

DIGITALIZATION OF INDEPENDENT AND SUSTAINABLE VILLAGES BASED ON LOCAL WISDOM

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ABSTRACT

South Sulawesi, specifically Takalar Regency, has 86 underdeveloped villages. Various government efforts to develop villages to become independent include implementing digitalization in the administrative systems of every village office. Research conducted in the first year has reflected that local wisdom and the value of mutual cooperation have begun to fade, so it is important that this research be continued to digitize villages in Takalar Regency based on local wisdom. The urgency of this research is seen from various problems that arise, such as limited internet access in some villages that hinders the implementation of digital services, low digital literacy among various stakeholders, and the lack of an integrated village information system. The purpose of this study is to analyze and develop the implementation of village digitalization to facilitate access to information and administration in village offices in Takalar Regency and to create independent and sustainable villages without neglecting local identity. The research method used is qualitative with a phenomenological approach. Data collection andThe data used were observation, interviews, and documentation. In addition, focus group discussions (FGDs) were conducted involving 75 informants, including 25 village officials, 20 traditional leaders, and 30 village residents. Data analysis employed the Miles and Huberman interactive analysis model, consisting of data reduction, data presentation, and conclusion drawing. The data was also supported by the Atlas TI measurement tool. The results of this study indicate that digitalization aligned with local wisdom can improve village social and economic resilience. Several indicators demonstrating positive impacts include increased citizen participation in digital deliberations, increased income for local business actors, efficiency of village administrative services, and the emergence of technology-based social innovations. The researchers emphasized the importance of long-term mentoring and regular evaluation to ensure that the digitalization process remains within the framework of sustainable development that does not ignore local values.

Keywords: Digitalization; Village; Independent; Sustainable; Local Wisdom

INTRODUCTION

Indonesia has 83,794 villages, of which approximately 6,803 remain underdeveloped. According to the Village Development Index (IDM) data from the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration, the number of villages classified as "very underdeveloped" in Indonesia has increased over the past five years. The following is the status of Indonesia's Village Development Index/IDM for 2019-2025:

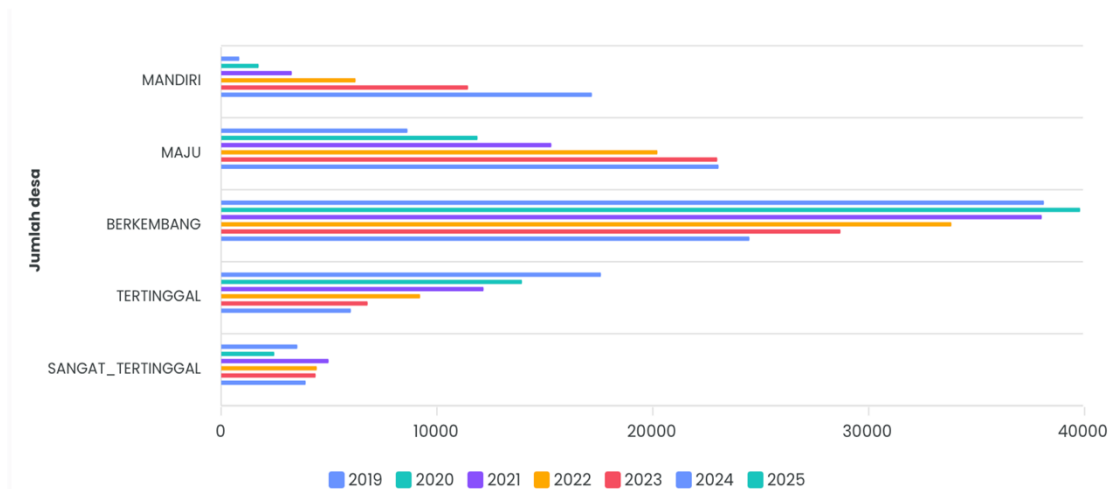


Figure 1. Status of the Indonesian village development index 2019-2025(Rural, 2025)

The era of regional autonomy encourages every region in Indonesia to develop the local potential of each region, including the potential possessed by each village in Indonesia.Indonesia(Hardiyanti, Marzellina, 2022).Implementation of village autonomy inIndonesia is related to the existence of decentralization which has led to the concept of autonomy.(Dian Hotlando Damanik, 2019)One of the main pillars for equitable infrastructure development, especially in underdeveloped, remote, and outermost areas, is internet access and available digital infrastructure.(Ahmad Budiman, 2024). The following is the Indonesian Digital Society Index (IMDI) for 2022-2024:

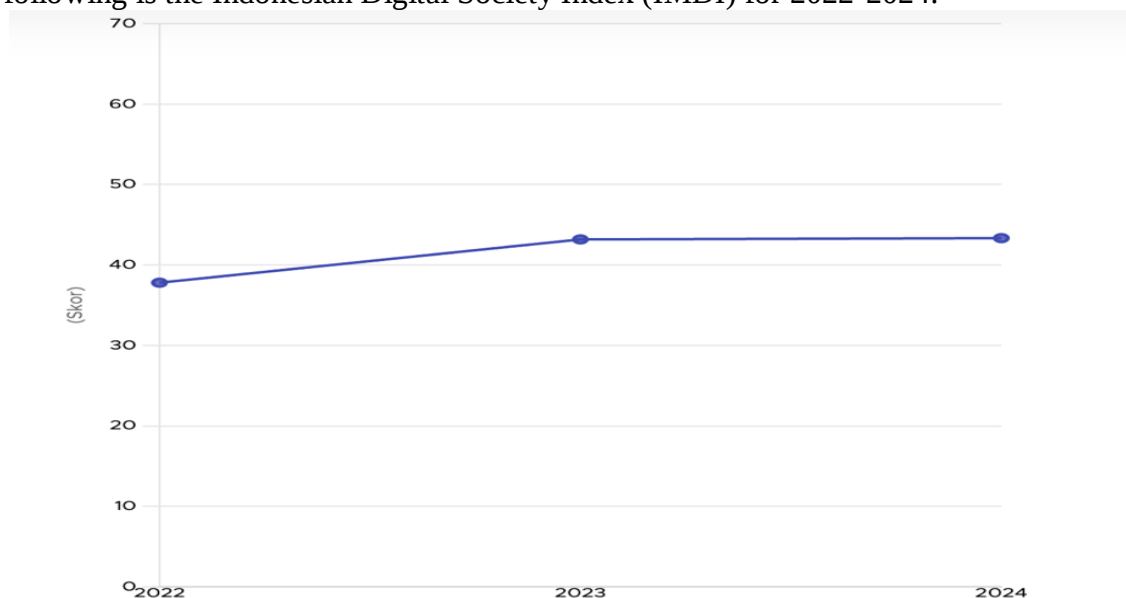


Figure 2. Ministry of Communication and Informatics (Kominfo) 2022-2024

The IMDI in 2022 was recorded at 37.80, a drastic increase in 2023, with the index rising to 43.18. However, in 2024, there was only a slight increase to 43.34, indicating a slowdown in growth.(Human & Informatics, 2024).

Some of the problems that hinder village development in Takalar Regency are (a) Limited internet access in several villages which hinders the implementation of digital services: the government program to provide village internet access is still not evenly distributed, thus hindering the use of digital services such as village administration services (b) Low digital literacy among various stakeholders(Cut Afrina, Sri Rohyanti Zulaikha, 2024)(c) Lack of village integration information system(Henni Zainal, Nurmillah, Azhar Aljurida, Andi Risma Jaya, 2024)(d) Public services are not yet efficient: Residents must come directly to the office to take care of administration, because there are no digital services that can facilitate access to information. (e) The potential for village funds is less than optimal: The village financial system has not been digitized. (f) Lack of involvement of traditional leaders and village communities in making decisions about village digitalization. (g) Failure to preserve local culture in Takalar Regency(Henni Zainal, Gazali, 2024).

This study emphasizes the importance of implementing digitalization for independent and sustainable villages based on local wisdom in Takalar Regency. To achieve a more inclusive development strategy based on local wisdom values, the government needs to establish regulatory and normative standards.(Zavyalova, 2024; Zhang, 2022). Besides that, rural development is a complex reflection of environmental, social and economic factors as well as human activities.(Wang, Y., Cheng, L., & Zheng, 2022).

The problem-solving approach by utilizing independent and sustainable village digitalization based on local wisdom in Takalar Regency, South Sulawesi, requires problem solving, namely: Identifying villages that still experience limited internet networks and have not implemented digitalization in the village, building an integrated village information system so that village administration is more efficient and transparent, ensuring that village digitalization remains in line with local wisdom values in Takalar Regency, providing opportunities for village officials to participate in education and training in the use of technology(Henni Zainal, Muhammad Rakib, Andi Idham Ashar, Darmawati Manda, Andi Tenry Sose, 2020)Establishing regulations that encourage independent and sustainable digital transformation of villages. Collaboration is needed to strengthen social networks in developing independent villages.(Thatchenkery & Piezunka, 2024).

Several previous studies related to this research include Yan Mei et al. (2022), who discussed the positive correlation between digital village development and quality rural economic development, and digital villages to encourage quality rural economic development. This study shows that the digital economy and rural development play a crucial role in improving village quality.(Yan Mei*, 2022)Shivam Gupta et al (2022) discuss the impact of digitalization on sustainable development, and the implementation of DAF in supporting development, users and also policy makers.(Rhyner, 2022). Study by Cherly Wangkay, Eny Haryati, Amirul Mustofa (2025) Discussing the application of

digital technology in tourist villages has a higher level of visitors compared to conventional tourist villages.(Wangkay1*, Haryati2, & Amirul Mustofa3, 2025). Digital rural development can improve food quality, reduce carbon and expand greening.(Haihong Guo, 2025)Local values need to strengthen their resilience in the face of the onslaught of globalization. This study examines the impact of shifts on local values due to changing times.(Tuto, L., & Novariyanto, 2023)Village potential with appropriate strategies and programs, as well as human resource development through training, can enhance human resource competency. This study highlights the potential that exists in villages for development.(Sumarmi, 2020)Infrastructure and technology are key pillars in building smart, sustainable villages. This study emphasizes the significance and importance of technology in sustainable village development.(Tomy Rizky Izzalqurny, Rifaldy Adinandra Ferdiansyah, Apriana Rahmawati, 2024).

The advantages of the problem solving offered in this research, compared to previous research, lie in several important aspects including the novelty of the research approach, creating village regulations regarding the implementation of sustainable digitalization including in remote villages in Takalar Regency, with the implementation of digitalization can accelerate public services in villages such as population administration, health services and village budget management because one of the duties of the state apparatus is to serve(Henni Zainal, Muhsin Efendi, Ade Risna Sari, Rusydi Fauzan, 2023). Using local wisdom as the basis for creating digital applications that are in accordance with the culture of the villages in Takalar Regency. This research proposal will bring a mindset that will give birth to new regulations in village digitalization based on local wisdom, improving the village economy, village resources, education and training in digital technology specifically for village finance, cooperation between villages to create independent villages and most importantly, a renewable strategy that will turn remote villages into independent digital-based villages.

METHODS

This research on the digitalization of independent and sustainable villages based on local wisdom in Takalar Regency, South Sulawesi, uses a qualitative descriptive research approach with a case study approach. This research will examine in depth how the implementation of village digitalization is practiced in the lives of village communities and how these values influence regulations for village digitalization implementation and village decision-making. Furthermore, digital transformation can also accelerate the village ranking system, which currently requires a long time to update village status.(Permana, DF, Oktarina, N., Wijaya, AP, Anggraeni, LD, & Maulida, 2024). Therefore, it is important to help villages survive, renew and develop through strategic analysis.(Bérczi, S., Szabó, Z., & Sallay, 2022). The stages of research using the phenomenological approach as described by Cresswell (2005) are as follows: a). Determine informants, the researcher will select up to 75 informants with experiences and involvement in the village b). Conduct structured interviews with 75 informants c). Make phenomenological notes, the researcher reflects after conducting observations and interviews d). Ask descriptive questions by making a list of 35 questions to be submitted

to informants to be more systematic e). Conduct interview analysis related to the phenomenon realistically, the researcher interprets interview data by considering the objective reality conveyed by the informant f). Conduct domain analysis, the researcher categorizes the collected data g). Ask structural questions, the researcher explores the relationship between the concepts that have been found with the domain analysis h). Make a taxonomic analysis, the researcher develops a hierarchical structure from the identified domains i). Ask contractual questions, j). Conduct componential analysis, k). Conduct cultural theme analysis, l). Write a phenomenological report, the researcher presents the researcher's findings using narrative and interpretation from a phenomenological perspective(Creswell, 2014).

Then, a focus group discussion (FGD) was conducted involving 75 informants, including 25 village officials, 20 traditional leaders, and 30 village residents. Data collection was conducted through observation, interviews, and documentation. Data analysis employed the Miles and Huberman interactive analysis model, which consists of data reduction, data presentation, and conclusion drawing/verification, with the assistance of the Atlas TI measurement tool.(Miles, MB, Huberman, AM and Saldana, 2018). Interviews with village officials related to the concept of implementing digitalization in the village, the integration of local cultural and traditional values, whether the village has adopted or plans to implement digitalization as a whole, what is the role of the community in decision-making and program implementation in digital-based villages. Interviews with traditional leaders about the roles and responsibilities of traditional leaders in developing regulations for digitalization of independent and sustainable villages. Interviews with village communities related to preserving and developing traditional values in digital-based villages in Takalar Regency, how village communities can maintain and strengthen traditional values amidst social and environmental changes in Takalar village. This interview will specifically explore the various challenges and support faced by village officials to improve village infrastructure through digitalization of independent and sustainable villages.

Research data analysis will be carried out based on the data analysis techniques introduced by Miles, Huberman and Saldana, namely Interactive Model Analysis.(D. Setyawan, A. Priantono, 2021).Before conducting data analysis, researchers will conduct triangulation (source, method, and theory) on the data obtained by researchers to test the validity of the data. In this analysis technique, the data that has been collected and tested for validity will be reduced. Data reduction is done by grouping data according to the dimensions used to analyze the data. After the data is reduced, the data is presented in narrative form, tables, figures, and graphs. The researchers present data in different forms to make it easier for researchers to understand what will happen and will plan further research. The final step that will be taken is drawing conclusions. In compiling conclusions, researchers do not summarize all research results, but researchers interpret them related to the digitalization of independent and sustainable villages based on local wisdom in Takalar Regency.

RESULTS AND DISCUSSION

Understanding and Readiness for Village Digitalization in Takalar Regency

Village digitalization is a crucial foundation for independent and sustainable village development. Takalar Regency, as one of the regions beginning to seriously pursue digital transformation, faces challenges in terms of village officials' understanding, infrastructure readiness, and technology adoption. This research explores the understanding and readiness of village digitalization in Takalar Regency.

Most village officials (village heads, village secretaries, village operators) understand digitalization only as far as using the internet and computers, without having a comprehensive understanding of digital public service systems, village information systems (SID), or the concept of smart villages.(BPS, 2022; Indonesia., 2021; Ma'arif, MA, & Widiastuti, 2021; Yuniarti, AD, & Purnomo, 2020) Approximately 80% of respondents understood digitalization solely as the provision of internet and computers. Only 20% were familiar with or had used the Village Finance System (Siskeudes), e-SPT, or online SID. Their understanding of data security, digital information management, and the potential for digital monetization (village e-commerce, digital marketplaces) remained minimal.

In general, digital infrastructure readiness in Takalar Regency remains uneven. Five out of 10 villages studied have permanent internet access and computer equipment.(Rural, 2025; Sutrisno, B., & Ramadhan, 2021; Yunita, R., & Mahfud, 2020) However, they still face unstable electricity. Some villages, such as Tanakeke and Sanrobone, only received stable internet access after the Poindes program. Access to computers and other digital devices is limited, and they often rely on privately owned devices.

Based on interviews with SM, field findings revealed that not all villages have digital service centers or dedicated spaces for technology-based public services. Furthermore, not all villages have active domains and hosting for their websites; some villages don't even know who owns their domains.

Local Wisdom and Village Identity

Local wisdom and village identity in Takalar Regency remain strongly preserved in various aspects of community life, from social governance and environmental conservation to agricultural and cultural systems. These values are valuable assets in building independent and sustainable villages. Integration between tradition and digital innovation remains minimal. Therefore, digital transformation of villages in Takalar must be based on local values to create development that is not only modern but also deeply rooted in culture and community wisdom.

Based on interviews, RA revealed that many forms of local wisdom are still maintained in villages in Takalar Regency. For example, the culture of mutual cooperation remains strong, especially during weddings or house construction. There's also the tradition of aklammang, a seasonal harvest festival, or the preparation of a dish

called lammang. Furthermore, the Makassar language and the practice of showing courtesy to elders are still well-maintained.

Local values such as mutual cooperation, deliberation, and customs are integrated into the village digitalization program. Every new program or activity in the village begins with deliberation. All residents are consulted and reached agreement first. So, even with the use of technology, the tradition of deliberation remains. Likewise, mutual cooperation is sometimes still carried out together, such as installing internet equipment or cleaning activity areas. This continues to strengthen the culture and local wisdom in the villages of Takalar Regency. This village digitalization can help promote village culture to the wider community, for example, through photos or videos of local traditions shared online. So, our culture remains alive, just in a more modern way.

Implementation of Digital Technology

The implementation of digital technology in Takalar Regency has begun and has shown positive impacts, particularly in access to information, public services, and the promotion of village products. However, this process still faces various obstacles in terms of infrastructure, human resource capacity, and policy consistency. Digital transformation in Takalar needs to be guided by a comprehensive, collaborative, and culturally-based approach. With this strategy, Takalar's villages can develop into digital villages that are not only modern but also inclusive and resilient.

Based on the interview results, SM stated that many residents have implemented digital technology in villages in Takalar Regency, but their use is still rudimentary. Therefore, the role of village officials and the community is needed in the use and utilization of technology. Village officials are usually the most active because they are the liaisons when there are government programs. But the community is also starting to get used to it. Usually, those who understand technology, such as young people, help teach their neighbors or parents. So it's just a collaboration between residents and officials. In addition, there have been several external training sessions, such as from universities or government agencies. However, the number of participants is still limited. Hopefully, this kind of training can be more frequent, so everyone can participate, especially women and men farmers who are not yet very familiar with technology.

Impact on Independence and Sustainability

The adoption of digital technology accelerates the transition from dependent to autonomous villages. As villages begin to manage their own data, archive, serve the community directly, and market products independently, their institutional capacity significantly increases.

Digitalization helps increase village economic independence, such as through marketing local products and managing village finances. For example, village women have started selling processed products like crackers, cakes, or shredded meat through Facebook or WhatsApp groups. Some also market agricultural products directly to buyers. Technology has been a significant catalyst. Many young people are creative, promoting tourist attractions like beaches, rice fields, or gardens through videos and

photos online. Local products are also starting to have attractive logos and packaging to compete. All of this presents new opportunities for growth.

Digitalization supports environmental sustainability and transparent village governance in Takalar Regency. With digital media, information about village activities can be directly shared with the community, resulting in greater transparency. For example, if a development budget is allocated, it's immediately announced in the village group. For environmental activities, such as village cleanups or tree planting are often announced via WhatsApp, allowing for faster and more active participation.

Besides this support, there are also major challenges in implementing village digitalization in Takalar Regency. The challenge is usually not the network anymore, because the signal is already good. But rather the community's ability. Some are still not accustomed to using technology. Furthermore, not everyone has a sufficient cellphone, so accessing information is sometimes difficult. Based on the results of interviews conducted by SA, several solutions have been attempted to overcome these obstacles. One of them, we usually invite young people to help other residents. If there is training, we try to get residents who are not yet familiar with it to participate. Some activities are also carried out together, so they can learn from each other. If someone doesn't have a cellphone, sometimes they ask a neighbor or the hamlet head. Support is also needed from the local government, central government, and the private sector to encourage sustainable village digitalization. The hope is that this digitalization can make villages in Takalar more advanced, while still preserving their traditions and culture. We must not let our preoccupation with technology cause us to forget mutual cooperation, good manners, and good old values. Hopefully, technology can be a tool to strengthen villages, not replace our identity. The following is a description of the research results processed using the Atlas Ti application:

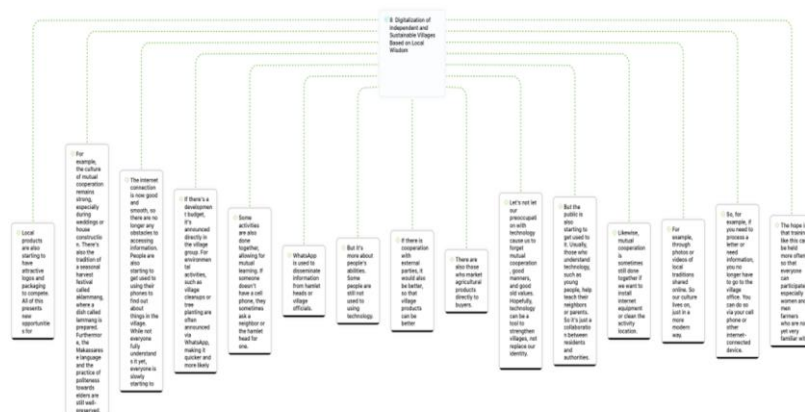


Figure 3. Processed results of the Atlas Ti 25 Application for 2025

CONCLUSION

The results of this study indicate that digitalization aligned with local wisdom can improve village social and economic resilience. Several indicators demonstrating positive impacts include increased citizen participation in digital deliberations, increased income for local businesses, efficiency of village administrative services, and the emergence of technology-based social innovations. Researchers emphasize the importance of long-term mentoring and regular evaluation to ensure the digitalization process remains within a sustainable development framework that adheres to local values.

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