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Artificial Intelligence and Human Resources: A Challenge in Implementing Artificial Intelligence in Village Government

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Abstract

AI is a branch of computer science, its essence is to try to let machines or systems simulate the information process of human consciousness and thinking, think like a human being even surpassed humans. AI village financial system is the combination of AI and village financial data. The village finance system has four modules: planning, budgeting, administration, and bookkeeping. The planning module to input the Vision, Mission, Goals, and Targets of the Village Government which has been outlined in the RPJMDes. The second module is a budgeting module to input data regarding the preparation of APBDes at the beginning of the fiscal year, budget proposals, and budget changes. The next module is the administration module to perform the input process in the framework of implementing APBDes and is used to record village revenue transactions, village expenditure transactions, cash transfer transactions, and tax deposit transactions. The fourth module in the data entry menu is the bookkeeping module, to enter the opening balance and make journal adjustments. The output of the bookkeeping module consists of budget realization reports every month, every quarter, every semester, and every year. Then the Village Property Report, the Realization Report on the Use of Village Funds, and the Compilation Report. Technical guidance improves the capacity of the village government apparatus. Technical guidance has a positive impact on civil servants in implementing the village financial system.

Keywords: *village government officials, e-village budgeting system, guidance training*

1. Introduction

The phrase Artificial intelligence (AI) was first used at a conference in July 1956 at Dartmouth College. Since then research in AI has built upon the tools and techniques of many different disciplines, including formal logic, probability theory, decision theory, management science, linguistic, philosophy, etc. [1]

Recently, AI has become an important issue on the agenda of governments throughout the world [2, 3]. Weyerer and Geyer (2019) propose that AI in government could be classified into five categories: 1) government services, 2) work and social environment, 3) law and order, 4) ethics, and 5) government policy. Some positive implications of AI in governments are related to promising results and improvements in efficiency, transparency, improved services, and public value [4]. AI is also used in Public Administration [5]. AI in the public sector covers various sectors, including AI in health care [6]

AI combines financial information with technology capabilities to accelerate the digital transformation of finance to create a more safe business and economic environment also reducing human error [7, 8]. AI which has been used to build an industrial financial system will gain more trust from the customers and thus become more beneficial to the industry [9]. Many countries have to transform their financial systems with AI. Mexico and Paraguay are two countries that have used AI in their financial systems [10, 11] AI is an important determinant for improving government apparatus performance in preparing financial reporting with good quality in the public sector [12]. Since 2015 the Indonesian government has transformed the principles of the village finance system



to more transparent, efficient, and effective through a computerized system. This system is called *Siskeudes* or *Sistem Keuangan Desa* (Village Financial System). But not every village is ready to implement the *Siskeudes*. Not all village government apparatus is ready to operate the village financial system technology. In every fiscal year, the government always makes budget preparation guidelines. For 2020/2021 the preparation of the village budget through the *Siskeudes* begins with technical guidance. Each village is represented by the village head, village secretary, and village treasurer.

2. Basic Theory

2.1. AI and the Village Financial System Application

Formerly, this Village Financial System Application was developed by BPKP, from the West Sulawesi regional office, as an example project, in the year 2015. In June 2015 the village financial system application was implemented for the first time in the Masama Regency Government. The successful development of the village financial system application was then submitted to the Deputy Head of BPKP for the Supervision of Regional Financial Implementation in Jakarta Then, on 13 July 2015 the village finance system application was officially launched (BPKP 2015). The use of the village financial system application must be approved by the local government, through a validation code by the BPKP as the application developer. The purpose of establishing the *Siskeudes* application is first, to ensure that all regulations and policies in the implementation of Law Number 6 of 2014, especially those related to finance and village development, can be implemented properly at the Government level (Indonesian Government Regulation 2014). Second, the village government apparatus implements the village financial governance cycle from planning, implementing, administering, and reporting based on the principles of accountability for users to operate the village financial system application (*Siskeudes*).

The output of the village financial system application are administrative documents and reports: 1) Administration documents consist of proof of receipt, Payment Request Letter (SPP), and Tax Payment Letter (SSP); 2) Reports consisting of budgeting reports (APBDes, RAB, APBDes per source of funds), and administration reports (General Cash Books, Bank Books, Tax Books, Auxiliary Books, and Administration Document Registers).

2.2. Technical Guidance Training for the Village Government Apparatus

During the technical guidance, participants get two subjects, the first subject was an explanation of administrative documents and the second, an explanation of how to enter administrative data in the online village financial system application. The village government apparatus must guarantee that administrative data must be synchronized with online data. Technical guidance has a positive impact to village government financial system [13]. Each technical guidance participant is asked to bring their own laptop. Lap top is used to train data entry and open the system application. Therefore the participants of this technical guidance are village government apparatus who have the competence to operate computers.

The technical guidance training also discussed the village finance modules. The village finance system has four modules: planning, budgeting, administration, and bookkeeping. The planning module to input the Vision, Mission, Goals, and Targets of the Village Government which has been outlined in the RPJMDes. The second module is a budgeting module to input data regarding the preparation of APBDes at the beginning of the fiscal year, budget proposals, and budget changes. The next module is the administration module to perform the input process in the framework of implementing APBDes and is used to record village revenue transactions, village expenditure transactions, cash transfer transactions, and tax deposit transactions. The fourth module in the data entry menu is the bookkeeping module, to enter the opening balance and make journal adjustments. The output of the bookkeeping module consists of budget realization reports every month, every quarter, every semester, and every year. Then the Village Property Report, the Realization Report on the Use of Village Funds, and the Compilation Report.

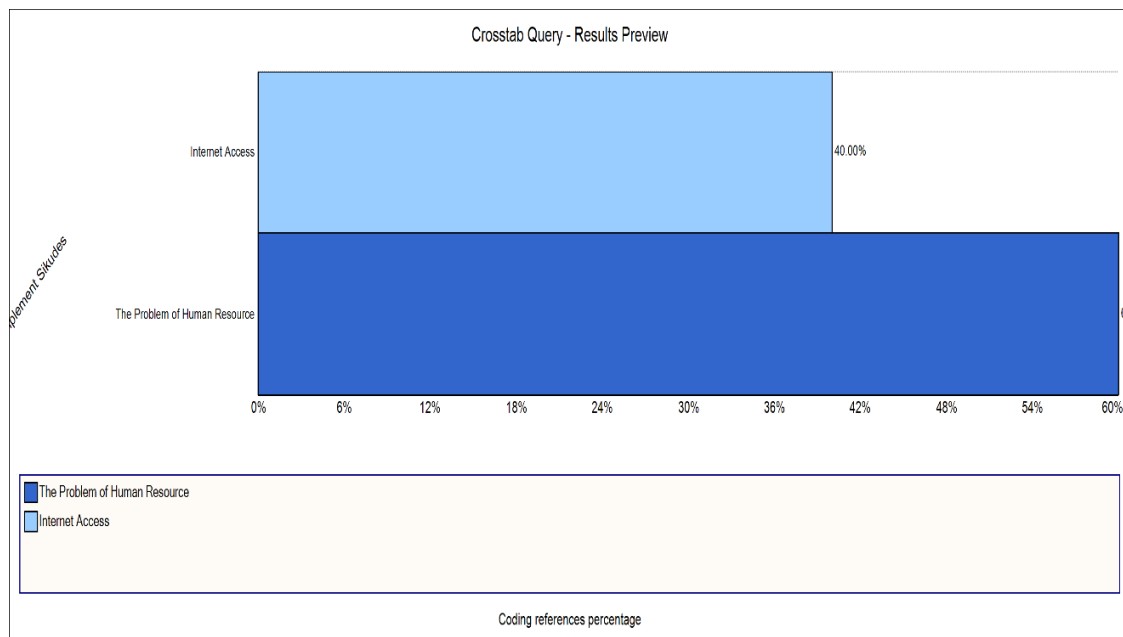
3. Research Methods

This research used the descriptive qualitative method. Data collection was through in-depth interviews. Data analyzed using qualitative descriptive techniques. To analyze the data, the researcher using NVivo 12 Plus. The informants are two village heads, two village treasurers, and two village secretaries. They come from two villages with different internet access capabilities. Three informants are the village government apparatus of Summersari, which easily accesses the internet. However, three other informants from Ambulu village had difficulty in accessing the internet. The researcher contacted them and conducted an in-depth interview about their experiences during the technical guidance training.

4. Research Finding

The Village Community Empowerment Service of Jember Regency on December 6, 2019, held technical guidance on village financial system (Siskeudes) applications. This technical guidance training is focused on how to train participants in operating the Siskeudes application. This training was attended by village government apparatus from 248 villages throughout Jember Regency.

Figure 1. The Crosstab Result Analyze of Challenge Implementing Artificial Intelligence in Village Government



Source: primary Data, 2020

Siskeudes is an internet-based artificial intelligence product. Siskeudes is an internet-based artificial intelligence product. Figure 1 shows that challenging to implement this application is computer literate human resources. This cannot be denied because most of the village government apparatus, are not computer literate. The level of education government apparatus is just Senior High School becomes an important problem. Hence, to solve this problem, the village head was forced to recruit outsourcing workers. Then the outsourcing workers were appointed as operators of Siskeudes. Thus, the successful implementation of the village finance system is highly dependent on the performance of human resources whose to be the operators. Although, the Siskeudes application is not difficult to operate as long as the operator is willing to learn and adapt

to this new system.

Another challenge to the village government to implement the Siskeudes is the village does not have an internet network. It is a more serious problem to implement artificial intelligence in Indonesia. Almost the village location in Indonesia has not Internet access. On Jember has 3 villages, Jambesari, Plerean, and Mulyorejo without any internet network. In order to implement the Siskeudes application, the village government usually move to another location with strong internet access. All of these village government apparatus are committed and responsible for their work targets. In the future, human resource development in villages and internet access is important to solve. The important factor is develop the human resource capability. They must also adapt to the development of artificial intelligence, which is related to financial management.

5. Discussion

AI is a branch of computer science, its essence is to try to let machines or systems simulate the information process of human consciousness and thinking, think like a human being even surpassed humans. The use of AI in the village financial system is to change the village budgeting system that is made manually into a system that uses computers. This system is more sophisticated than the manual financial system.

However, not all village government officials are capable of operating the system. This problem makes the implementation of the village financial system ineffective. The education level of village government officials is an important issue that must be resolved. This is the first problem that must be resolved. The reason is, Indonesia's characteristic as an archipelago is the main cause of internet access being a complicated problem. Thus, the village government apparatus should look for areas that have strong internet access to operate the village financial system application.

6. Conclusion

The use of Artificial Intelligence cannot be done easily. Many influencing factors become a big challenge in implementing artificial intelligence, especially in countries with archipelagic characteristics such as Indonesia. Big challenge factors, such as human resources, have become a major constraint. This is because the awareness of education in the village is still low. This is what causes the capabilities of village government employees to be unable to implement systems using artificial intelligence. Also, another factor that makes artificial intelligence difficult to implement is internet access.

7. Acknowledgment

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