



## Transformation of Public Services of Village and Village Governments by Era Digital

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**Abstract.** *This study aims to analyze the transformation of public services at the village and sub-district levels in the digital era, as well as identify factors that affect the existing service gap, such as limited human resources (HR), low digital literacy of village apparatus, and lack of supporting infrastructure. Although the central government has launched various digitalization programs, such as digital device assistance and human resource training, many villages still face obstacles in implementing technology-based services. This study uses a qualitative approach with case studies in several villages in Indonesia to explore the experiences of village officials and communities related to the digitization of public services. The results of the study show that the majority of village officials have difficulty operating digital technology due to lack of training and digital literacy, while limited infrastructure also hinders the optimization of internet-based services. Village communities who are increasingly aware of the importance of digitalization expect faster and more efficient services, but the digital divide is the main barrier. This research provides recommendations for village governments to increase the digital capacity of village apparatus through continuous training and strengthening digital infrastructure. Overall, the digitization of public services in villages has great potential to improve the efficiency and quality of services, but requires more attention to improving skills and technological facilities at the village level.*

**Keywords:** *Public Service Transformation, Digital Literacy of Village Apparatus, Village Digitalization, Digital Infrastructure, Village Human Resources Training*

### 1. INTRODUCTION

The transformation of public services in Indonesia, especially at the village and sub-district government levels, has undergone significant changes in line with the development of digital technology (Natika, 2024). In this digital era, people increasingly expect fast, transparent, efficient, and technology-based public services (Indraswari, 2024). Village and Village Governments, as the spearhead of public services, have a very important role in realizing these services (Saidin et al., 2024). According to Law Number 6 of 2014 concerning Villages, one of the objectives of regulation on Villages is to improve public services for village communities. The village government is obliged to provide and improve services to the community (Law Number 6, 2014). In this case, the Public Service Law (UU) Number 25 of 2009 is a reference that requires the government to provide quality public services to the community (Law Number 15, 2009). However, although this law provides a clear legal basis, the reality on the ground shows that there is a gap between the community's demand for quality public services and the conditions of services provided by most villages and sub-districts in Indonesia.

In public service theories, such as New Public Management (NPM) and Digital Era Governance, it is the foundation for the transformation of public services at the village and sub-district levels in the digital era. NPM emphasizes efficiency, community-oriented, and decentralization, which is realized through the adoption of digital platforms such as online administration systems, mobile-based reporting applications, and integrated service portals to cut bureaucracy (Hood, 1991). Meanwhile, the principle of Digital Era Governance strengthens transparency and citizen participation by utilizing information technology, for example through service tracking dashboards or social media for public feedback (Dunleavy et al., 2011). This transformation not only accelerates service processes, such as the management of certificates or social assistance, but also increases institutional accountability and encourages active community participation. With the integration of technology, Village and Village Governments adapt to be more responsive to the needs of citizens, while supporting sustainable development goals through inclusive and future-oriented governance (Karinda et al., 2024).

One of the biggest challenges faced by village and sub-district governments in providing optimal public services is the limitation of existing Human Resources (HR) (Zaman et al., 2022). Even though Indonesia has entered the digital era, most village and sub-district government officials are still limited in terms of digital literacy. The 2022 report of the Ministry of Villages, PDT, and Transmigration (Kemendes PDTT) shows that only 12.4% of villages in Indonesia have good information technology (IT) capacity. The main obstacles faced are the limited human resources in village apparatus in operating digital devices, as well as the lack of digital literacy training to improve these abilities (Ministry of Villages, Development of Disadvantaged Regions, and Transmigration, 2022). This results in unpreparedness in implementing digital technology that can speed up and simplify the public service process. In many villages, there is still a gap in digital skills that greatly affects the effectiveness of the services provided (Fajar, 2021). Especially with the demands of the public who are increasingly aware of digital needs, many of them hope for services that can be accessed online, such as the management of administrative documents, service information, and others that can be done easily through applications or digital platforms (Santoso et al., 2024).

In addition, although the central government has pursued various assistance and empowerment programs for villages, many of them have not been implemented optimally (Siwal et al., 2018). Examples of assistance and empowerment programs for villages that are not implemented optimally due to the lack of skills of village officials include the Digital Village Program and the digital-based Direct Cash Assistance Program (BLT). In the Digital Village Program, the central government provides assistance with technological devices such

as computers, internet network devices, and applications for administration and public service management. However, many village officials have difficulty operating these devices due to the lack of digital literacy training (Warta Pemeriksa, 2023). In this context, efforts are needed to increase the digital capacity of village officials, so that they can be better prepared to face challenges and utilize technology to accelerate and facilitate public services at the village and sub-district levels.

Digital literacy theory is a crucial foundation in the transformation of public services of Village and Village Governments in the digital era, because it not only emphasizes technical ability to use technology, but also a critical understanding in accessing, evaluating, and utilizing digital information responsibly (Gilster, 1997). With low digital literacy, many village officials find it difficult to use the devices and applications provided, so that public services that should be faster and more efficient actually become slower and less effective (Rodiyah & Bolanitan, 2023). Increasing digital literacy for both village officials and the community is needed to ensure that initiatives such as online service applications, village information systems, or citizen participation platforms can be adopted effectively (Miskan et al., 2024).

Based on this background, this study aims to analyze the transformation of public services in villages and sub-districts in the digital era, as well as identify factors that affect the existing service gap. In addition, this research also aims to provide recommendations that can help the village government in increasing the digital capacity of village apparatus and encourage the digitalization of village institutions so that public services at the village level can be more efficient, effective, and in accordance with the demands of the times. Many assistance programs from the central government are not implemented properly due to the limited digital skills of village officials. Therefore, it is important to create policies that support the improvement of digital capabilities at the village level, so that the assistance provided can be well received by the community and can be carried out effectively.

This research is expected to provide recommendations for village governments to increase the digital capacity of village apparatus. By improving digital skills, village officials can be better prepared to face the growing demands of digital-based public services. In addition, this research can also provide recommendations on the importance of institutional digitalization in villages, which includes the use of information technology to facilitate various aspects of village administration, ranging from document management, to the delivery of information to the community.

## **2. RESEARCH METHODS**

This research uses a qualitative approach to deeply understand the phenomenon of public service transformation in villages and sub-districts in the digital era. The qualitative approach was chosen because the focus of this research is to explore the perceptions, experiences, and views of village officials and communities related to the implementation of technology in public services. Qualitative research also allows researchers to obtain richer and more holistic data on the challenges and opportunities faced by village governments in facing the demands of digitizing public services (Creswell, 2018).

The method used in this study is a case study, with research locations in different villages and sub-districts in Indonesia. The selection of this location aims to obtain a broader picture of the conditions and problems faced by village governments in various regions. The case study was chosen because it provides an opportunity to explore more deeply the context and dynamics that occur in each village or sub-district, as well as analyze how digitalization policies are implemented and accepted by village officials and local communities.

The data sources in this study consist of two main types, namely primary data and secondary data. Primary data was obtained through in-depth interviews with village officials, village heads, and other related parties who have a role in public services in the village or sub-district. The interviews were conducted in a semi-structured manner to provide space for the interviewees to express their opinions openly, but still lead to topics relevant to the research. In addition, direct observation in the field was also carried out to see firsthand the condition of public services in the village, the use of technology in services, and the interaction between village officials and the community.

Secondary data was obtained from relevant documents, such as public service performance reports, government policies related to village digitalization, and statistical data on the level of digital literacy in the research area. These documents provide a broader context regarding government policies and the condition of villages in terms of public services and technology.

Data analysis was carried out using thematic analysis techniques, which focused on identifying and grouping the main themes that emerged from the interview and observation data. The first step in the analysis is the transcription of interviews and organizing data based on certain categories, such as challenges in digitalization, the level of digital literacy of village officials, and community expectations related to digital-based public services. After the data are grouped, the researcher performs interpretations to identify patterns and relationships between themes that can provide insight into the phenomenon being studied.

Overall, the qualitative approach in this study allows researchers to obtain an in-depth picture of the challenges and potentials faced by village governments in implementing digital-based public services. Through this method, this research not only focuses on quantitative data that is numerical, but also pays attention to social, cultural, and structural contexts that affect the effectiveness of public services at the village level.

### **3. RESULTS AND DISCUSSION**

In this study, it was found that the transformation of public services in villages and sub-districts in the digital era still faces a number of significant challenges. Based on interviews with several village officials, village heads, and the community, as well as the results of observations in several village locations, it was found that the gap between community expectations and the ability of village officials to provide digital-based services is very clear. This is rooted in several factors, namely the limited human resources (HR), the low level of digital literacy of village officials, and the lack of infrastructure to support the implementation of technology in many rural areas.

#### **Limitations of Human Resources and Digital Literacy of Village Apparatus**

One of the main findings in this study is the limitation of human resources at the village level which is directly related to the low level of digital literacy. Although some village officials recognize the importance of digitalization in public services, they find it difficult to implement digital technology due to limited knowledge and skills in using digital devices and related applications. This is exacerbated by the lack of training provided by the government to improve the digital capabilities of village apparatus.

For example, in some villages where the research was conducted, many village officials still rely on manual methods in managing administration, such as recording correspondence, managing permits, and recording population data. Although the government has provided several digital tools to facilitate this work, most village officials still do not know how to make the most of the technology. Interviews with village heads in one of the research areas showed that many village officials consider technology to be complicated and take time to learn, which ultimately makes them reluctant to switch to digital systems. This fact is in line with a study in Kedungbocok Village, Sidoarjo Regency showing that the cognitive ability of village officials in understanding technology is still not optimal due to the age factor (Wicaksono & UB, 2018). This is also in line with a survey conducted by the Ministry of Villages, PDT, and Transmigration (Kemendes PDTT) in 2022 showing that more than 50% of village officials in

Indonesia do not have adequate digital skills, while around 60% of them admit that they have never participated in digital literacy training, which results in low understanding and ineffectiveness in implementing public service digitization programs such as e-administration and digital-based population data management (Ministry of Villages, Development of Disadvantaged Regions, and Transmigration, 2022).

### **Limitations of Digital Infrastructure in Villages**

Another factor that greatly affects the implementation of digital-based public services in villages is the lack of digital infrastructure. Many villages in Indonesia, especially those located in remote areas, still have difficulty accessing adequate internet (Koswara, 2024). This study found that in some of the areas sampled, internet access is still limited, even in some places there is only internet access through unstable and often intermittent cellular networks. This hinders the access of village communities to get digital-based public services that should be easier and faster. In addition, the lack of computer facilities and other digital devices is also a significant obstacle (Santoso et al., 2024). Although some villages already have digital devices, they are not enough to accommodate the increasing need for public services, especially in a pandemic situation that has forced many activities to switch to digital platforms. Researchers found that many villages still rely on old devices or even do not have adequate computer devices to manage digital-based services.

Observations show that although some villages have access to the internet, the speed and stability of internet connections are often a major obstacle in accessing digital platforms. This causes services that should be more efficient to become slower and hampered. In some cases, applications provided by the central government to facilitate administrative management in villages cannot be used optimally due to unstable networks, which leads to frustration for both village officials and the community. In a report by the Ministry of Villages, PDT, and Transmigration (Kemendes PDTT) in 2022, it was stated that more than 40% of villages in Indonesia still face limited adequate internet access, especially in remote areas. Only about 25% of villages have a stable and fast internet connection, while the rest have difficulty accessing digital platforms for public services (Ministry of Villages, Development of Disadvantaged Regions and Transmigration, 2022). This limitation hinders the implementation of e-administration systems, online document management services, and various other public service applications that rely on a stable and fast internet connection. This causes public services in many villages to not run optimally and reduce service efficiency and transparency (Mediana, 2024).

### **Village Community Awareness of Digitization of Public Services**

On the other hand, the awareness of village communities about the importance of digitalization in public services is increasing. This can be seen from the many complaints submitted by the community regarding the slow service provided by the village apparatus, especially in the management of administrative documents. The Ombudsman of the Republic of Indonesia reported community complaints related to services in villages, including a lack of understanding from service providers of regulations and problems in administration (Ombudsman, 2021). A study in Sengkong Village, Tana Tidung Regency shows that the performance of village officials in public services has not been maximized, with problems such as a lack of technological capabilities, knowledge, and discipline (Lestari, 2022). Village communities have begun to realize that digitalization can speed up the service process and facilitate access to information (Saputra et al., 2024). They want village services to be carried out more transparently, efficiently, and quickly, without having to come directly to the village office.

However, despite the growing awareness of the need for digitalization, many rural communities are unable to fully utilize digital-based services due to their limited understanding and ability to use technology (Fauzan, 2024). The study found that many rural communities feel hindered by their digital literacy limitations, even though they know that digital services can provide convenience. Therefore, despite the demand from the public to improve digital-based services, the biggest challenge is how to educate the public about the effective use of technology. Education and assistance must continue to be carried out to the community to maximize public services digitally (Ambarsari et al., 2024). People who have good digital literacy skills will more easily access information, utilize technology-based public services, and actively participate in various activities that rely on digital platforms, thereby improving the quality of life and participation in development (Gilster, 1997). Because digital transformation in public services supports sustainable development goals through inclusive and future-oriented governance, which is in accordance with the theory of Digital Era Governance (Dunleavy et al., 2011). Efficiency in public services will also occur if digital transformation is carried out in line with the theory of New Public Management (NPM) (Hood, 1991).

### **The Role of the Government in Encouraging Village Digitalization**

The central government has launched various programs and policies to encourage digitalization at the village level, such as digital device assistance, human resource training, and the provision of internet access (PPID Barowa, 2024). The Digital Village Program

launched by the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration (Kemendes PDTT) in 2025 is one of the priorities for the use of Village Funds. This program includes the development of internet infrastructure, digital literacy training, and technology integration in village administration services (Law Number 62, 2024). However, the findings of this study show that the implementation of these programs is often not optimal. Many village apparatus do not receive sufficient training to manage digital technology, and in some cases, the devices provided by the government are not properly maintained or used to their full potential.

In some cases, despite the government's provision of device assistance and training, the lack of attention to the sustainability of training and maintenance of the devices has led to applications that would otherwise be able to help public services from being used optimally. For example, in one of the villages studied, the application for population administration provided by the government was not used optimally due to the lack of understanding of village officials on how to operate it, as well as the lack of adequate network availability to support the use of the application.

### **Recommendations to Increase Digital Capacity in Villages**

Based on the results of the research, there are several recommendations that can be submitted to increase digital capacity in the village. First, the government needs to increase more intensive and sustainable training programs for village officials, especially in terms of the use of information technology in public services. The training must be adjusted to the needs and level of understanding of village officials, and be equipped with more applicable materials, such as how to use digital devices for administrative management, population data management, and information delivery to the community (Nursetiawan et al., 2024). Second, the government needs to pay attention to the digital infrastructure aspect in the village by providing a more stable and fast internet network. In addition, the provision of adequate digital devices is also important to ensure that digital-based services can run smoothly (Agastha & Fikri, 2024). The village government also needs to be given support in maintaining and maintaining digital devices so that they can continue to be used optimally.

Third, to improve the digital literacy of village communities, there is a need for a more comprehensive education program on the use of digital technology, both through training and direct counseling. Thus, village communities will be more prepared and confident in using digital-based public services (Santoso et al., 2024). Overall, although there are significant challenges in implementing digital-based public services in villages and sub-districts, there is



a lot of potential to improve the efficiency and quality of public services by utilizing technology. This research provides important insights into the obstacles faced and the steps that need to be taken to encourage the digitalization of public services in villages, which will ultimately improve the overall welfare of the village community.

#### 4. CONCLUSION

The conclusion of this study shows that the transformation of public services in villages and sub-districts in the digital era faces various significant challenges, such as limited human resources, low digital literacy of village apparatus, and inadequate infrastructure. Although the central government has launched various assistance and empowerment programs, such as digital device assistance and human resource training, these programs are still not implemented optimally due to the lack of proficiency of village officials in utilizing technology. This causes ineffectiveness in the implementation of digital-based service systems, which leads to slow services to the community. Therefore, increasing digital capacity for both village officials and the community is very important so that public services at the village level can run more efficiently and effectively.

The limitation of this study lies in the limited focus on a few villages as a sample, so the findings produced do not necessarily represent all village conditions in Indonesia. In addition, reliance on qualitative data can reduce the objectivity of existing findings. Further research can be expanded by involving more villages and using quantitative methods to provide a more comprehensive picture. In addition, further research also needs to explore more concrete strategies to improve digital literacy and ensure the sustainability of existing digitalization programs.

#### REFERENCES

- Agastha, S., & Fikri, R. (2024). Implementasi pelayanan publik berbasis aplikasi digital desa (Digides) di kantor desa Pandau Jaya Kecamatan Siak Hulu. *Jurnal Mahasiswa Pemerintahan*, 1(3).
- Ambarsari, I. F., Azizah, N., Ansori, A., Al-Faruq, Y. F., & Fahrozi, K. K. (2024). Digitalisasi informasi dan peningkatan kualitas pelayanan publik transformasi desa digital melalui pengembangan website desa Klatakan. *I-Com: Indonesian Community Journal*, 4(1). <https://doi.org/10.33379/icom.v4i1.4041>
- Creswell, J. W. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications. <https://doi.org/10.4324/9780429469237-3>

- Dunleavy, P., Margetts, H., Bastow, S., & Tinkler, J. (2011). *Digital era governance: IT corporations, the state, and e-government*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199296194.001.0001>
- Fajar, I. (2021). Kesenjangan digital tingkat ketiga pada pemuda pedesaan di Kabupaten Cianjur Indonesia. *Jurnal Komunika: Jurnal Komunikasi, Media Dan Informatika*, 10(1). <https://doi.org/10.31504/komunika.v9i1.4260>
- Fauzan, B. H. (2024). Analisis kesiapan digital masyarakat di desa Banyubiru Kabupaten Semarang terhadap digitalisasi perdesaan. *Journal of Politic and Government Studies*, 13(3).
- Gilster, P. (1997). *Digital literacy*. John Wiley & Sons.
- Hood, C. (1991). New public management. In *International Encyclopedia of the Social & Behavioral Sciences* (pp. 10118-10123). Elsevier. <https://doi.org/10.1016/b0-08-043076-7/01180-3>
- Indraswari, D. L. (2024). Membaiknya pelayanan publik berbasis teknologi digital di Indonesia. *Kompas*.
- Karinda, K., Kede, A., Septiana, G. L., Jayalangi, L. O. S., Sibay, S., & Ulfa, M. (2024). Integrasi komunikasi pemerintahan digital melalui situs web resmi: Studi kasus di desa Tontouan, Kecamatan Luwuk. *Jurnal Administrasi Pemerintahan Desa*, 5(2). <https://doi.org/10.47134/villages.v5i2.110>
- Kementerian Desa Pembangunan Daerah Tertinggal dan Transmigrasi. (2022). *Laporan Kementerian Desa, PDT, dan Transmigrasi Tahun 2022*.
- Koswara, A. (2024). Digitalisasi ekonomi di pedesaan: Mengkaji kesenjangan infrastruktur digital di Indonesia. *Jurnal Al Azhar Indonesia Seri Ilmu Sosial*, 5(3).
- Lestari, M. P. (2022). Kinerja aparatur desa dalam pelaksanaan pelayanan publik pada kantor desa Kecamatan Sesayap Hilir Kabupaten Tana Tidung. *Journal Ilmu Pemerintahan*, 10(3).
- Mediana. (2024). Penetrasi internet di kabupaten tertinggal capai 82,6 persen, koneksi masih jadi kendala. *Kompas*.
- Miskan, Iswanto, D., Zohandy, D. E. P., & Sholikha, W. S. (2024). Kompetensi literasi digital aparatur pemerintah desa dalam peningkatan pelayanan publik. *Prosiding Konferensi Nasional Literasi Digital dan Kerelawanan (KNLDK)*.
- Natika, L. (2024). Transformasi pelayanan publik di era digital: Menuju pelayanan masa depan yang lebih baik. *The World of Public Administration Journal*, 6(1). <https://doi.org/10.37950/wpaj.v6i1.2040>
- Nursetiawan, I., Yuliani, D., Taufiq, O. H., Nurwanda, A., Anwar, A. N. R., Sujai, I., & Firmanto, C. (2024). Pelatihan digital leadership bagi perangkat desa di desa Pamokolan Kecamatan Cihaurbeuti Kabupaten Ciamis. *MALLOMO: Journal of Community Service*, 4(2).

Ombudsman. (2021). Potret pelayanan publik pemerintah desa. Ombudsman.

PPID Barowa. (2024). Desa Barowa menerima bantuan dari Kemendes PDTT untuk program desa cerdas. Pemerintah Desa Barowa.

Rodiyah, I., & Bolanitan, Z. O. (2023). Enhancing digital literacy in village government for effective SID program implementation: Peningkatan literasi digital dalam aparat pemerintahan desa untuk implementasi program SID yang efektif. *Indonesian Journal of Public Policy Review*, 24(6).

Saidin, S., Wati, A. M., & Pratama, R. A. (2024). Fungsi pemerintah desa dalam meningkatkan kualitas pelayanan administrasi pertanahan: Studi desa Alebo Kecamatan Konda. *PAMARENDA: Public Administration and Government Journal*, 4(1). <https://doi.org/10.52423/pamarenda.v4i1.7>

Santoso, A., Alfiyah, S., Miftahurrohman, Z., Latifah, D. U. L., & Zidyani, N. (2024). Tantangan dan peluang digitalisasi pelayanan publik di desa Karangsemanding. *Jurnal Ilmu Pendidikan Dan Pembelajaran*, 06(4).

Saputra, D. I., Setiyono, B., & Wijayanto. (2024). Digitalisasi pelayanan publik di desa Kalibuaya Kecamatan Telagasari Kabupaten Karawang melalui penggunaan website. *Journal of Politic and Government Studies*, 13(3).

Siwal, S., Kimbal, M., & Pioh, N. (2018). Efektivitas pelaksanaan tugas pemerintah desa dalam pembangunan di desa Tobelos Kecamatan Ibu Selatan Kabupaten Halmahera Barat. *EKSEKUTIF Jurusan Ilmu Pemerintahan*, 2(2).

Undang-Undang Nomor 15. (2009). Undang-Undang Nomor 15 Tahun 2009 (Republik Indonesia).

Undang-Undang Nomor 6. (2014). Undang-Undang Nomor 6 Tahun 2014 (Republik Indonesia). <https://doi.org/10.1145/2904081.2904088>

Undang-Undang Nomor 62. (2024). Undang-Undang Nomor 62 Tahun 2024 (Republik Indonesia).

Warta Pemeriksa. (2023). Data tak valid, penyaluran BLT desa berisiko salah sasaran. Badan Pemeriksa Keuangan.

Wicaksono, A. Wicaksono, W., & UB, A. R. (2018). Kemampuan aparat desa dalam pemahaman teknologi informasi dan komunikasi menuju electronic desa (e-Desa) pada kantor desa Kedungbocok Kecamatan Tarik Kabupaten Sidoarjo. *JKMP (Jurnal Kebijakan Dan Manajemen Publik)*, 6(2). <https://doi.org/10.21070/jkmp.v6i2.3008>

Zaman, N., Octo, C. W., Dhora, S. T., Yuliaty, F., & Prasetyo, I. (2022). Manajemen SDM perangkat desa dan dampaknya terhadap pertumbuhan UMKM di Indonesia. *Komitmen: Jurnal Ilmiah Manajemen*, 3(2). <https://doi.org/10.15575/jim.v3i2.22728>