community to provide responsive, fast, and precise public services (menpan.go.id, 2021). The government as the organizer of public services should be able to upgrade its capacity to provide excellent service to the community, which affects public trust in the government (ombudsman.go.id, 2021). Seeing

the dynamic development of society, the government needs to transform its services based on digital services to facilitate access, time and service costs (Saputra, M., 2022). Digital involvement in government is outlined in Presidential Instruction 3/2003 concerning E-Government which then initiated the formation of the ITE Law 11/2008 and Presidential Decree 95/2018 concerning the administration of electronic-based government to improve efficiency, effectiveness, accountability, and transparency of services.

However, until now Indonesia's E-Government Index is still in cluster 3 of 4 clusters which classify 193 countries [5]. Bureaucratic HR is the main capital in digitizing services as a driving force for the service itself. The bureaucracy is required to adapt as implemented by the private sector which places quality performance in the main aspects of HR management [6]. The use of digital in the government sector will also increase the effectiveness of the performance of Bureaucratic HR with a small number of employees who can complete work in a short time [7].

On the other hand, the bureaucracy in Indonesia is still fully able to adapt to the culture of fast work, because it is used to being bureaucratic. Bureaucracy has not been fully implemented digitally to improve service systems [8]. As the Ministry of Home Affairs describes the problems of bureaucratic HR in the digitalization era, namely limited competence, commitment, and collaboration/coordination [9]. Problems with bureaucratic human resources are also found in the gap in ASN composition which is dominated by generation X which is a generation that is not yet IT literate. [10] found that the composition of ASN over the age of 35 was 83.65%, while the composition of ASN under 35 years was only 16.35%. This gap is one of the problems in efforts to digitize the bureaucracy because the existing bureaucratic components cannot adapt to technology.

The Indonesian government also has homework in providing metadata between ministries, institutions, and local governments to build integrated information and services [11]. Government digitalization is also related to the urgency of equal distribution of internet use for all Indonesian people. Even though the percentage of internet users in Indonesia will increase to 73% of the total population in 2021, 41.7% of users come from the island of Java [12]. This inequality triggers the suboptimal digital services provided because there is no inclusiveness in accessing them. Some of these problems have become a separate dilemma for the Government of Indonesia. Seeing this problem, the writer is interested in examining what problems are the dilemmas to digitizing the government in Indonesia.

2 RESEARCH METHOD

This study uses a qualitative method with a descriptive approach. The choice of this method is motivated by the purpose of this research to examine the challenges faced by the Indonesian government in digitizing its government in a disruptive era. It is hoped that the use of qualitative methods can help issues raised in depth through analysis of the findings data [13]. This research is based on secondary data taken from previous research with relevant themes, online mass media news, and official data from the government and other institutions.



Fig. 1. Analyst Data Process

Data analysis techniques in this study used interactive model techniques, including data reduction, data display and conclusion making [14]. Data reduction is done through grouping data based on the indicators used in the theory in this study. Data display is done by presenting the findings data through pictures, graphs and tables. While drawing conclusions is the final result of findings and data analysis

3 RESULTS AND DISCUSSION

Based on previous research mapping, it appears that one of the topics that is rarely discussed in Human Resources Management in Indonesia is human capital, which means that HR is the main capital in the running of an organization, including government.

Table 1. Challenges of Digitalization Government

Indicators	Parameters
Legal and Regulatory	Has the regulation for e-government
Technical and Infrastructure	Level of ICT literacy within population
	ICT infrastructure quality
	E-government platforms quality
	Privacy and security system quality
Institutional and Managerial	Leadership and skill ability in ICT

Sources : [3]

Table 1. shows the theory of digital government challenges consisting of legal and regulation to encourage digital government, the readiness of technology and infrastructure to implement digital government, and institutional capacity to upgrade Information and Communication Technology (ICT) knowledge for their employee. The reason authors use this theory is cause this article will be focused to talk about the dilemmatic of bureaucracy in Indonesia to implement digital government but the supporting system of digital government is lacking. Poor literacy and digital adoption of bureaucracy and the public also be challenges of digital government implementation.

3.1 Legal and Regulatory

Indonesia's Government has been making the regulation to encourage digital government implementation such as Perpres 96/2014 on the Pitalebar Indonesia's Planning, Perpres 95/2018 on the Public Service Based on Electronic (SPBE), Perpres 39/2019 on Satu Data Policy, and Perpres 18/2020 on RPJMN 2020-2024. Perpres 96/2014 on how government supports improving the human resource quality within ICT ability. Perpres 95/2018 talks about the implementation of government systems integration to improve the coordination use of IT systems. Perpres 39/2019 have been established to ensure and standardize metadata and interoperability system. While Perpres 18/2020 intended for improving the social and environmental life including ICT capacity.

The formation of this regulation is proof of the seriousness of the Indonesian government in transforming its system into a digital system. The e-government system is also one of the government's efforts to improve the effectiveness and efficiency of its services. The availability of data and services on e-government can make it easier for the public to access government information and services [15]. However, some of the regulations above only underlies e-government in outline without regulating in detail regarding its implementation which can be used as a reference in running e-government. So that the existing regulations are only limited to supporting the implementation of e-government but cannot provide detailed explanations and arrangements that can be used as a reference when implementing it in the field.

In fact, the implementation of each regulation has not been carried out optimally, such as increasing digital capabilities as the main capital in digitizing government, until now digital knowledge has not been evenly distributed throughout Indonesia. The current regulations governing the integration of e-government systems cannot be realized, which can be seen from digital public services that have not been integrated or can provide service transactions as a whole. Regulations related to improving digital capacity have also not been implemented properly as seen from the imbalance in the internet network in several regions in Indonesia.

3.2 Technical and Infrastructure

In a disruptive era, with the adoption of technology, one needs to find, create and responsibly use Information Communication Technology (ICT) and collaborate with the internet. ICT literacy also needs to the internet users can use the internet wisely. ICT literacy or digital literacy was measured by digital skills, digital safety, digital ethics, and digital culture [16]. Digital literacy is an emerging component for everyone to survive in the digital space [17]. Digital literacy can help people to communicate, collaborate, find and consume information [18]. Digital literacy is crucial for internet users to evaluate the information in content, construct communication, ability to act responsibly, and critically think about the content [19].

Digital literacy also can increase public service effectiveness if the citizen has participated. It is one of the decisions to develop the digital public service to connect citizens and government and public service access easily [20]. Digital public service

developing to manifest citizen inclusivity to access public service anytime, anywhere, and on any device [21]. But Indonesia still has problems with ICT literacy, although internet users have increased from year to year. Based on Digital Literacy Status Report in 2021, the level of Indonesians' literacy digital is still 3,49 out of 5,00 [22]. This level indicated level of Indonesian's digital literacy is medium and should be improved.

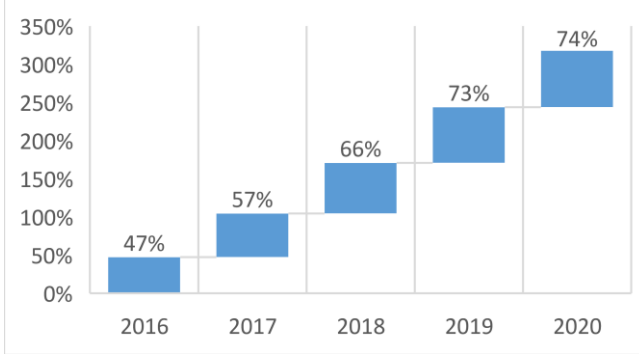


Fig. 2. The Increase of Internet Users in Indonesia (2016-2020)

Source: Author, 2023

While in 2016 internet users in Indonesia is 47,22%, in 2017 increased to 57,33%, in 2018 66,22%, in 2019 73,75%, and in 2020 until 74,55%. The increase in internet user percentage indicated Indonesian citizens can access the internet to help their daily operations. Hal ini dilatarbelakangi oleh mudahnya akses internet melalui berbagai media seperti akses internet dari perangkat individu, wireless fidelity (wifi), maupun hotspot dari perangkat lain [23]. But increasing internet users has not impacted digital public service access without high digital literacy and awareness of citizens to use digital to access public service [24]. Digital public service implementing needs to be balanced with citizen training and socialization about digital public service uses to increase the digital literacy of citizens [25]. E-government did not prepare the system only, however, the digital skill of citizens should be empowered [26], [27].

Although the number of internet user's percentage in Indonesia has increased, Indonesia still has a problem with the internet penetration gap at the local government level. The gap in internet penetration impacted internet users and the accessibility of digital public service in various local governments.

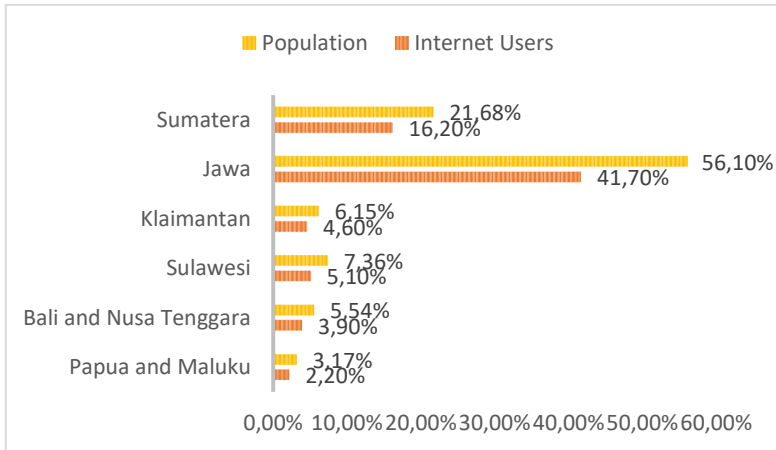


Fig. 3. Internet Users Gap in Indonesia (2021)

Source: Official Data of BAKTI, 2022

The figure above shows that there is an imbalance in internet users between regions. Java Island has the highest number of internet users (41.7%) of the total population (56.1%). The second area with the highest number of internet users is Sumatera Island (16.2%), followed by Sulawesi Island (5.1%), Kalimantan Island (4.6%), Bali and Nusa Tenggara (3.9%) and Papua Maluku. (2.2%). Inequality of internet users can affect the accessibility of services that can be reached. Meanwhile, the use of the internet, which has private security and easy access, influences people's interest in using digital public services [28]. Knowledge of dynamic public administration also influences the choice of access to reach these services [29]. [30] reinforce that in Indonesia there are still areas that cannot access the internet so e-government utilization is not optimal. This inequality makes e-government projections not work properly, even though the system has been well-designed [31].

While the Indonesians e-government development index (EGDI) ranked 77 out of 193 in 2022 based on UN E-Government Knowledgebase [17]. It was indicated that Indonesian e-government quality is still in the medium rank of others countries in the world. EGDI uses three indicators to assess the e-government of countries it is human capital index, telecommunications infrastructure index, and online service index.

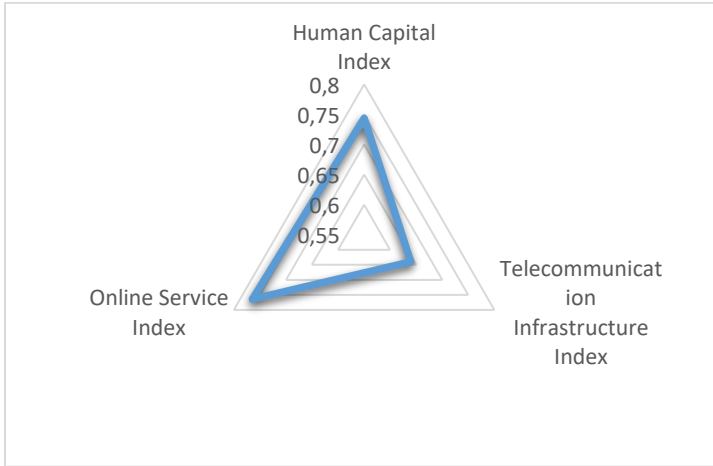


Fig. 4. Indicator of e-government assessment of EGDI

Source: [17]

Figure 4 shows e-government implementation in Indonesia was led by the Ministry of Administrative and Bureaucratic Reform and has a score of 0.7438 in the human capital index, 0.76444 in the online service index, and 0.6397 in the telecommunication infrastructure index. The human capital index indicated digital skills and knowledge of public servants, which was dominated by generation X and impacts e-government implementation. Today generation X has the most significant impact on the workplace [32]. This is because most of the structural positions are occupied by generation X, while they are used to the old culture which tends to be rigid and heavily driven by regulations so digital use has not been massively used [10].

Telecommunications on infrastructure index have been assessing of inclusivism the internet connection. Telecommunication infrastructure membantu menghubungkan komunikasi sosial, politik, ekonomi dan masyarakat dalam ruang digital [30]. While Indonesia has an internet connection gap in some regions and impacts to accessibility digital public service. Online service indexes have been assessing sub-components is an institutional framework, service provision, content provision, e-participation, and technology. The Indonesians Government provide some portal for online service is online single submission portal (<https://oss.go.id/>), a public complaint handling portal (<https://www.lapor.go.id/>), one data Indonesia portal (<https://data.go.id/home>), a national statistical record (<https://bps.go.id/>) to help citizens access public services easily. Ease of access is an important element in e-government [33].

However, digital public services will not run optimally if people's interest in using them is low. One of the factors that influence people to adopt digital public services is data privacy and security [34], [35]. Meanwhile, digital infrastructure problems in digital public services are data privacy and security which must be controlled by government hardware and software [36].

Although the Ministry of Administrative and Bureaucratic Reform has made regulations regarding data privacy and security in e-government, including Law number

11 of 2008 concerning information and electronic transactions, and government regulation number 71 of 2019 concerning transactions and implementation of electronic systems. Decree of the National Agency and State Code Number 8 of 2020 concerning security systems in implementing electronic systems. Presidential regulation number 28 of 2021 is a revision of presidential regulation number 53 of 2017 concerning national cyber and crypto agencies, to ensure the implementation of government policies and programs in cyber security, but cybercrimes are still widely committed. This regulation indirectly requires data managers to have an integrated Digital Right Management (DRM) mechanism [37].

The types of cybercrimes that often occur are unauthorized access, illegal contents, intentional spread of digital viruses, cyber espionage, data forgery, carding, cyberstalking, cybersquatting and typosquatting, hacking and crackers, cyber terrorism and hijacking [38].

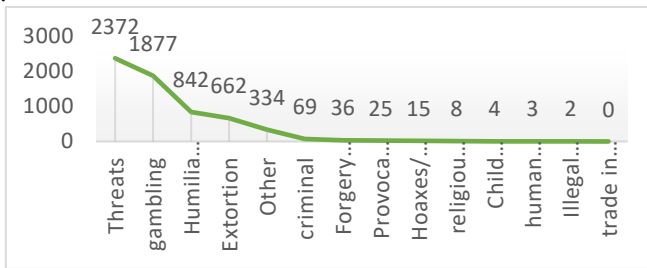


Fig. 5. Cybercrime Report (January-December 2022)

Source: [39]

The figure above shows that there were thousands of cases reported by the public related to cybercrime in 2022. Cases with the highest intensity were cases of threats via the internet, social media, and the like as many as 2372 cases, then online gambling as many as 1877 cases and cases of insult/defamation through social media or the internet as many as 842 cases as the three highest cases of cybercrime in 2022.

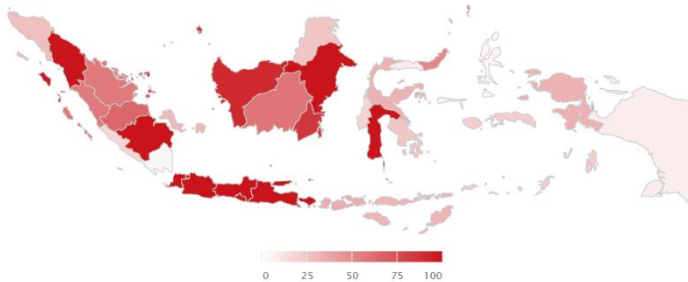


Fig. 6. Spreading Negative Content (January-December 2022)

Source: [39]

The spread of negative content in 2022 is still being carried out a lot, even though the cases are spread throughout Indonesia. The figure above shows that Java Island is

an island with cases of spreading negative content in each province, namely Banten 532 cases, Jakarta 1104 cases, West Java 1327 cases, Central Java 674 cases, DI Yogyakarta 131 cases and East Java 761 cases. The high number of cases of spreading negative content also occurred in several areas on the islands of Sumatra, Bali, Kalimantan, and Sulawesi, while in the Papua region, this case is still rare. The small number of cases of spreading negative content in the Papua region can also be indicated by the limited internet network in the area so internet network inclusiveness has not been achieved. This data shows that the problems faced by the Government of Indonesia in implementing e-government are not only limited to increasing the digital skills of the public and apparatus, improving digital infrastructure and users, but also cyber data security itself.

3.3 Institutional and Managerial

This indicator discusses the digital capabilities of government apparatus as the front guard in implementing e-government. A well-designed e-government system will not be optimal without the support of qualified skills from bureaucratic human resources in operating it [40]. Preparing bureaucratic resources that are digitally literate is also an important aspect of e-government transformation [41].

Table 2. Percentage of Bureaucracy Generation

Classification of Age	Percentage
18-20	0.03%
21-30	0.9%
31-40	25%
41-50	31%
51-60	35%
>60 years old	0.85%

Source: [42]

The picture above shows that the composition of the Indonesian bureaucracy is dominated by generation X, while this generation tends to have difficulty adapting to digital usage [43]. In addition, most of the X generation is currently occupying structural positions in government, while the bureaucracy of the millennial generation has a smaller percentage and has not occupied many strategic positions in government. This is a challenge in itself for the current bureaucracy which consists of two different generational components.

Generation X, which tends to obey rules and regulations, seems rigid and difficult to accept change, while the millennial generation tends to like new things to innovate, especially in the use of digital services in public services. This condition is a challenge for the millennial generation bureaucracy to be able to provide initiatives and innovations in its public services through digital adoption amidst a bureaucratic structure that is still bureaucratic. Therefore, the government needs to provide training for its bureaucracy, especially the X-generation bureaucracy, so that it can keep up with the development of public services in the disruptive era..

4 Conclusion

Based on the findings of this study, it was found that the Indonesian government still has many challenges in implementing e-government. Even though the digitalization of government led by the Ministry of Administrative and Bureaucratic Reform has been based on several regulations, the implementation of these regulations has not been fully implemented. This challenge includes the low digital literacy of the community which affects the use of e-government itself. Even though the number of internet users in Indonesia has increased, this increase has not been followed by a digital literacy index which has resulted in the inability of the public to use the internet wisely, especially in the use of e-government. Inequality in internet network penetration in Indonesia is also one of the challenges in implementing e-government because this inequality makes some regions unable to access e-government. The quality of the digital services provided is also not fully running well even though the system and service features have been improved. This is due to the low level of public participation in e-government, one of which is influenced by the high cybercrime in Indonesia. There are thousands of cybercrime cases in Indonesia which are marked by the occurrence of thousands of cybercrime cases during 2022. Limited digital capabilities of the bureaucracy are also a challenge for the implementation of e-government, especially now that the bureaucratic component is dominated by generation X bureaucracy. Meanwhile, the millennial generation's intensity bureaucracy is still very few and has not occupied structural positions. The limited power in the bureaucratic structure will limit the space for the millennial bureaucracy to make changes in its organization.

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