

Obstacles and impacts of the digitalization of village government

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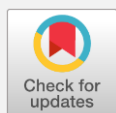
Article Info

Article history:

Submission: 2022-06-29

Accepted: 2022-11-01

Published: -



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ABSTRACT

Village digitalization has been studied extensively as a subject worthy of in-depth investigation. This study was the beginning of mapping the effects, challenges, and impacts of rural digitalization. In practice, there were still various obstacles. This study's objective was to investigate the various elements that affect the viability of digitalization in a rural environment. The authors of this study used a qualitative study approach using literature review techniques to collect data and information regarding the implementation of e-government in the village. Supporting data could be obtained from reference books, news articles from the internet, and research journal publications. The findings of this study showed that global modernization and digitalization could not be separated if village governments did not want to be left behind. It was impacted by elements that hindered digitalization, such as demographics, distrust, value, competence, and complexity. Strategic actions must be implemented to maximize the implementation of village digitalization. This study had consequences for Indonesian public institutions, both theoretically and practically. It is possible to carry out further studies in the form of a village government digitalization plan.

Keywords:

Digitalization; Village; Obstacles; Impact; Governance

Please cite this article in APA style as:

Alfayn, M. A. N., Alfirdaus, L. K., & Setiyono, B. (2022). Obstacles and impacts of the digitalization of village government. *Jurnal Inovasi Ilmu Sosial dan Politik (JISoP)*, 4(2), 149–157. <https://doi.org/10.33474/jisop.v4i2.16386>

INTRODUCTION

This study explored village digitalization by focusing on the obstacles and impacts of digitalization for village governance amid global modernization developments. Through an analysis of the obstacles and impacts of global digitalization, this paper could be applied to scientific studies to expand the academic literature. Digitalization is unavoidable assimilation, according to the concept stated in Law No. 06 of 2014 concerning Villages. Furthermore, the Regulation of Village Government No. 13 of 2020 regarding budget priorities for the use of Village Funds Article 6 paragraph 2/a, then Regulation of Village Government No. 21 of 2020 regarding general guidelines for village development and empowerment in Article 11 paragraph 1-5. However, in practice, digitalization has not been able to be utilized optimally. Previous literature reviews of experts had diverse knowledge

about various stigmas of information and communication technology applied in rural areas concerning administration, agriculture, transparency, and public services framed in village governance.

Initially, the objective of digitalization was used in the classic business transformation in modern industrial digitalization (Huđek et al., 2021). The development of an increasingly global world, such as digitalization, impacts all aspects, including the application of digitalization into the government system. Government digitalization services aim to use the opportunities offered by ICT (*Information and communication technologies*). In particular, the Internet profoundly transforms ideas about governance and public activity. Currently, many people still find it challenging to contextualize digital changes and have not been able to keep up with the development of digitalization relatively. Inclusive Information Communication Technology (ICT) has quickly provided several features in various sectors, especially for *government* and *citizens* (Alhanatleh et al., 2022). Adopting digitized services into *e-government* is part of innovative practice. However, there are several reasons why local governments have been so slow in terms of innovation (Norris & Reddick, 2013).

In recent years, the idea of digitalization has become increasingly relevant internationally. Many experiences in certain countries have shown that new technologies could be a tool for reinventing the way public machines work by changing user activities and services, improving quality, and significantly reducing production costs (Bevilacqua, 2002). However, it is not enough because the social culture in each country is different. Understanding that sociocultural is a complex whole, which includes all knowledge, beliefs, public services, morals, customary government law, governance, and all other capabilities and habits acquired by humans as a member of society.

This paper contributed by cataloging the obstacles and impacts of digitalization on village governance with the adoption of technological solutions in rural areas. Currently, the Indonesian government promotes the digitalization program, rooted in Presidential Instruction No. 3 of 2003. The village becomes the spearhead in the application of digitalization (Irland Fardani). A study by Epstein, (2022) and Nganje (2020) showed that every country has adopted digitalization services to deliver information services to the government, especially in developing countries.

According to Witri (2022), village digitalization is characterized by conventional public services using paper and physical documents, slowly changing and shifting to online services using internet technology facilities through websites, *e-forms*, and applications. The view (Hirman, 2022) of digitalization policy is to design a web-based village document management information system in the village that can facilitate the management and search for documents or archives when needed. Finally (Fardani et al., 2021), the implementation of *Smart government digitalization* is formed. The policy of *good village governance* (Zhang & Kimathi, 2022) is the openness of the administrative system in government, such as transparent administrative information, providing open information about bureaucratic practices, reporting necessary information to citizens, and enabling citizens to understand bureaucratic practices.

In practice, there were still obstacles. The analysis by Ismail et al. (2022) explained that the obstacles to implementing the rural digitalization system have failed in *good village governance*. The project failure rate was estimated to be over 60 percent (Ismail et al., 2022). Furthermore, the findings of Ferro et al. (2011) and Okunola et al., (2017) included factors that hindered the obstacles to digitizing rural communities, including low income, limited education, low literacy rate, minority background, employment status, age, area of residence, disability, gender, single parent, race, and social class. The obstacles to digitalization

assessed by Norris & Reddick,(2013) were because most cities have limited communication budgets and minimal resources that can be used for potential service improvement.

Digital governance is a transition to government management with multiple objectives, multiple stakeholders, conflicts of interest, uncertainty, and risk, all contributing to the politics of digitizing village governance (Qin et al., 2022). Many researchers investigated the evolution of rural digitalization development based on the perspective of technology implementation (Ayim et al., 2022; Zhang & Kimathi, 2022). The result of this extensive literature analysis was the need for mapping the perspective of obstacles and impacts of rural digitalization governance.

The village is a legal community unit with territorial boundaries to design and manage government affairs and the interests of the local community through community initiatives, traditional rights, and origin rights, which are agreed upon and respected in the government system of the Unitary State of the Republic of Indonesia (Article 1 point 1 of Law No. 6 of 2014 concerning Villages). Most of the livelihoods of rural communities, in general, are farmers because most of the geographical area of the village is rice fields. The village government, in this case, is the regulator and organizer of government affairs and the local community's interests in the government system of the Unitary State of the Republic of Indonesia, as stated in Article 1, paragraph 2 of Law No. 6 of 2014 concerning Villages. The division of Indonesia's administrative regions in village administration is under regional sub-districts. The village head is the village leader. Village government is a government administration subsystem, so villages have the authority to design and manage community interests (Litanianda, 2019).

At this time, a study by Hasya et al. (2020) reported that 76.2% stated that village administration had difficulties. Village government management in carrying out population administration and official letters were still manual, i.e., data recording still using physical books. Some use programs such as Microsoft Excel and Microsoft Word. Such a system creates several obstacles, such as the long reporting time, the recording of community data that is not integrated due to separate files, and the difficulty of finding specific data. Therefore, it has not been well documented. This limitation causes the lack of public service infrastructure intended for rural communities.

An analytical framework is needed to identify needs and problems systematically and comprehensively to accelerate the government's sustainable digital transformation assisted by digital technology and services. Therefore, in response to the problems above, this study aimed to answer the following questions: (1) what was demographic information of village digitalization for? (2) How was the village digitalization process? (3) What were the perceived obstacles and impacts in the face of rural digitalization transformation?

METHOD

This study could be considered an assessment study as an in-depth literature review on a particular topic of interest, rural digitalization. The author mapped the literature in a descriptive concept that considered sustainability in rural digitalization in the form of obstacles and the impact of digitalization on village governance which previous experts have reviewed. The author conducted a series of in-depth studies on the issue of digitalization to obtain these three concepts. The authors of this study used a qualitative study method and a *literature review* approach to obtain data and information about the adoption of *e-government* in the village. Reference books, online news, and study journal papers included supporting data.

RESULT AND DISCUSSION

As noted earlier, digitalization is becoming an increasingly important topic (Martin-Shields et al., 2021) for researchers and policymakers working in a wide range of sectors, including economic development, urban planning, and city government. Much empirical work on technology and digitalization in rural and urban life has been carried out in rich countries such as New Zealand, Australia, the UK, and the European Union (EU).

Contextualization of digitalization in Indonesia was published through Presidential Instruction No. 03 of 2003, which examines the digitalization strategy and the government's digitalization goals, in which some considerations need to be implemented with current conditions through six digitalization strategies, including: (1) developing an intelligent and reliable service system, and affordable for the wider community, (2) organizing the management system and work processes of the government and autonomous regional governments holistically, (3) utilizing information through technology optimally, (4) increasing the participation of the business world and develop the telecommunications industry and information technology, (5) developing human resource capacity in both the government and autonomous regional governments, accompanied by increasing community *e-literacy*, and (6) carrying out development systematically through realistic and measurable stages.

This strategic policy was pushed back with the issuance of Law No. 06 of 2014, requiring each village to have a digital-based village information system, then Central Java Governor Regulation No. 47 of 2016 regarding guidelines for the preparation of SID (*Village Information System*). The development of digitalization has penetrated the law in Indonesia so that it relates to stakeholders who have been indirectly affected by technology. Nevertheless, the Minister of Villages, Development of Disadvantaged Regions and Transmigration, Abdul Halim Iskandar, emphasized that digitalization at the village level needs to be balanced with an adequate increase in digital literacy. He mentioned that there were many negative impacts of using internet-based gadgets. His policy encouraged the development of digital technology to improve community services (Novri, 2021).

On the other side, quoted through an upload by the Ministry of Communication and Informatics, the village digitalization development aims to advance the economy of rural communities through community empowerment and village potentials that can provide economic benefits. The government is very supportive and continues to increase the acceleration of access and development of digital infrastructure even though the acceleration is not evenly distributed in all corners of the village. The Ministry of Communication and Informatics emphasized that empowerment must be adjusted to the potential of village human resources and natural resources, elements of local wisdom, community cultural characteristics, and the benefits of digital technology. A classical culture still strong in society in agriculture, administrative services, economy, and communication will be transformed into a digital system (Kominfo, 2020).

Introducing new technologies transforms manual work into more complex tasks globally and digitally. Digitalization contributes to the growth of sustainable development. Today's technological transformations affect the working system and society as a whole, including culture. Manual work that is often applied in rural areas, such as *derep pari*, *tandur*, and *nggaru*, has been done through technology. The mix of activities required to perform in modern society will continue to evolve as technology-enabled work environments develop, leading to the need for future generations of workers to develop digital literacy and lifelong learning skills at an early age. Digitalization will change the classical culture of the manual system into a modern digital-based system. A study by the World Economic Forum for the Future of Employment also showed that by 2022, 38% of businesses worldwide expected to

add new, productivity-enhancing cultural roles to the workforce. More than a quarter expected automation to create a new role in the business (Huđek et al., 2021).

In the context of the economy, advances in information and communication technology have become one of the driving factors for the publication of natural beauty in the village. With this digitalization, information and communication technology development has increased the choice of media used and utilized by rural communities to realize empowerment and regional development by networking technology media. This way will be easier. It can be one of the driving forces for the village to become a popular tourist area. The presence of information and communication technology can have tremendous impacts on the community's economy. One of them is tourist villages. The speed and distribution of this media in producing information are breakneck and efficient in space and time (Sulistiyowati, 2017).

In the future, companies will increasingly use contractors who work on specific tasks and intend to use the workforce more flexibly by deploying digital out-of-office and decentralizing operations. The evolution towards a digital society is not about getting people to use technology but rather how technology affects and changes people's lives. Hence, from the perspective of inclusion, individuals in social and economic behavior can change the cultural perspective of production into relevant policy objectives and analysis subjects in the modern world. The view of Haase & Buus (2020) conveys that communities and individuals have no choice but to pursue digitalization as quickly as possible if they do not want to be left behind.

Analysis of a study by Ferrari et al. (2022) suggested that digitalization was primarily rooted in the cultural, socio-demographic, and emotional aspects and tendencies of individuals inhabiting rural communities. If identified, there were several types of obstacles: (1) *Demographic*; this obstacle lay in the problem of age, logistical isolation of rural communities, poverty, population density, and labor which made rural areas a place where their existence was minimal. (2) *Distrust*; this obstacle was oriented to the lack of public trust in the security and services on the internet. (3) *Fear*; fear of real-based threats, such as the risk of dependence on technology, and the cost of technology, made people prefer manual systems, also related to privacy issues related to data sharing. (4) *Values*, particularly attachment to traditional ways of working and identity. Heretofore, people were reluctant to use much technology because it did not match their image as farmers (e.g., land cultivators). (5) *Competence*; these obstacles lay in the general lack of higher education, specialized knowledge of technology, and practical skills to handle technology. Then, the emergence of digital debt made people reluctant to go digital. (6) *Complexity*; connected between individuals and feelings by complex regulatory systems, technological complexity, and the paradoxes of various technological solutions available in the market.

Analysis of the study by Manullang & Krisnadwipayana (2021) stated by looking at the situation of rural communities when the emergence of internet technology has removed the boundaries of differences between urban and rural communities. Internet technology has brought significant changes in the lives of rural people. In almost all cases, information obtained by urban communities was the same as information obtained by rural communities. The application of *e-government* within the scope of the village government made the public service center closer to the community (Oliveira & Siqueira, 2022) by building on the free flow of information relating to public interests that could be accessed directly by people in need (Ahmad et al., 2021). The concept of digitalization was also interpreted (Ciesielska et al., 2022; Dawes et al., 2004) and, as a whole related to the use of ICT in the provision of digital services to support government business processes, citizen engagement, accountability, and transparency.

Results of a study by Ferro et al. (2011) and Okunola et al. (2017) showed that several factors influenced the obstacles to digitizing rural communities, including low income, limited education, low literacy rate, minority background, employment status, age, area of residence, disability, gender, single parent, race, and social class. Regarding performance, the experts identified digitalization indicators of different levels of *e-government* maturity. This analysis was also confirmed by Friemel (2016), which identified reasons for not using the internet, due to use that was too complicated, learning effort required, fear of security, concerns over technical difficulties, help from others to find information and send messages, high costs, no support, limited hearing, and vision loss, annoying content, problems with memory, low content credibility, lack of time and dexterity. Additionally, the analysis by Ciesielska et al. (2022) reported that the view of the online space and the growing fear of possible fraud and abuse required special attention to this issue when developing rural digitalization services.

Village digitalization Ferrari et al. (2022) could positively impact sustainability in terms of greater environmental control and community welfare. At the same time, digitalization could also have a disruptive effect, with the marginalization of actors unable to cope with change. When developing new systems for rural areas, requirements engineers should carefully consider the domain's specific socio-economic and sociocultural characteristics to maximize potential positive effects while reducing negative impacts. Based on the perspective of the Danish national government (2018) (Haase & Buus, 2020), *up-to-date* and proactive digitalization of the public sector is an essential vehicle for long-term community growth and cohesion. One of the critical areas of this development is the digitalization of management tools used by local governments and organizations.

Information and Communication Technology, apart from being able to be utilized by local governments or village governments and organizations, also become a form of digitalization that develops in rural areas and can be a means for communities to develop rural potential, both in the form of natural or artificial products (Putra, 2021). The digitalization process is not only in the form of technology such as laptops, televisions, radios, or cell phones. It can also be in the form of several other electronic devices, such as mixers and ovens that can help bakery business owners develop their businesses. These sewing machines can help someone produce attractive clothes to wear, and so on. After using the products, people use laptops, cell phones, or computers to carry out the product marketing process. The existence of this equipment in the village area proves that the digitalization process has occurred in the village area. It happens because the existence of this equipment makes people more enthusiastic about producing work and introducing their territory to the world.

Information and communication technology is developing rapidly in all corners of the world. However, this development raises concerns about the increasing inequality in the lower middle class (Kurniawatik, 2021). Inequality is defined Ciesielska et al., (2022) as conditions in which people in specific contexts do not have the ability and skills to gain efficient access to global information. As a step that can avoid development inequality between rural and urban areas, a paradigm shift in rural area development is carried out (Ferro et al., 2011), which combines advances in information and communication technology with the form of local wisdom, where both will certainly strengthen each other.

CONCLUSION

Contextualization of digitalization in Indonesia was published through Presidential Instruction No. 03 of 2003, which examined the digitalization strategy and the government's digitalization goals. This strategic policy was pushed back with the issuance of Law No. 06 of

2014, which required every village to have a digital-based village information system. Digitalization could positively impact sustainability regarding governance, services, and public welfare. Besides, digitalization could also have a disturbing impact on the inequality of society, especially in the lower middle class, who did not have the ability and skills to get digital access. When developing a new digitalization system for rural governance, a requirement to consider was the socio-economic characteristics of the community so that the potential positive effects could be maximized along with addressing obstacles and reducing negative impacts. However, sociocultural factors, especially those related to demographics and education, were the biggest obstacles to adopting digital technology, including the cost of technology adoption. One of the most influential technology issues was connectivity. Meanwhile, institutional regulations also influenced the obstacles, especially those related to data management.

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