
Utilizing Big Data in Supporting Bureaucracy Reform as A Public Service Development Effort

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INTRODUCTION

The development of technology and information today makes billions and even trillions of bytes of data created all the time from various sources such as from social media. These trillions of data focus on one terminology, namely Big Data. Data has a very strategic role in making decisions. Therefore, parties who can process and utilize data on a large scale with a variety of diversity, complexity, and high speed can benefit greatly. However, it is unfortunate that until now in Indonesia the use of Big Data is still not very popular (Maryanto, 2017).

Until now, the fields that are familiar with implementing Big Data are telecommunications, banking, and companies that produce consumer goods and equipment. Big Data should be used by various parties, both government and companies. Although the use of Big Data is expensive and complicated, companies and Community Work Units (SMEs) with small capital can use it. This can be done if the parties know clearly what the purpose is so that data identification

can be carried out regarding their needs so that they can get greater benefits and advantages (Sirait, 2016).

In addition to providing benefits to the business sector, the use of Big Data can also be applied to the realm of government. This is related to the administration of government in the form of public services. Through the use of Big Data in public services, it will provide results in the form of public responses related to public services that are felt and obtained. This response is the basis for compiling and improving existing public services, namely by finding alternative solutions based on data so that they can formulate strategic steps in solving them. An example of the use of Big Data technology is by analyzing data related to soil fertility information, the government can advise the public what types of plant varieties are suitable for farmers to use (Khikmatul Islah, 2018).

Not only services in agriculture, but the government also has the opportunity to take advantage of Big Data technology in various fields so that people can more easily access existing public services. Such as data related to population, health insurance to data related to public taxes. If the government can see these opportunities and challenges, then public services will be more beneficial to the community. But in the process, this is not an easy job. The government needs a lot of support from various aspects, namely technology, resources, time, and special skills and expertise to integrate it (Reza, 2020).

This is related to the existence of bureaucratic reform, namely public administration in all fields, especially in implementing management functions in government. The aim is to increase productivity, service quality, and effectiveness by the dynamics of development and technological progress in society. The development of the dynamics of community life will become a challenge for the government in making development adjustments. In addition, the rapid development of technology has forced the government to continue to improve credibility and accountability to solve various government problems to improve services to the community (Abyasa, 2021).

Therefore, based on this background the author will conduct research on the Utilization of Big Data in Supporting Bureaucratic Reform as an Effort to Develop Public Services. The aim is to find out how to utilize Big Data technology in government so that strategic steps can be formulated to develop public services in the community.

STRENGTHENING BUREAUCRATIC REFORM THROUGH THE UTILIZATION OF BIG DATA

The development of technology and information today causes the bureaucracy to be compelled to change the governance of human resource development. This is because human resources are a source of driving the progress of the government which is at the forefront to create competent apparatuses. Competent resources are resources that have superior managerial skills and skills. Therefore, in developing these human resources, it is necessary to strengthen the bureaucracy by utilizing knowledge literacy, media literacy, and knowledge of the use of Big Data technology. The goal is that the state apparatus as a government resource can master and understand complex work based on an understanding of Big Data (Anggoro, 2017).

The purpose of this bureaucratic reform is to create a bureaucracy that is accountable, clean and transparent, and able to adapt to the times. The purpose of an accountable bureaucracy is a bureaucracy that can account for what has been done and produced properly and correctly to the community by the provisions of the legislation in force in Indonesia. Followed by a clean bureaucracy is a bureaucracy that has high integrity and has no political interests and is not entangled in acts of corruption. The last is a transparent bureaucracy, meaning that this bureaucracy is open to the community or the public in various sectors so that they can manage resources properly according to the needs and demands of the tasks they have (Astara, 2021).

This bureaucratic reform needs to be carried out considering the government's goal of implementing national development. This bureaucratic reform is a requirement that must be met in creating a professional government, having good performance, and being able to face various changing times that occur due to future global developments. Through the use of Big Data technology, the state apparatus will find it easier to keep up with the times in completing the tasks of government administration, construction, and increasingly competitive public services in all aspects of life. So that the state apparatus which is oriented towards Big Data competence has a very vital role in supporting the implementation of governance in the future (Muriany & Ruhunlela, 2021).

HR management and effective and efficient government administration with the support of Big Data system technology will provide impetus in improving the

way of thinking and culture in the bureaucracy to be superior and competent. In addition, the use of Big Data is expected to be able to reduce the number of acts of corruption and increase the efficiency and effectiveness of the management of public policies and services in the community. So that what is the goal of the government can be seen in real terms and the community can feel the results and benefits. In addition, the ease with which the public can access information related to the public services provided will increase public confidence in the government bureaucracy in Indonesia. This will be an ideal picture of the Indonesian bureaucratic system that is sensitive to the demands of society and the times. In other words, the greater and higher the public's expectations of the performance of the government bureaucracy, the government bureaucracy must be able to respond responsively and aspirationally to meet the public's needs. This can only be done through bureaucratic reforms carried out by applying Big Data technology (Yusriadi & Misnawati, 2017).

UTILIZATION AND CHALLENGES OF BIG DATA IN INTEGRATING GOVERNMENT PUBLIC SERVICES

The definition of public services is explained in Law No. 25 of 2009 namely public services are activities carried out related to meeting service needs that are adjusted to the provisions of the legislation on the implementation of public services for the people of Indonesia. In addition, other definitions of public services are explained in the Decree of the Minister for Empowerment of State Apparatus No. 63 of 2003, namely various forms of services carried out by government agencies, both central and regional to meet the needs of the community by the provisions of applicable laws and regulations. Based on these two definitions, it can be seen that public services are all forms of services provided to the community by the government in the form of administrative services (Nanna, 2019). This public service is carried out to meet the needs of the community by the laws and regulations.

While the nature of public services includes: *First*, improve the quality and productivity of the implementation and administration of government functions in the field of public services. *Second*, encourage the creation of an effective and efficient service delivery system. *Third*, encourage the community to improve welfare through creativity, community roles, and initiatives (Dharwawan, 2018).

The increasing development of technology and information causes the development of technological opportunities that can be used to improve public services in the community. One area that can be developed is Big Data technology. One example of the development of Big Data technology is the implementation of e-Government or electronic-based government decision-making. Through the implementation of e-Government, a traditional government that is identical to paper-based administration is slowly being abandoned. Not only that, management to service products are part of this policy initiative. This policy transformation is one of the issues that is currently being discussed by the public (Nur, 2020).

In developed countries, e-Government is a transformation of bureaucratic policies that are more friendly to the community. This happens because e-Government is believed to be a policy that has a positive effect on a clean, transparent and authoritative government. As part of the use of Big Data, e-Government has an electronic-based service concept or e-service that seeks to maximize the use of technology and information in serving the needs of the community. Collaboration between the government and the use of Big Data is very much needed considering the increasingly rapid development of globalization will require better and more efficient services (Rahmadany, 2021).

The main orientations that are the objectives of using Big Data in public services are as follows: *First*, obtaining responses and responses from the community is the basis of efforts to formulate and formulate policies and improvements related to the public services provided. These responses can be obtained through the existing information system on government services originating from social media. *Second*, form an integrated service that contains specific segments that are more effective and efficient. *Third*, formulate strategic steps and solutions to problems that occur based on data. Various parties agree that the use of Big Data technology has enormous benefits for the goals and performance of government bureaucrats.

However, in the process, this does not mean that the use of Big Data is without problems. There are several obstacles faced by government officials who utilize Big Data in command, including the following. *First*, incorrect data availability; the more parties that use Big Data, the stronger the desire for open data, especially in the field of public information. Open data is related to two basic things, namely the availability of data for anyone who wants to use it legally and the availability of this data at minimal cost or given free of charge. Currently, this open data

movement has been implemented in various forms, including the establishment of data.go.id. However, from this data movement what needs to be watched out for is the openness and availability of the data provided is wrong data. So that in its publication it is necessary to validate the truth of the data that is informed to the public (Efgivia, 2020).

Second, standardization of government data; about the open data movement, the data presented must have certain standards so that they can be used again, are machine-readable, and have interoperability properties. An example is the use of documents in the form of .xls or .csv. Standardization of government data can be done by integrating data between agencies so that it is more efficient and prevents redundancy. Examples of integration, such as filling data in making a Driving Permit (SIM) can be obtained from the National Identity Card (KTP) data. Or filling in the data for applying for a work permit at the Manpower Office, can be checked from the relevant population data. The main objective is to increase the standardization, transparency, and accountability of the government bureaucracy (Maryanto, 2017).

Third, data privacy; data transparency is indeed needed in the implementation of Big Data in public services, but on the other hand, data privacy is also required by the government bureaucracy. This data privacy relates to the personal data of individuals and groups that must be protected. The data in question is like the personal data of banking customers which must be protected so that it is not misused by irresponsible parties. The use of this personal data can only be done if it gets the consent of the related party. Therefore, in protecting the privacy of a person's data, the government drafted a bill containing the protection of a person's personal data and information (Pujianto *et al.*, 2018).

Fourth, HR competence; in the process, the use of Big Data requires competent and expert resources in their fields. Several fields are needed in managing Big Data, such as the field of analysis and computer programming which requires creativity in choosing the methods used in collecting, interpreting, and analyzing data (Islah, 2018).

Fifth, supporting infrastructure; not only skilled and competent resources are needed in the use of Big Data, but the infrastructure that can support this work must also be considered. This is necessary considering that without adequate infrastructure, the use of Big Data will also be less than optimal (Islah, 2018).

CONCLUSION

Based on the results of the research and discussion, it can be seen that Big Data, if used properly and correctly, will be very beneficial for bureaucratic reform in Indonesia. This can be seen from the development of public services that are felt by the community. The benefits of managing Big Data can be seen from the government bureaucratic system that continues to advance in an electronic-based government system or e-Government. This role is very visible from the increasing abandonment of paper-based administration in Indonesia. In its development, if Big Data is optimally utilized in the bureaucratic system in Indonesia, it will have a positive and significant impact on increasing public services perceived by the community.

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