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Information Digitalization, Budget Participation, and Apparatus Competence on Village Fund Accountability

Elvira Zeyn[1], Glen Lazwardi Qurba[2], Ridwan[3], Haris Resmawan[4]
[1,2,3,4] Universitas Pasundan, Indonesia
* Correspondence e-mail; elvirazeyn0@gmail.com

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Abstract

Village fund management in Indonesia faces persistent challenges related to transparency and accountability, with corruption in the village fund sector amounting to IDR 233 billion across 154 cases in 2021 alone. This study aims to examine the influence of information digitalization, budget participation, and village apparatus competence on the accountability of village fund management in Padalarang District, West Bandung Regency. A quantitative approach was employed, using primary data collected through structured questionnaires distributed to 81 village officials and community members involved in village fund management across ten villages. Multiple linear regression analysis was conducted using SPSS. The results indicate that information digitalization, budget participation, and village apparatus competence each exert a positive and significant effect on accountability, both individually and simultaneously. Budget participation contributes the largest partial effect at 31.7%, followed by information digitalization at 21.7%, and village apparatus competence at 13.9%. Collectively, the three variables explain 67.3% of the variance in accountability. These findings lend empirical support to the Technology Acceptance Model, Participatory Budgeting Theory, and Human Capital Theory in the context of village-level governance. The study contributes a multi-factor empirical framework to the literature on village fund accountability and recommends that village governments prioritize genuine community participation throughout the budget cycle, strengthen digital infrastructure, and enhance apparatus competence through regular training and equitable compensation

Keywords Accountability, Budget Participation, Digitalization, Village Apparatus Competence, Village Fund Management

INTRODUCTION

Village fund management occupies a central position in Indonesia's rural development agenda. Mandated by Law Number 6 of 2014 on Villages, village governments receive direct budget allocations from the national treasury to finance local infrastructure, social services, and community welfare programs. This policy has expanded fiscal autonomy at the village level, yet it has simultaneously amplified the risks of mismanagement and fraud. Village administrations are required to manage these funds transparently, responsibly, and in full compliance with applicable financial regulations so that resources are used effectively and development objectives are achieved.

The scale of accountability challenges in village fund management is well documented and deeply concerning. A report from the Financial and Development Supervisory Agency (BPKP) identified 15,100 potential weaknesses in the accountability of village fund management, spanning multiple stages from budgeting and implementation to administration and reporting (Puslitbangwas-BPKP, 2022). These weaknesses are frequently compounded by misalignment between the Medium-Term Development Plans of district governments and those of individual villages, which undermines coherence in rural development planning. More critically, data from Indonesia Corruption Watch (ICW) revealed that in 2021, the village fund budget sector experienced the highest incidence of corruption nationally, amounting to IDR 233 billion across 154 cases. Such figures expose systemic vulnerabilities in village fund governance and underscore the urgency of identifying effective accountability drivers (Suparyanto, 2020).

The academic literature suggests that information digitalization is one key mechanism for improving accountability in village fund management. The adoption of the Village Financial System application (Siskeudes), developed by BPKP, has been shown to enhance transparency by enabling real-time tracking of village financial data, thereby strengthening public oversight and reducing the potential for fund misuse (Komarasari, 2017). However, prior studies such as that conducted by Suryani (2021) have focused predominantly on the effects of digitalization at the regional government level and have not integrated other contributing factors—notably budget participation and village apparatus competence—within a unified empirical framework.

Community participation in village budgeting and financial oversight has also been identified as a critical driver of accountability. When residents are actively engaged in village deliberations and budget supervision, they impose social pressure that compels village governments to be more transparent and responsible in managing public funds (Hakim, 2020; Suartini et al., 2020; Hanifah & Praptoyo, 2015). Equally important is the competence of village apparatus, defined as the knowledge, skills, and professional conduct of village officials in managing financial resources. Competent officials are better positioned to produce accurate and regulation-compliant financial reports, thereby reducing the likelihood of mismanagement and errors (Mardiasmo, 2018; Rahman & Lestari, 2019). Despite the recognized importance of each factor, no prior study has empirically integrated all three within a single model of village fund accountability.

METHODS

This study employs a quantitative approach with a cross-sectional survey design to examine the directional relationships between information digitalization (X_1), budget participation (X_2), village apparatus competence (X_3), and the accountability of village fund management (Y). The research is explanatory in nature, aiming to test hypotheses concerning the magnitude and significance of these relationships. The study was conducted across ten villages in Padalarang District, West Bandung Regency—Cempakamekar, Ciburuy, Cimerang, Cipeundeuy, Jayamekar, Kertajaya, Kertamulya, Laksanamekar, Padalarang, and Tagogapu—all of which received and actively managed village fund allocations during the 2022–2024 fiscal period.

The population consists of all village officials directly involved in village fund management in the ten selected villages, including village heads, village secretaries, heads of affairs (kaur), heads of sections (kasi), village treasurers, and members of the Village Representative Council (Badan Permusyawaratan Desa or BPD). Purposive sampling was applied based on two criteria: (1) the village has received village fund allocations for at least three consecutive fiscal years (2022–2024), and (2) the selected official is directly involved in the planning, implementation, administration, or reporting of village funds. The minimum required sample size was calculated using Slovin's formula, yielding a threshold of 52 respondents. A total of 81 completed questionnaires were returned, substantially exceeding the minimum threshold and ensuring adequate statistical power for the analyses conducted.

FINDINGS AND DISCUSSION

Respondent Profile

Data were collected from 81 respondents across ten villages in Padalarang District. The majority of respondents were male (73%), while female respondents accounted for 27% of the sample. With respect to age, 58% of respondents were over 40 years old, with the remaining participants distributed equally between the 20–30 (21%) and 31–40 (21%) age groups. Village Council Members (BPD) formed the largest positional group at 25%, followed by heads of affairs at 20% and heads of sections at 19%. In terms of experience in village fund management, 43.2% of respondents reported 2 to 5 years of experience, and 35.8% reported 6 to 10 years. Educationally, high school graduates dominated the sample at 71%, followed by bachelor's degree holders at 26%. The complete respondent profile is presented in Table 2.

Table 2. Respondent Profile

Characteristic	Category	Frequency	Percentage
Gender	Male	59	73%
	Female	22	27%
Age Group	20–30 years	17	21%
	31–40 years	17	21%
	>40 years	47	58%
Position in Village	Head of Village	10	12%
	Village Secretary	10	12%
	Village Treasurer	10	12%
	Village Council Member (BPD)	20	25%
	Heads of Sections	15	19%
	Heads of Affairs	16	20%
Experience in Village Fund Management	Less than 2 years	10	12.3%
	2–5 years	35	43.2%
	6–10 years	29	35.8%
	More than 10 years	7	8.6%
Educational Background	High School	57	71%
	Diploma	2	2%
	Bachelor's Degree	21	26%

Master's Degree	1	1%

Multiple Linear Regression Results

Multiple linear regression analysis was performed to test the partial and simultaneous effects of the three independent variables on accountability. The results are displayed in Table 3.

Table 3. Multiple Linear Regression Results

Variable	Unstandardized B	Std. Error	Standardized Beta	*t*	Sig.
Constant	0.443	0.356	—	1.244	0.217
Information Digitalization (X_1)	0.260	0.061	0.331	4.236	0.000
Budget Participation (X_2)	0.509	0.080	0.468	6.368	0.000
Village Apparatus Competence (X_3)	0.158	0.041	0.276	3.896	0.000

The regression equation derived from these results is: $Y = 0.443 + 0.260X_1 + 0.509X_2 + 0.158X_3$. The constant of 0.443 suggests that if all three predictors were equal to zero, the level of accountability would be negligible. The positive regression coefficients across all three variables confirm that increases in any predictor are associated with higher accountability. Budget participation has the largest unstandardized coefficient (0.509), followed by information digitalization (0.260) and village apparatus competence (0.158). All three t-values exceed the critical value at the 5% significance level, and all p-values are below 0.05, indicating that H_1, H_2, and H_3 are each accepted. Budget participation contributes the largest partial effect at 31.7%, followed by information digitalization at 21.7%, and village apparatus competence at 13.9%.

Simultaneous Effect (F-Test)

The simultaneous effect of the independent variables on accountability was assessed through the F-test. The results are presented in Table 4.

Table 4. Simultaneous Effect (F-Test)

F Calculated	F Table	Sig.	Adjusted R^2	Conclusion
52.882	2.723	0.000	0.673	Significant

The F-calculated value of 52.882 substantially exceeds the F-table value of 2.723, and the significance level of 0.000 is well below the 0.05 threshold. This confirms that the three independent variables collectively and significantly influence accountability in village fund management, and H_4 is therefore accepted. The Adjusted R^2 value of 0.673 indicates that information digitalization, budget participation, and village apparatus competence together explain 67.3% of the variance in accountability; the remaining 32.7% is attributable to factors beyond the scope of the current model.

Discussion

The finding that information digitalization has a positive and significant effect on the accountability of village fund management (H_1 accepted; t = 4.236, p = 0.000) is consistent with the Technology Acceptance Model (Davis, 1989). When village officials perceive digital financial management tools such as Siskeudes as both useful and easy to operate, adoption rates increase, which in turn enhances the accuracy, traceability, and transparency of financial records and reports. This result aligns with the findings of Suryani (2021), who documented a similar positive relationship between digitalization and financial accountability at the regional government level, and extends that evidence to the village governance context. However, the partial contribution of information digitalization at 21.7%—while meaningful—is not the dominant factor, indicating that digital adoption alone is insufficient to guarantee accountability. The effectiveness of digitalization is contingent upon stable internet connectivity and adequate technical capacity among village officials—conditions that remain uneven across rural areas in West Bandung Regency (Komarasari, 2017)

Budget participation emerged as the strongest predictor of village fund accountability, recording the highest partial contribution of 31.7% (H_2 accepted; t = 6.368, p = 0.000). This finding is strongly consistent with Participatory Budgeting Theory (Quick & Bryson, 2020), which underscores that community involvement in the allocation and monitoring of public resources generates social accountability mechanisms that compel village governments to act more transparently and responsibly. It also aligns with the Good Governance principles of transparency, participation, and accountability articulated by the United Nations Development

Programme. These results extend prior research by Hakim (2020), who demonstrated that community participation improves satisfaction with village fund management, by quantitatively establishing its primacy among multiple accountability drivers. A notable finding from the descriptive data, however, suggests that while participation in village deliberations was high among respondents, routine oversight activities by the BPD during the implementation phase remained limited. This implies that participatory engagement is currently concentrated at the planning stage, and that continuous monitoring mechanisms throughout budget execution are critically needed to sustain accountability gains.

Village apparatus competence exerted a positive and significant, yet comparatively modest, effect on accountability (H_3 accepted; $t = 3.896$, $p = 0.000$), contributing 13.9% to the explained variance. This is theoretically grounded in Human Capital Theory (OECD, 2022; Ulrich & Lake, 1991), which posits that the skills and expertise of an organization's workforce are fundamental to its performance and governance outcomes. Competent village officials are better equipped to apply financial regulations, use accounting tools correctly, and produce accurate and transparent reports, as Mardiasmo (2018) emphasizes. The relatively modest effect size, however, warrants attention. Descriptive data indicate that while formal educational qualifications were adequate among respondents, village-fund-specific training was limited and often constrained by budget shortfalls and insufficient institutional support from local governments. Delayed salary disbursements—reported to occur between January and March for some village officials—further undermined professional motivation and commitment. These observations are broadly consistent with Rahman and Lestari (2019), who found that competence positively influences financial reporting quality, while additionally revealing that competence alone, absent adequate compensation, regular training, and supportive regulatory environments including village regulations (Perdes), produces more limited accountability improvements.

Taken together, the simultaneous F-test result ($F = 52.882$, $p = 0.000$, Adjusted $R^2 = 0.673$) confirms that information digitalization, budget participation, and village apparatus competence collectively and significantly enhance the accountability of village fund management, lending full support to H_4. This integrated finding validates the study's theoretical proposition that accountability in village-level public finance is a multi-dimensional outcome driven by complementary factors: digital infrastructure that makes financial data visible and auditable; participatory processes that embed community oversight into budget governance; and human capital that ensures regulations are competently applied. The 32.7% of unexplained variance points to the probable influence of additional factors—such as internal control systems, leadership quality, audit coverage, organizational culture, and community social capital—which represent productive directions for future investigation.

CONCLUSION

This study concludes that information digitalization, budget participation, and village apparatus competence each have a positive and significant effect on the accountability of village fund management across ten villages in Padalarang District, West Bandung Regency. Budget participation emerges as the most influential factor, contributing 31.7% of the explained variance in accountability, followed by information digitalization at 21.7%, and village apparatus competence at 13.9%. Simultaneously, the three variables account for 67.3% of the variance in accountability. These findings provide empirical validation for the Technology Acceptance Model, Participatory Budgeting Theory, and Human Capital Theory in the context of village governance. From a practical standpoint, village governments are advised to prioritize substantive and continuous community participation throughout the entire budget cycle—encompassing not only deliberation but also budget implementation and financial monitoring. Investment in digital infrastructure and apparatus training programs, supported by fair and timely compensation, is also recommended to maximize the contributions of digitalization and human capital to accountability.

This study is subject to several limitations. The research was confined to ten villages within a single district in West Bandung Regency, which restricts the external validity and generalizability of its findings to other geographic contexts or regions with different demographic, infrastructural, and institutional profiles. The cross-sectional, self-administered questionnaire design may introduce response bias and precludes the establishment of long-term causal relationships. The measurement of village apparatus competence relied on perceived self-report indicators rather than objective performance assessments, which may reduce measurement precision. Furthermore, the 32.7% unexplained variance in accountability suggests that relevant variables—such as internal control quality, leadership effectiveness, or the density of community social networks—were not captured by the current model.

Future research is encouraged to expand the geographic scope to encompass multiple districts or provinces in order to enhance generalizability and enable comparative analysis across different governance contexts. Longitudinal or quasi-experimental research designs would allow more robust causal conclusions to be drawn about the temporal dynamics of digitalization, participation, and competence on accountability outcomes. A mixed-methods approach that supplements quantitative survey data with in-depth interviews, focus group discussions, or documentary analysis of village financial records would yield richer contextual insights into how these factors interact in practice. Additionally, the development of more objective and standardized measures of village apparatus competence—such as certification-based indicators or practical performance assessments—would reduce self-report bias and improve construct validity. Future models should also consider potential mediating or moderating variables, such as the quality of internal control systems, audit effectiveness, or organizational commitment, to further enrich theoretical understanding and offer more precise practical guidance for village fund governance reform in Indonesia.

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