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Village Government Challenges Facing Technological Advances: Readiness for the digital era in Bengkalis Village, Riau Province, Indonesia

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Abstract: This study aims to analyse the readiness of the village government in facing the digitalisation era seen from various aspects to analyse the problems and obstacles of the village government in facing the digitalisation era. The method used is descriptive qualitative to explore in depth empirical phenomena. The results showed that the village government in Bengkalis Regency was not ready to face the digitalisation era from the aspect of human resources, the knowledge and skills of village officials were still low in mastering technology and information and the readiness of technological infrastructure that had not been able to support the digitalisation era, namely the uneven internet network in all villages. The conclusion of this research is that the village government in Bengkalis Regency does not have qualified readiness in facing the digitalisation era.

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INTRODUCTION

The progress and development of information and communication technology today has led to various changes in all sectors, including the government sector (Huda, 2020; Singh et al., 2019). The rapid development of information technology encourages the government to adopt the use of technology in organizing the wheels of government from the central government level to the local government level and even to the village government level. Information and communication technology is a technology that includes all technical equipment for processing and conveying information (Aceto et al., 2019). Information and Communication Technology includes two aspects: information technology and communication technology (AlBar & Hoque, 2019).

The term information technology covers everything related to the process, use as a tool, manipulation, and management of information (Chatterjee et al., 2020; Dwivedi et al., 2023). Meanwhile, communication technology is everything related to the use of tools to process and transfer data from one device to another (Huda, 2020). Information and Communication Technology contains a broad sense of all activities related to the processing, manipulation, management, transfer of information between media. The application of information technology aims to solve problems, open creativity, and increase effectiveness and efficiency in doing work.

The village government is the spearhead of development and improving the welfare of the community is expected to be able to adapt to these technological advances. One of the information technologies that is growing rapidly today is technology using application media and the internet that can be accessed from anywhere (Guyen, 2020; Mishra & Tyagi, 2022).

Thus, village governments are faced with an all-digital era, where people rely on digital media to obtain information or establish communication rather than using other media (Strömbäck et al., 2020). As a result, the near sometimes becomes far and the far becomes closer. The term digital era can be interpreted as a condition of life or an era where all activities that support life have been facilitated by the existence of technology (Satira & Hidriani, 2021). Technological changes created by humans make all activities more practical and easier (García-Peñalvo, 2021).

Consequently, village governments must be able to prepare themselves to welcome this era from various aspects, so that governance in improving community welfare can run effectively and efficiently. According to Heeks, there are several strategies that determine the success of e-governemnt implementation in government agencies, namely: institutional infrastructure readiness, technology infrastructure readiness, data infrastructure readiness, human resources infrastructure readiness, legal infrastructure readiness, leadership readiness and commitment (Heeks, 2001; Nugroho & Purbokusumo, 2020).

Rural development today has undergone significant changes in its concepts and processes, one of which leads to the development of Information and Communication Technology, namely the use of application

media and the internet that can be accessed from anywhere. In this digital era, the use of technology is increasingly widespread and has even penetrated various sectors, including the village government sector. Many applications have been developed to assist village governments in managing various aspects of the village, ranging from financial management, village asset management to the management of village social aspects. Here are some applications that exist and must be operationalized by the village government, namely:

1. SDGs Village, application to manage data and information about indicators SDGs in the village.
2. SID (Village Information System), application to manage and monitor village development activities.
3. SISKEUDES (Village Financial System), application to manage village finances.
4. SIPADES (Village Asset Management System) application to manage village assets.
5. PRODESKEL (Village Profile), application to collect, record and manage data on the condition, potential and needs of the village.

In this study, it was analysed by novelty using Vosviewer to analyse topics that have been discussed by previous studies, using the keywords "Digital Age, Village Government, Challenges", obtained 17 documents in the scopus database from 2014 to 2022, the identification results show that the issue of the readiness of village government in readiness in the digital era is still rarely researched and is a new and relevant research topic. The author's contribution can be seen in Figure 1 below:

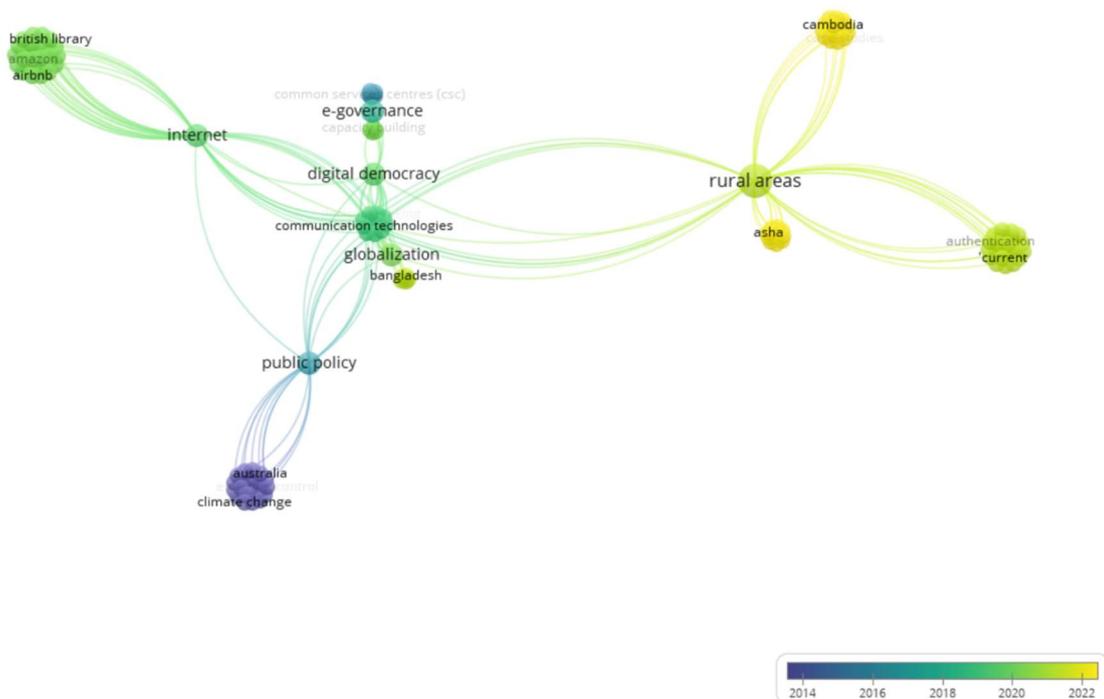


Figure 1. Identification and Analysis of relevant research and related sources of analysis using VOSviewer, 2023

Studies that discuss related to the digital era conducted by Wagner et al., (2003) the digital era government includes village governments that implement village e-government to the national level, and also community participation in utilising village online services. Further research was conducted by (Hasmawaty et al., 2022) that electronic-based government can then drive the economy of the community which is of course based on ICT. Changes in the form of services and ways of society in economic activities, will change people's culture such as the culture of bargaining, managing time and meriser markets before buying.

Bengkalis Regency has 136 villages which based on the Village Development Index in 2022 consist of 46 independent villages, 52 developed villages and 38 developing villages. (Pebiona, 2023). Therefore, villages in Bengkalis Regency must be able to utilize technological advances in organizing the wheels of government so that readiness is needed from various aspects, starting from the availability of human resources who are capable and literate in technology, the availability of supporting facilities and infrastructure, the managerial ability of the government and even the attitude of the village community in supporting the implementation of digital-based village government.

Therefore, village governments in Bengkalis Regency are required to be able to prepare themselves to face this digital era, both in terms of human resources, supporting facilities and infrastructure, village government managerial systems and the readiness of village communities as recipients of policy impacts and also as one of the determining factors for the success of government programs.

The problems faced by village governments in Bengkalis Regency in running the wheels of government that are all digital are :

First, the problem of human resources, the ability of village officials who are still low in the use and utilization of information technology, making it difficult to operate various applications in the village. The low understanding of the village apparatus resulted in errors in operating the application, such as incorrect data entry.

Secondly, the availability of facilities and infrastructure is also a problem in operating existing applications in the village. Especially the availability of the internet network, as the nadir of the continuity of the use of these applications. In Bengkalis Regency, not all village areas are covered by the internet network, which results in the application not running optimally.

The purpose of this study is to analyze the readiness of the village government in facing the digitalization era seen from various aspects, as well as to analyze the problems and obstacles of the village government in facing the digitalization era.

RESEARCH METHOD

A research method is a research plan and procedure that includes steps from broad assumptions to detailed methods of data collection, analysis, and interpretation (Andrew et al., 2019; Rashid et al., 2019), without being manipulated or regulated by experiments or tests. Explains that qualitative

research explores and understands the meaning of several individuals or groups ascribed to social or humanitarian problems (Harfiani et al., 2020; Wilbur et al., 2021).

1 This research uses qualitative research methods. Qualitative methods emphasize the observation of phenomena and examine more into the substance of the meaning of these phenomena. The analysis and sharpness of qualitative research is greatly affected by the strength of the words and sentences used. Therefore, the focus of qualitative research is on the process and the meaning of the results (Aspers & Corte, 2019). Qualitative research attention is more focused on human elements, objects, and institutions, as well as the relationship or interaction between these elements, in an effort to understand an event, behavior, or phenomenon (Grodal et al., 2021).

11 The unit of analysis in this research is the Village Government and the Community and Village Empowerment Office as the village government organizer that will implement the digitalization system at the village level. The unit of analysis is a certain unit that is taken into account as a research subject. In another sense, the unit of analysis is defined as something related to the focus / component under study. The data analysis technique used in this research uses steps: Data Collection, Data Reduction, Data Presentation, and Conclusion Drawing and Verification. Data validity testing uses Triangulation of Sources, Techniques, and Time due to the relatively large number of research informants.

RESULTS AND DISCUSSION

The utilization of technology and information in governance has become a necessity in improving work effectiveness and efficiency, but reality shows that achieving success in the application and development of information technology systems in government institutions faces various challenges. There are several strategies that must be prepared by the village government in facing the digitalization era as explained by Heeks, namely as follows:

1. Institutional Readiness

Institutions are a set of norms and regulations that grow in society which are sourced from the fulfillment of basic needs and have a concrete form of association (Erniyanti & Syaputra, 2023; Lowndes, 2020). Institutions that exist in society are the essence or main part of society and its culture (Mamurov et al., 2020). Institutions as rules of the game and organizations play an important role in regulating the use/allocation of resources in an efficient, equitable and sustainable manner (Utomo & Pratama, 2023).

The village government as a government institution has a very crucial role in encouraging the success of governance, therefore in welcoming the era of digitalization the village government must have institutional readiness that is able to support the implementation of electronic-based governance, institutional infrastructure readiness is important in the

implementation of e-government to create a strategy to increase the capacity and ability of institutions (Alfiansyah Halomoan Siregar et al., 2019; Bizimana, 2020). This is related to the institution's support in improving the ability of Human Resources in using Information Communication Technology through training, seminars and workshops. There is institutional support in providing facilities and infrastructure that support the use of Information and Communication Technology, as well as institutional support for the provision of budgets for the use of Information and Communication Technology.

Village government support in implementing information technology (IT) is very important to improve efficiency, transparency, and services to the community, without strong institutional support from the village government, all programs and activities in the village will not run optimally. With strong village government support, the implementation of information technology can provide significant benefits for development and community services at the local level.

The village government in Bengkalis Regency from an institutional aspect has adequate readiness in facing the digitalization era, with many technology-based applications managed by the village. In order to face the digitalization era, the village government has maximally supported the process of developing village officials through trainings organized by the local government to support the use of technology at the village level.

In addition, the village government has also provided support for the provision of infrastructure and budget to support the implementation of various applications in the village, this can be seen from the provision of computers and other electronic devices in supporting the operation of various applications in the village.

2. Human Resources Readiness

Human resources (HR) refer to all the potential possessed by individuals or groups in an organization or society that can be used to achieve certain goals (Yong et al., 2020). Human resources involve aspects such as knowledge, skills, experience, motivation, creativity, and other abilities possessed by these individuals (Hitka et al., 2019; Karman, 2019). Human resources are an important factor in the success of an organization (Sony & Naik, 2020). Effective management of human resources can increase productivity, employee motivation, and job satisfaction, which in turn can contribute to the achievement of organizational goals. Therefore, wise and strategic management of human resources is key in the world of business and organizations (Garcia-Arroyo & Osca, 2021).

In organizing the village government, it cannot be denied that the resources of the village apparatus are one of the elements and at the same time the most important asset. This is because it is only through the resources of the village apparatus that other resources owned by the village can function and be utilized optimally. Therefore, the resources of the village apparatus should be a major concern and priority for every village. However, in order for the apparatus resources owned by the village to be able to make the best contribution to improving the capabilities of the

village government, it is necessary that the village apparatus resources have the knowledge and skills needed to support all village government activities in achieving village goals as set.

The knowledge and skills of the village apparatus are very important in running a digital-based government because the village apparatus is a key factor in whether or not the objectives of the village government are achieved. The low knowledge and skills of the village apparatus can indeed be an obstacle in running a digital-based government. This is because digital systems are information systems that use information technology, so they require special understanding and skills in their use.

Knowledge and skills are elements that are inherent in an individual, which are useful as guidelines and support for ease in various activities of daily life including in carrying out work tasks (Tang et al., 2020). Knowledge and skills can generally be obtained, both through formal education in educational institutions and informally such as from literature materials and work experience and the environment (Wardhani & Pujiono, 2022).

Knowledge can essentially be understood as a person's mastery of a field of knowledge, which is very useful in supporting the implementation of his job duties (Bergström et al., 2022; Karman, 2019). Meanwhile, skills are intended as a level of proficiency that a person has in carrying out his job duties (Sedyastuti et al., 2021). Skills are generally acquired through specialized training and work experience (Indriyani, 2020).

The knowledge and skills of village officials in the utilization of technology and information in the administration of village governance are still very low, this can be seen from the number of village officials who do not properly understand the procedures for using existing applications in the village, so it can be concluded that from the aspect of human resources, the village government in Bengkalis district does not have qualified readiness to organize a digital-based government by utilizing technological advances, especially in operationalizing applications that are mandatory in the village.

3. Infrastructure Readiness

Infrastructure refers to the set of physical facilities and support systems needed to run a community, organization, or country (Mohebbi et al., 2020). Infrastructure plays a crucial role in supporting various economic, social, and political activities (MacArthur et al., 2020).

Technology tools are any type of tool, device, or system that is used to facilitate or enhance the use of technology in various aspects (Latip, 2020). Technology tools can include hardware (such as computers, printers), software (such as application programs, operating systems, and development software), the proper use of technology tools can help improve efficiency, productivity, and capabilities in a variety of areas (Saputra et al., 2023).

The Village Government as a public institution that carries out its duties and functions as the organizer of the Village Government must be able to carry out its mandate in order to realize the progress and development of the Village, to carry out its duties and functions through various Village

Government activities should be supported by adequate facilities and infrastructure and other representative facilities.

In facing the era of digitalization, the readiness of technological infrastructure and telecommunications network infrastructure is needed. Technological infrastructure refers to the physical and software circuits that make up the basis of an organization's or community's information technology system. It includes various elements needed to support the development, management, and operation of information technology, this technological infrastructure can be in the form of hardware such as the availability of computer equipment to support the implementation of electronic-based village governance.

Meanwhile, telecommunications network infrastructure is a series of systems consisting of hardware, software, and other technologies used to transmit information from one point to another in a network. Telecommunications network infrastructure is very important in today's digital era, because almost all businesses, organizations, and individuals rely on telecommunications technology to access information, communicate, and conduct transactions online. A good telecommunications network infrastructure can improve efficiency, accelerate access to information, and facilitate global collaboration. The implementation of Information and Communication Technology in an organization or public institution certainly needs to be supported by the availability of telecommunications network infrastructure or the internet.

From the aspect of technological infrastructure, the village government in Bengkalis Regency has met the needs of computer equipment with specifications that are able to support the administration of government that utilizes information technology, meaning that the availability of technological devices in implementing a digital-based government system is adequate, but to run applications managed by the village, it has not been supported by the readiness of internet network infrastructure which is an absolute requirement that must be prepared to welcome the era of digitalization at the village level, because there are still many villages that have not been reached by internet networks, resulting in less than optimal running of various applications in the village.

4. Awareness and Commitment Development

Awareness and commitment are two concepts that are interrelated in an effort to achieve certain goals, be it in the personal or organizational field (Grego-Planer, 2019; Haldorai et al., 2022). Awareness refers to a person's level of understanding of an issue or situation, and their willingness to act on that understanding (Döringer, 2021). A person who has a high level of awareness tends to better understand the importance of the goal to be achieved, and thus, is better able to take appropriate action to achieve the goal. Meanwhile, commitment refers to the level of attachment or involvement of a person towards the goal to be achieved (Amani & Halmawati, 2022). Someone who has a high level of commitment tends to be more passionate and act consistently to achieve the goal, even in the face of obstacles or difficulties.

Awareness and commitment play an important role in achieving individual or organizational goals (Imamoglu et al., 2019). In an organizational context, for example, employees with high levels of awareness and commitment tend to be more motivated and act more effectively in achieving organizational goals. In addition, awareness and commitment also play an important role in achieving larger goals, such as sustainable development or reducing social inequality. Awareness of the importance of such goals and a commitment to contribute to achieving them can motivate individuals or organizations to act more proactively and sustainably. Awareness and commitment are two concepts that are interrelated in an effort to achieve goals, be it in the personal or organizational field (Bashori, 2020). Both concepts play an important role in motivating individuals or organizations to act more effectively and sustainably in achieving desired goals.

In an effort to achieve the successful implementation of digital-based governance, it is necessary to build and develop strong awareness and commitment from all relevant parties to the importance of implementing the digitalization system, both at the policy-making level and the implementing level. With a strong awareness and commitment from those involved in government administration, the implementation of the digitalization system will get the support needed to achieve the desired success.

The commitment and awareness of the village apparatus in Bengkalis Regency in preparing for the era of digitalization at the village level is still low, this can be seen from the lack of seriousness of the village apparatus in participating in activities aimed at improving the ability of the apparatus to use technology, especially in running applications in the village. The low commitment and awareness of the village apparatus has an impact on the readiness of the village government in facing the era of digitalization at the village level.

CONCLUSIONS AND RECOMMENDATIONS

From the institutional aspect, it shows that the village government has provided maximum support in welcoming the digitalization era by supporting the development of the capabilities of village officials through various training activities and the like organized by the local government, as well as supporting the provision of facilities and infrastructure for the implementation of the management of existing applications in the village.

From the aspect of human resources, it shows that the ability of human resources at the village level is still low in using technology-based applications managed by the village, both in terms of knowledge and expertise.

Judging from the aspect of the availability of facilities and infrastructure, it shows that the technological devices in the village are well available and adequate to support the implementation of digitalization in the village, but from the aspect of internet network infrastructure, not all village areas in Bengkalis Regency are reached by an adequate internet network so that the use of various applications cannot run optimally.

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Judging from the aspects of Awareness and Commitment Development, that all of them are aware of the importance of the application of technology in governance at the village level so that they are very supportive, this can be seen from the intense local government providing various kinds of training in order to improve the ability of village officials, but there is no strong commitment at the village level, this can be seen from the seriousness of the village apparatus in participating in trainings that have been carried out by the local government, so that various kinds of training that have been held have not had a significant impact on the development of village apparatus resources. Thus, it can be concluded that the village government in Bengkalis Regency does not have qualified readiness in facing the digitalization era.

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