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The Capacity of the Jember Regency Community and Village Empowerment Service (DPMD) in Using Artificial Intelligence to Strengthen the Village Financial System

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Abstract: This study aims to determine the extent of the capacity of the Community and Village Empowerment Service in strengthening data transparency in the Village Financial System (Siskuid). The method used in this study is a qualitative approach, while data sources were obtained from the Community and Village Empowerment Service of Jember Regency. The data were collected through interviews, observation, and documentation. The results of his research are the capacity of the Community and Village Empowerment Service in strengthening data transparency in the village financial system in Jember Regency. There are several aspects including: processes, human resources, strategy, and organizational structure. The efforts of the Jember District Government's Community and Village Empowerment Service in using artificial intelligence to strengthen data transparency in the Village Financial System are somewhat weak. From the perspective of their institutional capacity, their improvement in the Village Financial System Program based on data transparency is also categorized as poor even though all villages in Jember Regency have used the online Village Financial System in December 2019.

Keywords: DPMD Capacity, Public Transparency, Siskeudes, Human Resources, Artificial Intelligence

1. Background

Data analysis is a function that is playing an increasingly important role in evidence-based decision-making in the public sector worldwide [1]. Both the private and public sectors generate large amounts of data on a wide variety of areas, such as energy, traffic, education, health care, the environment, fraud and corruption. Nonetheless, some government agencies exploit the full potential of this data for decision making and better governance in solving public problems.

Better government decision-making processes not only translate better policies, but also into superior public values such as security, safety, accountability and transparency [1]. In short, data analytics can and has been used to drive better government performance, improve the quality of services provided, new forms of interaction with citizens, and improve the welfare of every citizen.

There is ample evidence that government initiatives have been put in place to harness the power of AI [2]. Empirical research on the topic is somewhat lacking in the context of the challenges and opportunities posed by exponential increases of the amount of data and the number of technological advances [2]. This may be because, traditionally, governments have been followers rather than pioneers in the use of innovative technology; globally, for example, only a few government agencies are adopting AI and Machine Learning in their daily operations [3].

Meanwhile, the Jember Regency Government, East Java Province, has used the Village Financial System (Siskeudes) through a simple application developed by the Financial and Development Supervisory Agency (BPKP) [5]. This application is for budgeting, bookkeeping, and village financial reporting. Based on information from the BPKP, this application was developed to improve the quality



of village financial governance. The basis for managing the village financial system is the Village Law No.6 2014 and Permendagri No.113 of 2014. The purpose of developing the siskeudes is to make it easier for village governments to make budgets, bookkeeping, and financial reporting.

This application helps the Jember district government to compile, monitor, and evaluate the RAPBDes. Once data is entered, Siskeudes generates the necessary reports automatically, saves time and money, potential fraud and human error, and continues to collect data [9]. In addition, Siskeudes can track and prevent illegal changes to activities or budgets. However, the problem that arises is that many villages in Jember Regency who know about the Siskeudes application have not been able to use the system optimally.

In the implementation of the SISKEUDES application, the authority in its development program is the Community and Village Empowerment Service (DPMD) of Jember Regency [6]. Therefore, to make this program a success, the Jember Regency Community and Village Empowerment Service is in charge of providing technical guidance and guidance to all villages in Jember Regency. The role of the Community and Village Empowerment Service is very important for village officials in managing village finances based on Artificial Intelligence, village finances that are easily accessible to the public anyone, anywhere.

In the era of big data, the DPMD of Jember Regency with its Siskeudes has strengthened itself with Artificial Intelligence (AI) techniques and technology [7]. This is because data analytics related to AI greatly increase the predictive power of the system being created [8]. While there is no consensus on a single definition, AI is generally considered to refer to the study of how to train computers so that they can perform tasks that humans currently do better or are usually thought to be reserved for human intelligence [7]. In this sense, AI techniques and technologies have huge potential for governments and can help find new patterns in data to make better predictions.

Based on the background above, this study aims to determine the extent of the capacity of the Jember Regency Community and Village Empowerment Service in strengthening Artificial Intelligence in the village financial system.

2. The Process of Strengthening Data Transparency in Using Artificial Intelligence

At the end of 2017, the Community and Village Empowerment Service (DPMD) of Jember Regency began to introduce the Village Financial System Program (SISKEUDES) which is based on applications simultaneously at the Bandung Permai hotel to all villages in Jember Regency. It is expected that all village financial administrations will be able to use online-based applications that can be accessed by the public, so that in the future all village administrations will be more organized [10]. The program realization that has been carried out by DPMD is arranged in 4 stages, namely, planning, implementation, administration and reporting.

Planning as meant by DPMD Kabupaten Jember is the stage of program / activity formulation to be implemented in the village concerned [11]. The Village Government must determine the RAB (Draft Budget). The RAB is to allocate the costs needed for village development, as well as other costs related to the financial process.

The next stage is implementation. The implementation of village finance is an activity of the existing planning process which is then carried out in the village development process.

The implementation stage of the Village Revenue and Expenditure Budget (APBDesa) includes a whole series of implementation activities.

Table 1. The relation between technology and financial service based on artificial intelligence approach

Origin	Technology	Infrastructure Providers Seeking to help financial institutions digitize and modernize their technology	Large technology ecosystem Using financial services to strengthen relationship with the users
	Financial Services	New entrants, startup, and attackers Seeking to enter financial services using new technologies	Incumbent financial institution Making significant system in
		Low	High
Scale			

We assume that the future of these various forms of financial services will evolve in different ways and that they will face very different hurdles. Infrastructure companies, for example, will always succeed or fail on the basis of technological capabilities [4],[5]. The key challenges for incumbent financial institutions relate to organisation and expertise, as well as investing in large-scale technology [12]. Shifting conventional mindsets and operating structures to a financial behemoth to offer digital experiences [8].

After implementation, village financial administration is the process of recording transactions that occur in one fiscal year. Administrative activities have the function of administering the processes that have occurred from the APBDes implementation and planning stages. The final stage of the form of village financial management is reporting.

Based on the realization of the program that has been carried out by DPMD Jember Regency which is arranged in 4 stages, to assess the extent to which DPMD's capacity in strengthening Artificial Intelligence in the Village Financial System (SISKUIDES) is in the processes it has carried out, [4]. To find out how the process of strengthening Artificial Intelligence in Siskuides, Mrs. Ade Fitria as the Village Financial Management Section of the Jember Regency DPMD revealed that the Artificial Intelligence process for village finance in Jember Regency was carried out during village financial planning, implementation (realization), and supervision. At the planning level, Artificial Intelligence in village financial planning which includes village budget plans is encouraged so that village financial data can be accessed by all village communities [11]. Meanwhile, at the village finance implementation level, Jember Regency DPMD encourages the transparency of village financial data by preparing all plans and policies through coaching and training. At the time of the development of the village financial system program, the Jember Regency DPMD invited village parties including the village treasurer, BPD, and other heads, so that the implementation of the siskeudes program could run well in accordance with the principle of public transparency [12]. In addition to conducting coaching efforts, DPMD Kabupaten Jember supervises the

planning and implementation of village finances. This supervision is carried out so that the management of village government finances can be transparent, effective and efficient. In its own supervision, involving the KPK [12].

Based on the facts above, it can be seen that the capacity of the Community and Village Empowerment Service (DPMD) of the Jember Regency Government in its efforts to strengthen Artificial Intelligence, Artificial Intelligence in the Village Financial System is still somewhat weak [13]. This is reinforced in the implementation process and the facts in the field on Siskuides show the weak implementation of the principles of Village Financial Artificial Intelligence. The results of observations by researchers in the field show that Artificial Intelligence in the Village Financial System has not implemented the principle of openness which allows the village community to know and get the widest access to information about village finances. This proves that the capacity of DPMD Kabupaten Jember has not been able to encourage the Siskuides program to guarantee access or freedom for village people to obtain information about the implementation of village government finance. The Siskuides program should be managed by the DPMD of Jember Regency until there is transparency of village finances that is open to village communities starting from the policy process, planning, implementation, supervision and control that is easily accessible to all parties who need this information.

3. *Human Resources DPMD Jember Regency in Strengthening Artificial Intelligence in the Village Financial System*

One of the resources that affect the success of the capacity of an institution is human resources. Human resources are required to have the expertise and ability to carry out their duties so that the expected goals can be achieved.

Therefore, researchers conducted in-depth observations of the Siskeuides who run DPMD Jember Regency with 3 aspects, among others; 1). Public policy publication through communication means: annual reports, brochures, leaflets, information centers, telephone toll free, media coverage, public service announcements, websites, bulletin boards, local newspapers. 2). Information presented: reference services, data maintenance, public activity reports, complaints procedures. 3) Complaints handling: city news in mass and local media, notices of responses, response time limits, opinion polls & surveys on public policy issues, comments & notes on draft policies & regulations, service users surveys.

From the results of the researchers' observations on these 3 aspects, and based on the data that has been collected, it can be seen that the aspect of institutional human resources of the Jember Regency DPMD in strengthening Artificial Intelligence in the Village Financial System is still in the poor category [13]. This is shown by the lack of publication of village financial policies to the public, from planning to implementation to reporting [17]. Likewise, the information model presented has not yet touched on village financial data services that are easily accessible to the public and the absence of handling complaints regarding village financial data indicates that the human resource capacity is still inadequate [16]. The human resources of Jember Regency DPMD should be improved to satisfy the curiosity of the village

community about the course of village financial management through the Village Financial System with transparent and accountable principles. Jember Regency DPMD must be creative in finding ways to interpret the Siskuides so that village financial administration can be known to the village community easily, so that the village government can find out the aspirations of the village community and the village community can take control of the running of their village government.

4. *Jember Regency Strategy of Village Financial System*

Regarding the strategy of DPMD Jember Regency in strengthening the Village Financial Artificial Intelligence, it only focuses on Bimtek in various districts and villages. Based on data in the field, the Jember Regency DPMD strategy in strengthening village financial Artificial Intelligence is only an administrative necessity and does not arrive at the strategy of opening the widest space for participation for village communities in village financial management, from the planning stage to accountability [14]. Therefore, in the context of Village Financial Artificial Intelligence, DPMD must use a village community social audit strategy that involves elements of society and culture / traditions that grow in the village. For example, a village community social audit of the Village Financial System can be carried out, among others, through village consultation forums, village radio broadcasting media, or cultural activities that are easier for villagers to understand.

5. *Organizational Structure of Village Financial System*

Regarding the organizational structure of Jember Regency DPMD in strengthening Artificial Intelligence, village finance is limited to administrative functions. The function of public transparency as mandated by Law No. 14 on Openness of Public Information (KIP) of 2008, has not been implemented. It can be seen that based on the observations of researchers, there are three reasons why the public transparency function has not been implemented. First, at the planning, implementation and coordination level of financial governance development activities through the Siskuides application, it does not make financial Artificial Intelligence the main stream. Second, there are no rules and procedures for implementing Siskuides that are easily understood by users based on public transparency [15], [16] [17].

Third, the unavailability of transparent content of financial governance that is easily accessible by the public in obtaining village financial planning, implementation and reporting data.

6. *Conclusion*

Based on the above discussion, it can be seen that the capacity of the Community and Village Empowerment Service (DPMD) of the Jember Regency Government, in its efforts to strengthen Artificial Intelligence in the Village Financial System, is still somewhat weak. This shows the weak implementation of the principles of artificial intelligence in village finance. The researchers' observation found that the Village Financial System has not implemented the

principle of openness which allows the village community to know and get the widest access to information about village finances.

Jember Regency DPMD HR who are required to have expertise and ability in strengthening Village Financial Artificial Intelligence, is assessed from 3 aspects, namely; policy publication, information presented, and complaint handling – all are still in poor category. This is indicated by the lack of policy publication, the information model presented has not yet touched village financial data services that are easily accessible to the public and there is no handling of complaints related to village financial data.

The Jember Regency DPMD strategy in strengthening the Village Financial Artificial Intelligence only focuses on Bimtek in various districts and villages. This strategy is less effective, resulting in delays in sending or uploading from the village to the subdistrict and from the subdistrict directly to the Jember Regency DPMD. This is because the Jember Regency DPMD strategy in strengthening Artificial Intelligence in Siskuides is not matched by a strategy of strengthening Artificial Intelligence (AI) which increases the power of Siskuides' predictions, which results in the village head not being openly responsible to the village community on a regular basis. The Jember Regency DPMD strategy in strengthening village financial Artificial Intelligence is only an administrative necessity and does not reach the strategy of opening the widest possible space for participation for village communities in village financial management, starting from the planning stage to accountability.

Jember Regency DPMD organizational structure in strengthening village financial Artificial Intelligence, namely the Field of Financial and Wealth Management which has tasks including planning, implementing, coordinating activities of Village Financial Management and Wealth Management, collecting, processing and formulating technical guidelines / instructions on managing village finance and assets is still limited to administrative functions. The function of public transparency as mandated by Law No. 14 on Openness of Public Information (KIP) of 2008, has not been implemented.

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