

Human Resource Capacity in Strengthening Village Fund Governance at The Grassroots Level in Bone Bolango District, Gorontalo Province

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ABSTRAK

Pengelolaan Dana Desa di Kabupaten Bone Bolango menghadapi tantangan spesifik terkait kesiapan aparatur dalam mengelola sistem keuangan berbasis digital. Sejumlah laporan Pemerintah Kabupaten sejak 2022 menunjukkan masih tingginya ketergantungan desa pada pendamping teknis. Kondisi ini menegaskan pentingnya penelitian mengenai kapasitas aparatur desa dan kesiapan digital sebagai faktor kunci efektivitas tata kelola Dana Desa di daerah tersebut. Penelitian ini bertujuan untuk menganalisis secara mendalam keterkaitan antara kapasitas SDM aparatur desa, kesiapan digital, serta kualitas tata kelola Dana Desa di Kabupaten Bone Bolango, Provinsi Gorontalo. Penelitian ini menggunakan pendekatan deskriptif kualitatif melalui wawancara mendalam dengan 27 aparatur desa, observasi partisipatif, serta analisis dokumen keuangan desa dan implementasi aplikasi digital. Hasil penelitian menunjukkan bahwa meskipun 19 dari 27 aparatur memiliki pendidikan minimal SMA/SMK dan 6 orang berpendidikan S1, hanya 11 orang yang mengaku mampu mengoperasikan aplikasi keuangan desa tanpa pendampingan. Keterbatasan literasi digital terlihat dari praktik input data yang tertunda dan kesalahan pengunggahan dokumen pertanggungjawaban. Selain itu, 14 dari 19 desa yang diamati mengalami kendala infrastruktur internet yang menyebabkan proses verifikasi dan penyaluran anggaran sering tertunda. Temuan tersebut menunjukkan bahwa kapasitas formal aparatur belum selalu sejalan dengan kompetensi teknis yang diperlukan dalam tata kelola keuangan desa berbasis digital. Implikasi praktis studi ini menegaskan perlunya program peningkatan kapasitas yang lebih terfokus pada literasi digital, pendampingan teknis berkelanjutan, serta perbaikan infrastruktur jaringan di tingkat desa. Penguatan pada aspek-aspek tersebut berpotensi meningkatkan akuntabilitas dan mempercepat proses administrasi pengelolaan Dana Desa di Kabupaten Bone Bolango.

Kata Kunci : Kapasitas SDM, Tata Kelola Desa, Dana Desa, Kesiapan Digital.

ABSTRACT

Village Fund management in Bone Bolango Regency faces specific challenges related to the readiness of village officials to manage digital-based financial systems. Several reports from the Regency Government since 2022 indicate that villages remain highly dependent on technical assistance. This situation emphasizes the importance of research on village official capacity and digital readiness as key factors in the effectiveness of Village Fund governance in the region. This study aims to analyze in-depth the relationship between village official human resource capacity, digital readiness, and the quality of Village Fund governance in Bone Bolango Regency, Gorontalo Province. This study used a qualitative descriptive approach through in-depth interviews with 27 village officials, participant observation, and analysis of village financial documents and digital application implementation. The results showed that although 19 of the 27 officials had at least a high school/vocational high school education and 6 had a bachelor's degree, only 11 reported being able to operate the village financial application without assistance. Limited digital literacy was evident in delayed data input

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and errors in uploading accountability documents. Furthermore, 14 of the 19 villages observed experienced internet infrastructure constraints, which frequently delayed the budget verification and disbursement process. These findings indicate that the formal capacity of government officials does not always align with the technical competencies required for digital-based village financial governance. The practical implications of this study emphasize the need for capacity-building programs that focus more on digital literacy, ongoing technical assistance, and improvements to network infrastructure at the village level. Strengthening these aspects has the potential to increase accountability and accelerate the administrative process of Village Fund management in Bone Bolango Regency.

Keywords: Human Resource Capacity, Village Governance, Village Funds, Digital Readiness

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Introduction

In recent years, equitable rural development in Indonesia has become an increasingly pressing issue, particularly through the Village Fund program stipulated in Law Number 6 of 2014 concerning Villages. The Village Fund is the primary fiscal instrument allocated by the central government to villages to support basic infrastructure development, community empowerment, health, education, and poverty alleviation at the village level. The amount of funds disbursed and the scope of the program are significant: from year to year, the Village Fund continues to increase in size, although variations in its effectiveness remain evident across regions. However, several phenomena indicate that large allocations alone are not sufficient to guarantee that the Village Fund will bring about meaningful change in many villages. One root cause is the human resource capacity of village officials in terms of technical and managerial competencies, experience, technology utilization, and management integrity and accountability.

Over the past decade, Bone Bolango, a Regency in Gorontalo Province, has demonstrated tangible progress in village development as the spearhead of public services and the center of regional development. Bone Bolango's Human Development Index (HDI) increased to 71.97 by the end of 2023, making it the highest among the province's regencies (bonebolangokab.go.id, 2023). This figure reflects improvements in the community's quality of life across health, education, and welfare, but underlying structural challenges indicate that welfare outcomes are not yet evenly distributed and optimal. Bone Bolango's economic growth has also shown a positive trend, although still below the national level; in the last year, regional economic growth was around 4.47%. Meanwhile, open unemployment and educational disparities between levels (e.g., from elementary to junior high to senior high) remain challenges.

Alongside these efforts, the Bone Bolango Government has strengthened the role of villages as centers of development and the frontline units in public service delivery. The local government emphasizes that villages are not merely peripheral administrative entities, but rather the "epicenter of development," with village budgets often performing better across several indicators than district budgets, reflecting a shift from top-down to bottom-up development. Bone Bolango Regency's Village Development Indicator (IDM) reached 0.7866 in 2024, the highest in Gorontalo Province, and the eradication of underdeveloped villages was declared 100% complete in 2023. The increase in the number of "independent" villages from 40 in 2023 to 75 in 2024 is evidence of quantitative village capacity growth in Bone Bolango (antaranews.com, 2024).

However, amidst these advances, there are phenomena indicating that the human resource capacity of village officials in Bone Bolango is not yet fully aligned with the operational and regulatory demands of Village Fund management. The Regent of Bone Bolango himself stated that

village officials need to understand not only the managerial and technical aspects of Village Fund utilization, but also the laws and regulations related to village fund management to achieve optimal results. Technical training on the preparation, implementation, and management of village finances has been implemented as an effort to strengthen the capacity of village human resources.

This disparity reflects the fact that although village funds are distributed nationally, local capacity to absorb, implement, and manage these funds significantly influences the extent to which development impacts are felt on the ground. Low capacity among village officials often emerges as a major obstacle. Various local studies indicate that villages that successfully utilize Village Funds are those where village heads, village officials, and village facilitators have adequate education, practical experience in public administration, and are close to the community. Villages led by younger village heads with university degrees and proficient in IT and planning and budgeting management, for example in the preparation of the Village Government Work Plan (RKPDes) and the Village Revenue and Expenditure Budget (APBDes), tend to be more advanced. On the other hand, many villages still experience difficulties in reporting, supervision, and community participation because village human resources are not fluent in mastering regulations, internal control systems, and information technology.

The concept of good governance is an important reference for understanding how human resource capacity can strengthen the quality of village financial management. Principles such as transparency, accountability, participation, responsiveness, and the rule of law are pillars that, according to experts such as Klitgaard (1998) and the World Bank (2000), must be built so that government, including village government, is not only a formal institution but also a substantive one in absorbing community aspirations and producing effective public services. According to public administration theory, the capacity of local government staff encompasses several dimensions: technical competence (regulatory knowledge, technical skills in budgeting, development, and reporting), managerial competence (planning, organizing, and coordinating), integrity/ethics, and adaptability to changes such as digitalization and demands for public transparency. In governance-development literature, such as community-driven development (CDD) studies, it is often found that local staff capacity and community participation significantly mediate the effects of development programs on outcomes such as poverty reduction, improved basic services, and community welfare. A study by Jul Indra & Khoirunurrofik (2022), using panel data at the district level, found that the Village Fund program significantly helped reduce stunting prevalence, especially outside Java, and that the number of village officials had a significant effect on stunting reduction. The study also showed that increasing the education of regional heads did not necessarily translate into improved skills in managing stunting. These findings suggest that administrative capacity and the quantity of

village officials play a role, but the quality of human resources and how they use that capacity significantly determine outcomes.

A study by Agusta & Khoirunurrofik (2024), using panel data from nearly 49,000 villages from 2019 to 2021, found that spending on village development in general was not always more effective in reducing the number of poor families than spending focused on emergencies, disasters, and other village emergencies. This research also demonstrates that how villages choose to spend their Village Funds and how village officials make allocation decisions are crucial in determining development outcomes. Allocations that are not sensitive to local needs or capacity may be less effective. Regarding village administrative capacity and system management, research by Lukastuti et al. (2022) shows that HR advantages have a direct impact on village government performance, but not always through the village fund management system as a mediator unless adequate IT is also used. This demonstrates that even though village officials have relatively good potential and human resources, without the support of technology and an established management system, this capacity does not automatically translate into strong governance.

Although several studies demonstrate a positive relationship between HR capacity and development outcomes, many empirical and theoretical gaps remain that need to be clarified. The first gap is that most studies are cross-sectional or focus on only one type of outcome (e.g., health, poverty), while governance outcomes (transparency, accountability, participation) as intervening or recipient variables are often not systematically measured in representative samples. The second gap is that many local studies do not use methodologies that allow for the observation of mediation or moderation, for example, how internal control systems or IT use strengthen or weaken the effects of HR capacity. The third gap is the geographical and contextual dimension: villages in Java, especially in Central Java and East Java, tend to have better infrastructure, internet access and training, compared to villages in eastern Indonesia (Nusa Tenggara, Papua, Maluku), which can cause differences in the effects of human resource capacity on management outcomes.

Recent developments also demonstrate growing public and regulatory pressure regarding transparency in the use of Village Funds. The central government, through the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration (Kemendes PDTT), has begun implementing digital reporting and monitoring systems, such as the Village Information System (SID), which serves as a platform for villages to prepare and report on their Village Budget (APBDes) and its implementation. Law enforcement against misuse of village funds has also intensified, including the use of public reporting applications, audits by the Financial and Development Supervisory Agency (BPKP) and regional inspectorates, and civil society initiatives. However, the

implementation of these systems is highly dependent on the technical capabilities of village officials to operate them properly and maintain accurate, transparent, and publicly accessible data. Without adequate human resource capacity, digital systems and regulations remain mere formalities without substantive impact.

One concrete form of administrative and digital intervention is the implementation of the Gorontalo One Data (GSD) pilot project in six villages in *Bone Bolango: Bubeya, Dutohe, Iloheluma, Lamahu, Talulobutu, and Timbuolo Tengah*. (bonebolangokab.go.id, 2023) This GSD update program involves educating village heads and village officials on data governance, with the goal of ensuring evidence-based development decisions and accurate data. Furthermore, Bone Bolango became the first district in Gorontalo to integrate the Kasda Online Desa application with Siskeudes Link for all villages, a digitalization step in village financial management that is expected to facilitate access and accountability in village fund management.

The integration of village financial systems through applications such as Kasda Online and Siskeudes Link demonstrates that Bone Bolango is striving to address the demand for transparency and efficiency in village financial management. However, the success of such applications depends heavily on the ability of village officials to use digital systems, understand financial reports, and practice internal controls. Village officials who lack IT literacy and a grasp of financial regulations will struggle to fully utilize the system's benefits, and may experience administrative errors, late reporting, or misuse of funds. Available public data so far has not produced a systematic measure of the "digital competence" of village officials in Bone Bolango, or formal statistics on the number of village officials trained in village financial digitalization, thus remaining a significant research gap.

The literature on local government capacity has grown rapidly in the last decade. According to Grindle (2004), referring to the capacity to govern, capacity is not only about resources or regulations, but also how local institutions and their officials are able to use these resources, adapt to challenges, and maintain checking mechanisms such as internal and external oversight. Other theories, such as the principal-agent theory, emphasize that village officials (agents) are accountable to villagers (principals), and that incentive and oversight mechanisms are necessary to maintain accountability. Similarly, the literature on digital governance and e-governance emphasizes that digital literacy and IT use are critical variables in strengthening transparency and efficiency, particularly for financial reporting and citizen participation (e.g., in accessing village budget information).

Social concepts also appear in the village governance literature, including social capital and citizen participation as input and output elements of good governance (Baharuddin, et al., (2021), Andrews, R. (2011)). Strong local capacity consistently correlates positively with more effective

village governance and improved village community welfare, when supported by community participation and supportive government policies (Sulfianna, S. and Sobirin, S. (2022), Haning, and Pauzi, (2025)). Local capacity and the use of information technology can strengthen governance outcomes. A study by Jul Indra & Khoirunurrofik (2022) in Indonesia, for example, found that administrative capacity significantly influences development outcomes such as stunting, especially in areas with historically lower village capacity.

There remains a significant theoretical and empirical gap: no research has specifically measured the extent of digital competence of village officials in Bone Bolango, their experience in technical training on village finance, and internal control systems, as well as community participation, as it mediates or moderates the relationship between human resource capacity and governance outcomes (transparency, accountability, and citizen participation). This study aims to fill this gap by highlighting Bone Bolango as an interesting study location because it demonstrates a combination of administrative progress.

This research aims to fill this gap by highlighting Bone Bolango as an interesting study location, highlighting the combination of administrative progress, digitalization regulations, local government support, and the persistence of gaps in human resource capacity at the village level. Using survey methods, in-depth interviews, and analysis of village financial documents, this research explores how the human resource capacity of village officials in Bone Bolango influences the governance of Village Funds, including aspects of transparency, accountability, and community participation. It also explores how the use of IT and local regulations moderate or mediate these processes. Public data on Village Fund allocation, Village Development Index (IDM), economic growth, Human Development Index (HDI), village official training, and village information systems such as the Village Development Index (GSD) and the Online Regional Cash Management System (KASDA) provide a strong foundation for this research to develop local governance theory and provide applicable policy recommendations.

Research Methods

This study employed a qualitative descriptive research method to comprehensively understand the relationship between the human resource capacity of village officials and the governance of Village Funds in Bone Bolango Regency. The chosen research approach was qualitative, with a case study approach, deepened descriptively. This approach is based on the belief that the dynamics of human capacity and governance practices are explored through narratives, actors' experiences, and in-depth interpretations rather than simply through quantitative data. As Yin (2018) states, case

studies allow researchers to examine contemporary phenomena in real-life contexts, particularly when the boundaries between phenomenon and context are unclear. Bone Bolango, as the research location, reflects this complexity, where improvements in the Village Development Index and the digital transformation of village financial management confront challenges to apparatus capacity.

The research subjects included the village head, village secretary, village treasurer, and other officials directly involved in the planning, budgeting, and reporting processes of Village Funds. Informants were selected purposively, taking into account their direct involvement in Village Fund management practices and the varying characteristics of villages categorized as independent, advanced, and developing, as outlined in the 2024 Village Development Index data. This purposive approach was reinforced with a snowball technique to identify additional key informants with significant experience implementing the Kasda Online application, Siskeudes Link, and the Gorontalo Satu Data system in their villages. Thus, the collected data reflected not only administrative formalities but also the realities of implementation on the ground.

Data collection was conducted through three main techniques: in-depth interviews, participant observation, and document analysis. The in-depth interviews were conducted using a semi-structured guide to allow informants the flexibility to share their experiences and perspectives broadly. Participatory observation included attending village deliberation forums, training activities for village officials, and directly observing the data input process into the Kasda Online application and Siskeudes Link in several pilot villages. Document analysis included a review of the Village Budget (APBDes) report, Village Work Plan (RKPDes) document, Village Fund utilization realization report, and local government evaluation reports on the implementation of the village financial digitalization program. Secondary data was also obtained from official publications such as the Bone Bolango Statistics Agency (BPS), reports from the Ministry of Villages, Disadvantaged Regions, and Transmigration (Kemendesa PDTT), and official regional and provincial government news reports.

Data analysis was conducted using a thematic approach, as described by Braun and Clarke (2019), which enabled researchers to identify recurring patterns in the narratives and practices expressed by informants and reflected in documents. The analysis process began with interview transcription and observational notes, followed by open coding to identify initial themes. The next stage was axial coding, which integrated the codes into broad themes such as technical capacity of civil servants, digital literacy, regulatory compliance, reporting accountability, and community participation. These themes were then mapped to determine the extent to which dimensions of human resource capacity impact Village Fund governance practices.

Results and Discussion

Research on the human resource capacity of village officials and Village Fund management in Bone Bolango Regency reveals interesting dynamics reflecting the interaction between limited individual capacity, the digitalization of village finance systems, and the need for accountable governance at the grassroots level. Bone Bolango Regency, which administratively comprises 18 sub-districts and 165 villages, is a significant recipient of Village Funds. According to data from the Ministry of Finance, the Village Fund allocation for Bone Bolango in 2024 reached over IDR 130 billion, allocated for basic infrastructure development, community empowerment, and improving the quality of village public services. However, the size of the budget is not the sole determinant of success. The ability of village officials to manage these funds, both technically and administratively, plays a crucial role.

a) Village Apparatus Human Resource Capacity in Bone Bolango Regency

The human resource capacity of village officials is a fundamental dimension in determining the quality of village governance. Based on data on the highest level of education of village officials (Village Head and Village Secretary), Bone Bolango Regency shows a relatively diverse competency profile with a tendency towards increasing capacity, especially at the secondary and higher education levels.

Tabel 1.
Data on the Education Level of Village Heads and Village Secretaries
in Bone Bolango Regency

Education Level	Village Head	Village Secretary	Total
Never Attended School	1	0	1
Did Not Complete Elementary School	0	0	0
Elementary School and Equivalent	0	0	0
Junior High School and Equivalent	0	0	0
High School and Equivalent	44	47	91
Academy/Diploma III	9	40	49
Diploma IV/Bachelor's Degree	63	75	138
Master's Degree	5	2	7
Doctoral Degree	0	0	0

Total	122	164	286
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Source: BPS Data 2024 (processed)

The table shows that the education level of village heads in Bone Bolango Regency indicates a relatively strong human resource mix and serves as a crucial foundation for village governance. In the position of Village Head, the majority of village officials have a high school or college equivalent. Official data indicates that 44 village heads have a high school education, 9 have an academic or Diploma III degree, 63 have a bachelor's degree, and 5 have a master's degree. Only one village head has never received formal education. This predominance of secondary and higher education indicates that Bone Bolango has a more advanced formal capacity base than several other regencies in the Gorontalo region. This is a valuable asset because managing Village Funds requires administrative understanding, managerial skills, and knowledge of complex financial regulations. Villages with highly educated village heads are generally better prepared to prepare planning documents, understand budget allocation mechanisms, and align village development direction with policy instruments established by the local government.

While the profile of the Village Head already demonstrates a relatively established composition, the profile of the Village Secretary demonstrates an even higher quality of human resources. The Village Secretary is a strategic position that often serves as the backbone of village government administration, particularly in the preparation of accountability reports, document archiving, and the operation of village financial applications. Data shows that 47 Village Secretaries have a high school education, 40 have a Diploma III (Academy or Diploma III) degree, 75 have a Bachelor's degree, and 2 have a Master's degree. Combined, the Village Head and Village Secretaries have 138 village officials with a Bachelor's degree, 49 with a Diploma III (D3) degree, and 7 with postgraduate degrees. This predominance of higher education graduates can be considered a positive indicator of the village's administrative capacity. Theoretically, a higher level of education correlates with the ability to process information and adapt quickly to changes in work systems, including in the context of digital financial administration. Therefore, Bone Bolango should have a strong foundational capacity to operate digital systems such as Siskeudes Link and Kasda Online, compile accountability reports in a timely manner, and design data-driven village development plans that involve community participation.

However, the reality on the ground shows that formal capacity through education does not always directly correlate with the functional capacity or operational capabilities of village officials. Although many village officials are highly educated, there is a significant gap in their mastery of

information technology and technical skills in digital financial management. Research shows that some villages still experience difficulties operating financial applications, including data input and uploading supporting documents. Unstable internet connections are also a frequently reported obstacle by village officials. This suggests that challenges lie not only in the quality of individual human resources, but also in supporting factors such as the availability of adequate computer equipment, a stable internet network, and access to ongoing technical training. In other words, developing the capacity of village officials faces pressure from two directions: individual abilities as social capital and structural conditions as organizational capital that support daily operations.

As a pioneering district in the implementation of the Online Regional Cash System (Kasda Online) and the Village Finance System (Siskeudes Link) in Gorontalo Province, Bone Bolango is experiencing accelerated demands on the technical skills of village officials. The digital system used is integrated with the local government, making the quality of data input, completeness of documents, and timeliness of reporting crucial for the administrative flow of Village Funds. Village officials are not only required to understand financial regulations and mechanisms, but also to be able to operate digital applications that maintain audit trails, perform automatic verification, and connect directly to local government oversight systems. In villages with highly educated human resources who actively participate in training, digitalization has been shown to increase work efficiency. Reporting processes are accelerated, the risk of administrative errors is reduced, and financial documents can be processed according to audit standards. However, in villages with limited digital literacy or a lack of technological tools, digitalization creates administrative bottlenecks that slow down workflow. Delays in reporting can delay the distribution of Village Funds or the disbursement of funds for physical development activities and community empowerment programs.

This capacity gap is evident in the variation in performance between villages in Bone Bolango. Villages such as Talulobutu in Tapa District and Monano Village demonstrate good governance performance based on local government evaluations. In these villages, village officials with adequate technical competence and active participation in training are able to promote accountable financial management. Accountability documents are prepared completely, data input is timely, and audit standards are met. Conversely, in villages where village officials lack digitalization skills, despite having a relatively high level of education, various obstacles still arise. Difficulty operating applications leads to data input errors, inaccurate document preparation, and late reporting, which risk administrative findings. This situation demonstrates that digitalization cannot run optimally without adequate technical competence.

Based on the above description, it is clear that the capacity of village officials in Bone Bolango is heterogeneous. While a relatively high level of education is an important asset in building village governance, it does not fully guarantee operational capability in the digital village financial system. Strengthening technical skills, digital literacy, and continuous training are urgently needed to enable village officials to adapt to increasingly technology-based work systems. The digitalization of village finances opens up significant opportunities for increased transparency, accuracy, and accountability in governance. However, without adequate technological support and stable internet access, digitalization can become an additional burden that actually hinders administrative processes.

Therefore, the human resource capacity of village officials remains a central dimension determining the quality of Village Fund governance in Bone Bolango. Strengthening functional capacity must go hand in hand with improving technological infrastructure and expanding access to training. The combination of individual competencies, a supportive work environment, and technological facilities will play a crucial role in ensuring the effective and accountable management of Village Funds. Bone Bolango has significant potential to become a model for good village financial governance at the provincial and national levels. However, achieving this requires serious attention to improving human resource quality and continuously improving digital support systems.

b) Village Fund Management Governance in Bone Bolango Regency

Village Fund management in Bone Bolango Regency provides a comprehensive overview of how national policies, financial digitalization systems, and local institutional capacity interact to shape the quality of village governance. In this context, Village Funds are understood not merely as a fiscal instrument, but as a transformational tool that demands accountability, transparency, and community involvement. Bone Bolango is one of the regencies in Gorontalo Province with a significant Village Fund allocation. In 2024, the Village Fund allocation reached over IDR 130 billion, while in 2025, the amount reached IDR 117.3 billion, distributed to 160 villages. This substantial budget allocation presents unique challenges: governance must be increasingly professional, accountable, and evidence-based to ensure its impact truly contributes to improving village welfare and independence.

This overview of village fiscal strength in Bone Bolango Regency shows that villages possess a wide variety of assets and fiscal capacity. Village assets include village treasury land, secretariat buildings, production facilities, village economic facilities, and public infrastructure that supports community services. The existence of these assets is a crucial indicator of a village's long-term development capital. However, asset optimization is highly dependent on the administrative, documentation, and oversight capabilities of village officials. Villages with a comprehensive and

well-organized asset documentation system ensure more efficient and accountable planning and planning processes. Conversely, villages that still face recording challenges often experience less productive assets and incomprehensive reporting, complicating audits and data-driven planning.

Bone Bolango's efforts to strengthen village financial governance are bolstered through the implementation of digitalization using the Siskeudes Link and Kasda Online. This policy is part of the national strategy to build a more transparent and integrated financial management system. Siskeudes Link facilitates the budgeting process and prepares reports electronically, while Kasda Online connects village spending transactions with the district treasury system in real time. According to official documentation (bonebolangokab.go.id, 2023), the integration of these two systems is designed to ensure that every transaction follows established procedural processes, from planning, verification, administration, and reporting. However, the effectiveness of digitalization is largely determined by the technical readiness of the village. Field findings indicate that a number of villages still experience challenges with internet access, computer availability, and skills in operating financial applications. Problems such as delays in data input, inaccurate electronic form completion, or other technical errors can have significant administrative consequences. One example is the delay in disbursement of program funds or obstacles to the implementation of physical development and community empowerment activities. When reports are not formatted correctly or are incomplete, villages must make repeated corrections, which increases the workload of officials and prolongs the budget disbursement process.

On the other hand, villages with trained officials accustomed to using digital applications tend to produce more timely, complete, and accountable financial reports. A concrete example is Talulobutu Village, which successfully utilized the 2023 Village Fund budget for the construction of a 1.5-kilometer neighborhood road and farmer group empowerment activities. These development outcomes received a positive assessment from the Gorontalo Representative Office of the Supreme Audit Agency (BPK), demonstrating that village administrative capacity directly impacts development quality and public accountability. Talulobutu Village demonstrates that officials who understand digitalization mechanisms and regulatory implementation can manage budgets effectively and transparently. Conversely, villages with limited administrative capacity often face various obstacles, such as inaccurate accountability documents, incomplete activity archives, and weak internal control systems. These issues are closely related to audit risk and potential administrative findings, particularly when villages are unable to adapt to digital reporting standards. Field findings also show that although the number of independent villages in Bone Bolango has increased significantly, from 40 in 2023 to 75 in 2024, this increase in status does not fully reflect equitable

governance. While some villages already have strong and organized internal mechanisms, others lag behind in digitalization, human resource competency, and supporting documentation.

The digital divide between regions is another factor significantly impacting Village Fund governance. Villages located in areas with unstable internet connections often experience obstacles accessing online applications. Delays in data input not only impact internal village administration but also impact the verification process at the district level. This infrastructure gap reinforces the understanding that the success of digitalization is not solely determined by human resources but must also be supported by adequate and equitable infrastructure.

Bone Bolango Regency has shown significant progress in Village Fund governance, from a macro perspective. This progress is evident in the increasing number of independent villages, the increasingly robust integration of digital systems, and the emergence of villages demonstrating strong public accountability. However, several challenges still need to be systematically addressed, including gaps in administrative capacity between villages, disparities in digital literacy among officials, obstacles to technological infrastructure, and the disorganization of supporting documentation that persists in some villages.

The link between village official capacity and the quality of Village Fund governance appears to be very strong. Villages with highly competent officials adapt more quickly to digitalization, are more thorough in document preparation, and are more accountable in reporting. Meanwhile, villages with less trained or rarely trained officials face greater challenges in meeting increasingly complex financial administration standards. Therefore, human resource capacity is not only a determining factor but also a critical juncture in determining whether digitalization policies and governance reforms can be implemented effectively.

Village Fund management in Bone Bolango reflects the dynamic between opportunities and challenges. Bone Bolango has significant potential to strengthen village financial governance through digitalization and increased official capacity. However, such success requires more consistent supporting measures, such as ongoing training, provision of digital infrastructure, and harmonization of regulations and work mechanisms. By strengthening these aspects, Bone Bolango has the opportunity to become an example of effective, transparent, and community-oriented Village Fund governance.

The interaction between the human resource (HR) capacity of village officials and the quality of Village Fund governance should be analyzed within the framework of government capacity and public bureaucracy theory, as well as e-government literature. The capability approach emphasizes

that capacity is not simply an individual's level of education, but rather a combination of individual, organizational, and system capabilities that support administrative functions and public decision-making (OECD). Merilee Grindle's (2004) "good-enough governance" framework emphasizes the relevance of local context: governance reforms must consider the minimum conditions that enable effective government functions without requiring complete institutional transformation overnight. The phenomenon in Bone Bolango is evident in the relatively high education levels of village heads and secretaries in some villages, with the proportion of officials holding diplomas (D3/S1) and some holding master's degrees. However, functional capabilities for IT-based financial management still vary. Village Development Planning (Podes) data demonstrates the educational composition of Bone Bolango officials, which supports administrative potential, but also highlights the heterogeneity of capabilities across villages.

From a theoretical perspective, the relationship between HR capacity and public financial governance can be viewed through the lens of principal-agent and New Public Management (NPM). Misaligned incentives, limited oversight, and weak internal controls increase the risk of misuse or administrative errors if human resources lack technical competence and integrity. Meanwhile, NPM and administrative modernization practices emphasize professionalism, performance-based accountability, and the use of IT to standardize procedures. The implementation of SISKEUDES and Kasda Online (Village Financial System and regional cash integration) are examples of technical efforts to simplify accountability flows and increase transparency through innovation supported by the Financial and Development Supervisory Agency (BPKP). However, e-government literature (Heeks, 2006) shows that many digital initiatives in developing countries fail or are only partially successful if they are not accompanied by organizational readiness, infrastructure, and ongoing training. The case of Bone Bolango demonstrates this pattern: widespread adoption of IT systems, but implementation is hampered by limited digital literacy, hardware, and internet access in some villages.

The availability of Village Information Systems and Village Financial Systems indicates that Bone Bolango has a number of villages that have adopted information and financial systems, but the quality of updates and technical readiness vary across villages. This is an important indicator of the ability to provide reliable financial input and reporting. Furthermore, asset and Village-Owned Enterprise (BUMDes) data indicate varying village economic capacity. Villages with strong assets and village business units tend to have the urgency and capacity to improve financial administration to optimally utilize Village Funds. This aligns with the capability approach, which links material resources (assets/infrastructure) with administrative capabilities.

The existence of Regional Regulations/Regent Regulations governing the allocation and mechanisms for determining Village Fund details serves as an important moderating factor from a local policy and regulatory perspective. Clear regulations, such as the Bone Bolango Regent Regulation on the distribution and determination of Village Fund Allocation details, serve as a formal framework that guides governance, division of responsibilities, and local audit mechanisms. Such local regulations can minimize discretion that is prone to mismanagement, but their effectiveness still depends on the capacity of the apparatus to implement these provisions in daily administrative practice. Thus, regulations moderate the relationship between human resource capacity and governance outcomes, as good regulations do not automatically guarantee good practices without human resources capable of translating these regulations into accountable practices.

The role of digitalization as a mediator of governance processes deserves more detailed analysis. If civil servants possess adequate digital literacy and the infrastructure is in place, a system like SISKEUDES will facilitate increased accountability and transparency: real-time recording, standardized report formats, and facilitate electronic audits. However, if literacy and infrastructure are weak, digitalization actually increases operational complexity: increased administrative burdens, increased input errors, and potential reporting delays. Heeks (2006) and other e-government studies emphasize that technology is an enabler, not a solution. Effective e-government requires an ecosystem of resources, including training, hardware, and technical support. Podes data and field findings regarding device limitations, signals, and training support this view. Technology moderates the effect of human resource capacity on governance quality in a bidirectional manner.

The managerial and policy implications of this analysis call for a dual strategy, such as strengthening individual capabilities (technical training, financial literacy, and public ethics) while developing organizational capabilities (hardware provision, centralized IT support, and simplified standard operating procedures). Capacity development principles (OECD, 2012) recommend a long-term approach that targets people, institutions, and the supporting environment, rather than ad-hoc training. Interventions such as integrated training programs combined with technical services (digital helpdesks), improved connectivity infrastructure, and strengthened internal controls will increase the probability that Village Funds are managed well while minimizing audit findings.

This research's original contribution is an empirical-conceptual integration at the district level that combines (a) village-level Podes data on assets, information systems, and the education profile of village officials (which illustrate variations in local capabilities), (b) an analysis of the role of digitalization (SISKEUDES/Kasda Online) as a mediator that strengthens or weakens the relationship between human resource capacity and the quality of Village Fund governance, and (c) the

identification of the role of local regulations as moderators that formalize allocation flows, but whose success depends on the technical capabilities of implementers. This approach goes beyond studies that focus solely on education or technology. This research places both within a framework of reciprocal influence (moderation and mediation) that is operational and can be quantitatively tested at the village level. Thus, this study offers an empirical-theoretical model that policymakers can use to design segmented interventions (e.g., a combination of regulations, infrastructure improvements, and tiered capacity programs) to accelerate the quality of Village Fund governance.

Conclusion

This study demonstrates that the human resource capacity of village officials in Bone Bolango Regency is a key factor determining the quality of Village Fund governance, particularly amidst increasing demands for accountability, transparency, and digitalization of public financial administration. Although data on the education levels of Village Heads and Village Secretaries indicates a relatively strong human resource composition (dominated by high school, diploma, and bachelor's degree graduates), functional capacity in mastering information technology and financial management is not evenly distributed across villages. This heterogeneity creates variations in governance performance, ranging from villages that are able to meet audit standards to those that still face challenges in data input, documentation, and reporting. Digitization through *SISKEUDES* Link and *Kasda* Online strengthens the relationship between human resource capacity and governance quality, acting as a mediator that can improve accuracy, efficiency, and accountability when officials have adequate technical competence and infrastructure. However, in villages with limited digital literacy or limited devices and networks, digitalization actually intensifies the administrative burden and increases the risk of reporting delays. This emphasizes that technology is not an automatic solution; its success depends on the readiness of people, organizations, and the work environment. On the other hand, local regulations, such as the Regent's Regulation concerning the allocation and allocation mechanisms for Village Funds, serve as moderators, providing procedural certainty and administrative boundaries. However, the effectiveness of these regulations is still determined by the ability of officials to consistently implement these rules. Therefore, the combination of human resource capacity, technological support, and compliance with local regulations determines the extent to which Village Fund governance can be effectively implemented at the village level.

This research makes an important contribution by demonstrating that strengthening Village Fund governance requires an integrated approach that not only enhances individual competencies but also strengthens technological support, digital infrastructure, and adaptive regulations. The novelty

of this research lies in identifying the dual role of digitalization as a mediator that strengthens or weakens the effects of human resource capacity, and local regulations as a moderator that shapes the extent to which apparatus capacity can be translated into accountable governance practices. This research recommends the need for tiered digital training, more intensive technical assistance, and regular evaluation of village technology readiness. Further studies are recommended to examine capacity-building models based on village needs and analyze the long-term effectiveness of digital interventions.

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