

# The Effect of Financial Risk Analysis on Sustainable Village Development in Jayapura Regency

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## ABSTRACT

This study examines the management of village funds as a strategic policy of the Indonesian government to accelerate rural development and improve community welfare following the enactment of Law Number 6 of 2014 concerning Villages. The increasing allocation of village funds has created challenges related to financial risk management, particularly the risk of fraud caused by weak internal controls, limited transparency, and low community participation. Therefore, this research aims to analyze the effect of financial risks, namely fraud and corruption risk, liquidity risk, compliance risk, and operational risk, on sustainable village development. The study employs a mixed quantitative and qualitative approach with an associative design to test causal relationships between variables. Data were collected through offline questionnaires distributed to village apparatus in Sentani District (Hinekombe), East Sentani District, West Sentani District, and Waibu District in Jayapura Regency. Data analysis was conducted using Partial Least Squares (PLS) with SmartPLS software and supported by textual analysis using Voyant Tools. The findings reveal that fraud and corruption risk negatively and significantly affect sustainable village development, while liquidity and compliance risks show no significant influence. Operational risk demonstrates a positive and significant effect. The study concludes that improving institutional capacity, transparency, and community participation is essential to support sustainable village development.

**Keywords:** Compliance Risk, Fraud and Corruption Risk, Operational Risk, Sustainable Village Development, Village Fund Management.

## INTRODUCTION

The management of village funds is a strategic effort by the Indonesian government to accelerate development and improve community welfare at the village level. Since the enactment of Law Number 6 of 2014, village fund allocations have increased annually, reflecting the government's commitment to village independence and development. However, increasing funds also creates challenges related to financial risk management (Fikasari, 2024). Proper risk management is essential to ensure effective, efficient, and targeted use of funds and to support sustainable village development goals. Research by Widiarini and Astawa (2023) highlights the importance of risk identification and mitigation. Fraud risk, driven by weak internal controls and low transparency, remains a major concern (Rusydi, 2023).

Community participation in planning and supervising village fund utilization plays a vital role in financial risk management by improving transparency, accountability, and alignment with local needs while reducing the potential misuse of funds (Sari, 2023). Human resource capacity also poses significant risks, as limited competence among village officials may lead to errors in planning, implementation, and reporting due to insufficient training and limited understanding of Islamic financial management

(Fikasari, 2024). Therefore, education and training in financial risk management are essential to enhance officials' capabilities, as villages with trained officials demonstrate better financial management performance (Setyorini et al., 2022). The use of information technology further strengthens transparency through real-time monitoring and evaluation (Syachbrani, 2024). In addition, external risks such as policy changes and economic fluctuations require adaptive risk management strategies to maintain sustainable village development. Effective village fund management can improve community welfare when supported by adaptability to external changes (Utami, 2024). Collaboration among village governments, local governments, and communities also enhances accountability and transparency through comprehensive risk identification and mitigation (Astuti et al., 2021).

In recent years, village fund management in Jayapura Regency has faced several challenges related to financial risks and efforts to achieve sustainable villages. In 2020, village fund allocations decreased from IDR 134 billion to IDR 118 billion, a reduction of approximately IDR 16 billion, creating difficulties for village governments in managing limited budgets and potentially affecting community development and welfare programs (Kabupaten Jayapura, 2022). Furthermore, in 2025, the public works sector budget was reduced by more than IDR 34 billion, impacting the Village Fund Allocation (*Alokasi Dana Kampung/ADK*). Although the Village Fund (*Dana Desa/DD*) remained above IDR 122 billion and was not directly affected by efficiency policies, these cuts risk slowing infrastructure development essential for village sustainability (Jubi, 2025). Despite these challenges, village fund management in Jayapura Regency has shown significant improvement over the past three years. In 2023, the Jayapura Regency Government received an award as the third-best district in village fund management from the Jayapura State Treasury Service Office (*Kantor Pelayanan Perbendaharaan Negara/KPPN*), reflecting achievements in timely distribution, compliance, and accurate financial reporting. The Ministry of Villages, Development of Disadvantaged Regions, and Transmigration also recognized the region's performance, supported by the implementation of the Siskeudes application developed by the Financial and Development Supervisory Board (*Badan Pengawasan Keuangan dan Pembangunan/BPKP*) to enhance transparency and accountability, although further optimization is still required (Antara News, 2023). Capacity-building efforts were strengthened through a financial management workshop conducted by BPKP Papua Province in September 2024 (BPKP, 2024). Additionally, the Papua Province Regional Development Plan (RPD) 2024–2026 emphasizes effective village fund management as a key strategy for inclusive and sustainable village economic growth (BAPPERIDA Provinsi Papua, 2023).

Good financial risk management in village fund management not only prevents financial losses but also supports the achievement of sustainable village development goals. With effective risk management, villages can optimize the use of funds for programs that have a positive impact on the community. Research shows that villages with good risk management tend to have more successful and sustainable development programs (Solehan & Sukresno, 2024). Based on this, the purpose of this research is to test and analyze financial risks in village fund management to enhance sustainable village development in Jayapura Regency. The benefits of this research are not only to enrich scientific research in the field of village fund accounting, but also to be a reference in other sectors in encouraging the direction of sustainable village development. Also, the government should supervise the level of use of village funds in optimizing the use of village funds for programs that have a sustainable, positive impact on the community.

## LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT

### The Effect of Risk of Fraud and Corruption on Sustainable Village Development

The risk of fraud and corruption is a critical barrier to achieving sustainable village development, particularly in the management of village funds. Indonesia Corruption Watch (ICW) reports show numerous cases of village-level corruption between 2015 and 2022, including the misuse of village fund allocations and village revenue, resulting in

significant state losses (Djpb Kemenkeu, 2024). Fraud and corruption reduce transparency and accountability, eroding public trust and undermining development outcomes. Stakeholder Theory emphasizes that involving multiple actors in village governance, such as local governments, communities, and indigenous leaders, is necessary to enhance transparency and mitigate financial risks (Chaerunisa & Siregar, 2023). Weak internal control systems and a lack of oversight increase the likelihood of misappropriation and financial mismanagement.

Research suggests that strengthening the Internal Control System (*Sistem Pengendalian Internal/SPI*), improving the capacity of village officials, and encouraging community participation in supervision are effective strategies to reduce corruption risks (Utomo, 2024). Such measures not only prevent financial losses but also ensure that village programs align with community needs and support the Village SDGs (Adha, 2022). Prior studies demonstrate that failure in financial governance affects accountability and impedes sustainable development, highlighting that fraud and corruption risks have both economic and social consequences. Therefore, managing these risks is fundamental to ensuring that village funds are used effectively, contributing to long-term sustainability and community welfare.

H1: Risk of fraud and corruption has a positive effect on the sustainable village development.

### **The Effect of Liquidity Risk on Sustainable Village Development**

Liquidity risk in village fund management refers to the inability of village governments to meet short-term financial obligations, which can delay development projects and reduce public confidence. Factors contributing to liquidity risk include inaccurate budgeting, delayed fund disbursement, and uncontrolled spending (Susyanti & Utami, 2023). Errors in financial management, such as inaccurate population data, weak village planning deliberations, and poorly prepared financial documents, can hinder the implementation and planning of sustainable village development programs. Effective cash planning and integrated monitoring systems are necessary to anticipate liquidity needs and manage cash flow efficiently (Muslih, 2020).

Although liquidity risk affects operational continuity, its direct influence on sustainable village development is limited. Research by Muslih (2020) and Susyanti and Utami (2023) indicates that sustainable outcomes rely more heavily on institutional capacity, governance quality, and stakeholder participation. Poor liquidity can temporarily delay projects, but does not necessarily prevent villages from achieving long-term goals if other governance and management systems are strong. Therefore, liquidity management should be considered within the broader context of financial risk management, emphasizing planning, transparency, and community oversight as strategies to ensure that liquidity challenges do not compromise the sustainability of development outcomes.

H2: Liquidity risk has a positive effect on the sustainable village development.

### **The Effect of Compliance Risk on Sustainable Village Development**

Compliance risk arises when village fund management does not adhere to government regulations and policies. Non-compliance can result from a weak understanding of regulations, complex rules, or insufficient internal controls, leading to administrative sanctions and diminished public trust (Biduri et al., 2022). Misappropriation of village budgets often occurs due to low transparency and accountability, which can hinder the achievement of sustainable development goals. Regulatory frameworks that do not fully support village autonomy may also limit flexibility, reducing the capacity of village governments to address local needs effectively (Rifa'i, 2023).

However, compliance alone does not ensure sustainability. Studies emphasize that regulations must be implemented with adequate institutional capacity, human resources,

and stakeholder participation to be effective (Biduri et al., 2022; Rifa'i, 2023). Weak regulatory enforcement or poorly communicated rules may create administrative burdens rather than improve performance. Therefore, compliance risk is a potential hindrance, but its impact on sustainable village development depends on regulatory clarity, proper supervision, and the competency of village officials to translate rules into effective local development practices. Effective compliance management should therefore integrate training, community involvement, and transparent oversight to enhance development outcomes (Susyanti & Utami, 2023).

H3: Compliance risk has a positive effect on the sustainable village development.

### The Effect of Operational Risk on Sustainable Village Development

Operational risk is closely related to limited human resource capacity and weak financial administration in village governance. Many village officials lack sufficient competence in financial management, resulting in errors and inefficiencies that hinder accountability (Salsabila, 2022). Weak documentation, non-standard procedures, and poor internal oversight exacerbate operational risk (Biduri et al., 2022; Sulistyaningsih & Lindrianasari, 2025). Risk management theory highlights the importance of identifying and mitigating operational vulnerabilities to achieve organizational goals, including sustainable development (Muslih, 2020). Operational failures can prevent the proper allocation of funds, reduce efficiency, and compromise the success of development programs.

Integrating information technology in village financial management can mitigate operational risks by improving accuracy, efficiency, and transparency, but this requires adequate staff competence and strong internal controls (Salsabila, 2022). Research by Syarif (2023) shows that effective administrative systems and IT applications enhance accountability and the effectiveness of village programs. Operational improvements also support the achievement of Village SDGs, which require adaptive institutions and responsive governance (Adha, 2022; Setiya et al., 2024). Consequently, effective operational risk management strengthens institutional performance, ensures responsible use of funds, and positively contributes to sustainable village development by aligning resources with community needs and program goals.

H4: Operational risk has a positive effect on the sustainable village development.

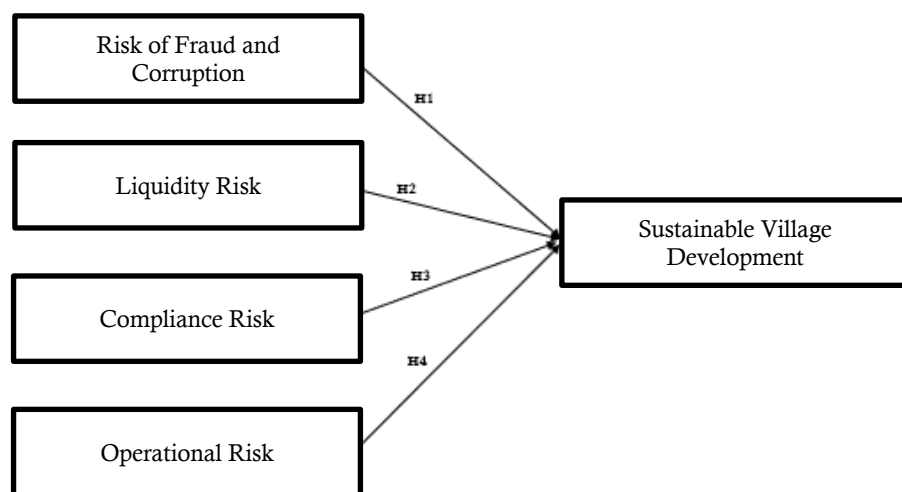


Figure 1. Conceptual Framework

Figure 1 illustrates the conceptual research model depicting the relationships between risk factors and sustainable village development. In this model, risk of fraud and

corruption, liquidity risk, compliance risk, and operational risk function as independent variables, each tested through hypotheses H1 to H4. All risk variables are proposed to influence the dependent variable, namely, sustainable village development. The model emphasizes that various forms of risk in village governance and financial management may affect the achievement of sustainable development outcomes through the quality of governance and operational management at the village level.

## **RESEARCH METHODS**

This study employs a mixed-method research design combining quantitative and qualitative approaches with an associative framework to examine causal relationships between independent variables and dependent variables. The quantitative approach is used to test the influence of financial risk variables on sustainable village development, while the qualitative approach complements the analysis by exploring respondents' perspectives regarding challenges and recommendations in village fund management. The research population consists of village apparatus in villages located in Jayapura Regency. The sampling technique applied is purposive sampling, in which respondents are selected based on specific criteria relevant to the research objectives, particularly individuals directly involved in village financial management, such as village heads, village treasurers, and members of village consultative bodies. The selected samples include villages in Sentani District (Hinekombe), East Sentani District, West Sentani District, and Waibu District in Jayapura Regency.

Data collection was conducted through the distribution of offline questionnaires to respondents. The research instrument used a structured questionnaire measured using a Likert scale ranging from 1 to 5, consisting of strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). This instrument was designed to measure variables related to financial risks and sustainable village development through indicator-based questions. In addition, two open-ended questions were included to capture qualitative information regarding challenges faced in village fund management and respondents' suggestions to improve transparency and accountability.

The data analysis technique utilized Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS software. PLS was chosen because it is a variance-based analytical method that can be applied to various data scales and does not require strict statistical assumptions. This method is suitable for testing complex and hierarchical causal relationships within the conceptual framework, including fraud and corruption risk, liquidity risk, compliance risk, and operational risk in relation to sustainable village development. Furthermore, PLS is effective for confirming constructs measured through multiple indicators and for testing theoretical relationships simultaneously.

In addition to quantitative analysis, qualitative data obtained from open-ended responses were analyzed using the Voyant Tools application, a web-based text mining tool. This tool enables systematic analysis of textual data to identify recurring themes, dominant issues, and respondents' perspectives related to village fund management practices. The integration of SmartPLS and Voyant Tools enables this study to provide comprehensive findings by combining statistical causal analysis with qualitative insights, thereby strengthening the overall interpretation of financial risk management in support of sustainable village development.

## **RESULTS**

### **Quantitative Findings**

Data collection in this study was obtained by distributing questionnaires to respondents by visiting directly the sampling locations, namely 26 villages in Sentani District (Hinekombe), East Sentani District, West Sentani District, and Waibu District in the Jayapura Regency area with a total of 208 people, with 8 (eight) key respondents, namely village heads, village secretaries, treasurer of the village fund/head of finance, head of general and planning, and head of administration/government, head of welfare

section, Village Representative Council (*Badan Musyawarah Kampung/Bamuskam*) and community representatives.

**Table 1.** Respondent Characteristics

Characteristic	Category	Frequency	Percentage
Gender	Male	120	77%
	Female	35	23%
Age	< 20	0	0%
	21-30	15	10%
	31-40	33	21%
	41-50	47	30%
	51-60	40	26%
	> 61	20	13%
Education Level	Elementary School	3	2%
	Junior High School	13	8%
	High School/Vocational School	104	67%
	Diploma (D3)	3	2%
	Bachelor (S1)	31	20%
	Master (S2)	1	0.6%
Long Time Working	< 5 Years	95	61%
	6-10 Years	27	18%
	11-20 Years	14	9%
	> 20 Years	6	4%
Community Representatives		13	8%

Based on Table 1, all respondents were 155 people, or 100%, from Jayapura Regency. With the majority of respondents being male (77%), more than three-quarters of the total respondents were male. In terms of age, the largest group is 41–50 years (30%), followed by 51–60 years (26%). This shows that the majority of respondents are of productive and experienced age. Meanwhile, in the education level category, most respondents had high school/vocational education (67%), with 20% already having S1 education. Only 1 respondent was highly educated (S2). Among respondents who have worked as village officials, the majority (61%) have worked for < 5 years, while those who have worked for >20 years are only 4%. This means that a small number of respondents are not village officials, but representatives of the general public.

**Table 2.** Outer Loading Test

Variable	Items	Outer Loading	Cronbach's Alpha	rho-a	rho-c	AVE
Risk of Fraud and Corruption (X1)	X1.1	0.750	0.911	0.934	0.933	0.701
	X1.2	0.826				
	X1.3	0.873				
	X1.4	0.687				
	X1.5	0.854				
Liquidity Risk (X2)	X2.1	0.614	0.800	0.844	0.834	0.475
	X2.2	0.796				
	X2.3	0.605				
	X2.4	0.325				
	X2.5	0.692				
Compliance Risk (X3)	X3.1	-0.547	0.700	0.772	0.728	0.408
	X3.2	0.549				
	X3.3	0.695				
	X3.4	0.635				
	X3.5	0.727				
	X3.6	0.509				
Operational Risk (X4)	X4.1	-0.211	0.697	0.853	0.772	0.476
	X4.2	0.729				
	X4.3	0.142				
	X4.4	0.893				
	X4.5	0.829				

Variable	Items	Outer Loading	Cronbach's Alpha	rho-a	rho-c	AVE
Sustainable Village Development	Y1	0.818	0.900	0.923	0.921	0.597
	Y2	0.820				
	Y3	0.793				
	Y4	0.624				
	Y5	0.736				
	Y6	0.667				
	Y7	0.655				

Table 2 presents the results of the validity and reliability assessment of the measurement model using PLS-SEM, evaluated through outer loadings, Cronbach's Alpha, rho-a, composite reliability (rho-c), and Average Variance Extracted (AVE). The constructs risk of fraud and corruption (X1) and sustainable village development (Y) meet the required criteria for convergent validity and reliability, as indicated by reliability values exceeding 0.70 and AVE values above 0.50. In contrast, liquidity risk (X2), compliance risk (X3), and operational risk (X4) exhibit suboptimal convergent validity because their AVE values remain below the recommended threshold of 0.50, mainly due to several indicators with low or negative outer loadings. Thus, the findings indicate that most constructs demonstrate acceptable reliability; however, certain indicators require further evaluation to improve the overall quality of the measurement model.

Table 3. HTMT and Fornell-Lacker Test

Test	Variable	Y	X3	X2	X4	X1
HTMT Test	Fraud and Corruption Risk (X1)	0.623	0.816	0.677	0.423	
	Operational Risk (X4)	0.436	0.519	0.439		
	Liquidity Risk (X2)	0.364	0.851			
	Compliance Risk (X3)	0.516				
Fornell Lacker Test	Sustainable Village Development (Y)	0.772				
	Compliance Risk (X3)	-0.493	0.639			
	Liquidity Risk (X2)	-0.371	0.670	0.689		
	Operational Risk (X4)	0.431	-0.160	-0.039	0.690	
	Fraud and Corruption Risk (X1)	-0.586	0.712	0.646	-0.320	0.837

Table 3 presents the Heterotrait–Monotrait Ratio (HTMT) test results used to assess discriminant validity among the study variables. The HTMT values between risk of fraud and corruption and other constructs range from 0.423 to 0.816, with the highest correlation observed with X3 (0.816). The relationship between liquidity risk and X3 is 0.851, while compliance risk shows a value of 0.516, and operational risk ranges from 0.436 to 0.519 with other variables. Thus, all reported HTMT values are below the commonly accepted threshold of 0.90 (or the stricter 0.85 criterion), indicating that discriminant validity is established. This suggests that each construct in the model is empirically distinct and measures different conceptual dimensions.

Table 3 also presents the Fornell–Larcker criterion results to evaluate discriminant validity. The square root of the AVE for each construct, sustainable village development (0.772), risk of fraud and corruption (0.639), liquidity risk (0.689), compliance risk (0.690), and operational risk (0.837), is greater than their correlations with other variables in the model. Although some correlations are moderately high, such as between operational risk and risk of fraud and corruption (0.712), the diagonal values remain higher than the corresponding inter-construct correlations. Therefore, the Fornell–Larcker criterion is satisfied, indicating that each construct demonstrates adequate discriminant validity and is empirically distinct from the others.

**Table 4.** Cross Loading Test

Variable	Items	X1	X2	X3	X4	Y
Risk of Fraud and Corruption (X1)	X1.1	-0.580	-0.373	-0.494	0.414	0.999
	X1.2	-0.481	-0.141	-0.311	0.533	0.818
	X1.3	-0.463	-0.350	-0.425	0.341	0.820
	X1.4	-0.494	-0.314	-0.424	0.383	0.793
	X1.5	-0.314	-0.317	-0.436	0.012	0.624
Liquidity Risk (X2)	X2.1	-0.334	-0.222	-0.313	0.225	0.667
	X2.2	-0.489	-0.288	-0.335	0.364	0.655
	X2.3	-0.261	-0.256	-0.547	0.261	0.441
	X2.4	0.455	0.496	0.549	0.009	-0.195
	X2.5	0.423	0.553	0.695	0.018	-0.276
Compliance Risk (X3)	X3.1	0.691	0.461	0.727	-0.230	-0.422
	X3.2	0.305	0.304	0.509	-0.044	-0.153
	X3.3	0.588	0.553	0.762	0.019	-0.228
	X3.4	0.386	0.614	0.480	-0.024	-0.136
	X3.5	0.552	0.796	0.452	-0.075	-0.398
	X3.6	0.304	0.605	0.515	0.149	-0.164
Operational Risk (X4)	X4.1	0.469	0.692	0.454	-0.106	-0.216
	X4.2	0.575	0.943	0.652	0.008	-0.270
	X4.3	0.435	0.441	0.452	-0.211	-0.152
	X4.4	-0.151	-0.069	-0.158	0.729	0.265
	X4.5	0.150	0.298	0.369	0.142	0.044
Sustainable Village Development	Y1	-0.244	0.019	-0.120	0.829	0.392
	Y2	-0.099	0.184	0.092	0.878	0.347
	Y3	0.750	0.634	0.604	-0.061	-0.345
	Y4	0.826	0.521	0.585	-0.368	-0.513
	Y5	0.873	0.483	0.615	-0.318	-0.538
	Y6	0.687	0.402	0.436	-0.123	-0.365
	Y7	0.854	0.572	0.608	-0.332	-0.538

Table 4 presents the cross-loading test results used to assess discriminant validity at the indicator level. Most indicators exhibit higher loading values on their respective constructs than on other variables, indicating that the items appropriately measure their intended constructs. For instance, several indicators of compliance risk (X3) and operational risk (X4) demonstrate relatively strong loadings on their corresponding latent variables.

Nevertheless, some indicators display relatively high cross-loadings on other constructs, particularly several items under sustainable village development (Y) and operational risk (X4), which also load substantially on X1, X2, or X3. Despite this, the total construct loadings remain highest on their designated variables. Therefore, the model generally demonstrates acceptable discriminant validity. However, the presence of notable cross-loadings suggests that refinement of certain indicators may be necessary to enhance construct clarity and measurement accuracy.

**Table 5.** Multicollinearity Test

Relationship	VIF
Risks of fraud and Corruption → Sustainable Village Development	2.576
Liquidity Risk → Sustainable Village Development	2.122
Compliance Risks → Sustainable Village Development	2.398
Operational Risks → Sustainable Village Development	1.178

Table 6 presents the multicollinearity test results using the Variance Inflation Factor (VIF) to examine potential collinearity among the independent variables. The VIF values for risks of fraud and corruption (2.576), liquidity risk (2.122), compliance risks (2.398), and operational risks (1.178) in relation to sustainable village development are all below the commonly accepted threshold of 5.0 (and even the stricter threshold of 3.3). These results indicate that multicollinearity is not a concern in the structural model. Therefore, the independent variables do not exhibit high intercorrelations, and each construct contributes uniquely to explaining sustainable village development.

Table 6. F-Square and R-Square

Variable	F Square	R Square	Adjusted R-Square
Risk of Fraud and Corruption	0.086		
Liquidity Risk	0.000		
Compliance Risk	0.027	0.427	0.412
Operational Risk	0.121		

Table 6 presents the R-square and Adjusted R-square values for sustainable village development. The R-square value of 0.427 indicates that approximately 42.7% of the variance in sustainable village development can be explained jointly by risks of fraud and corruption, liquidity risk, compliance risks, and operational risks. Meanwhile, the Adjusted R-square value of 0.412 shows a slight adjustment after accounting for the number of predictors in the model. This suggests that the model has moderate explanatory power, as the independent variables collectively provide a meaningful contribution to explaining variations in sustainable village development.

Table 6 presents the f-square ( $f^2$ ) effect size results, which assess the individual contribution of each exogenous variable to sustainable village development (Y). The effect size of operational risk (0.121) indicates a small to moderate effect on Y, while risk of fraud and corruption (0.086) demonstrates a small effect. Compliance risk shows a very small effect (0.027), and liquidity risk has no effect (0.000) on sustainable village development. Thus, these findings suggest that operational risk provides the strongest contribution among the predictors, whereas liquidity risk does not meaningfully contribute to explaining variations in village development sustainable within the model.

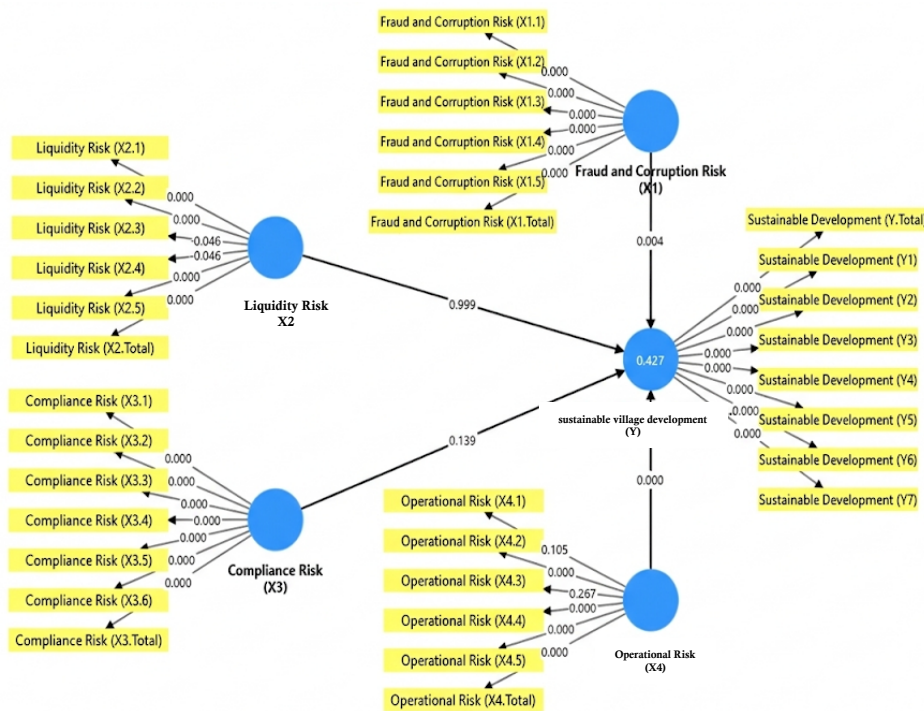


Figure 2. Bootstrapping Test Result

Based on Figure 2, the R-square ( $R^2$ ) value for sustainable village development (Y) is 0.427, indicating that risks of fraud and corruption (X1), liquidity risk (X2), compliance risk (X3), and operational risk (X4) jointly explain 42.7% of the variance in sustainable village development. The remaining 57.3% is influenced by other factors not included in the model. This suggests that the model demonstrates moderate predictive capability.

In terms of structural relationships, risks of fraud and corruption (X1) show a negative and significant influence on sustainable village development ( $\beta = -0.356$ ), indicating that higher fraud and corruption risks reduce sustainable development outcomes. Liquidity

risk (X2) does not demonstrate a significant effect ( $\beta = -0.000$ ), suggesting that liquidity conditions do not directly determine sustainable village development within this model. Compliance risk (X3) shows a negative but statistically insignificant relationship ( $\beta = -0.194$ ), implying that regulatory compliance alone is insufficient to influence development sustainability. Meanwhile, operational risk (X4) exhibits a positive and significant effect ( $\beta = 0.285$ ), indicating that improved operational risk management contributes to strengthening sustainable village development.

Table 7. Path Coefficient Test

Hypothesis Testing	Original Sample	Sample Average	Standard Deviation	t-statistics	p-values
Risks of Fraud and Corruption → Sustainable Village Development	-0.356	-0.331	0.123	2.884	0.004
Liquidity Risk → Sustainable Village Development	-0.000	-0.028	0.096	0.002	0.999
Compliance Risks → Sustainable Village Development	-0.194	-0.202	0.131	1.479	0.139
Operational Risks → Sustainable Village Development	0.285	0.300	0.073	3.898	0.000

Referring to the results presented in Table 7, the structural relationships among the latent variables indicate mixed findings. The effect of risk of fraud and corruption on sustainable village development is negative and statistically significant ( $\beta = -0.356$ ;  $t = 2.884 > 1.96$ ;  $p = 0.004 < 0.05$ ), thereby supporting H1. This implies that higher levels of fraud and corruption risk are associated with lower levels of sustainable village development. In contrast, liquidity risk shows no significant effect on sustainable village development ( $\beta = -0.000$ ;  $t = 0.002 < 1.96$ ;  $p = 0.999 > 0.05$ ), leading to the rejection of H2.

Similarly, compliance risk does not have a statistically significant influence on sustainable village development ( $\beta = -0.194$ ;  $t = 1.479 < 1.96$ ;  $p = 0.139 > 0.05$ ), resulting in the rejection of H3. On the other hand, operational risk demonstrates a positive and statistically significant effect ( $\beta = 0.285$ ;  $t = 3.898 > 1.96$ ;  $p = 0.000 < 0.05$ ), confirming H4. These findings suggest that among the examined risk variables, only fraud and corruption risk (negatively) and operational risk (positively) significantly influence sustainable village development within this model.

### Qualitative Findings

The results of qualitative data analysis on challenges in village fund management using the Voyant Tools application produced a word cloud visualization that displays dominant keywords such as “funds”, “management”, “lack”, “village/village”, and “community”, as shown in Figure 3. The appearance of these words illustrates that the main issue in the discussion on sustainable village development focuses on challenges in the management of village funds. The words “funds” and “management” affirm the importance of effective, transparent, and accountable village financial governance as the foundation for realizing sustainable development. The management of village funds needs to be directed to systematically support sustainable development (Permatasari et al., 2021). However, the presence of the word “lack” shows that there are still various limitations in its implementation, both in terms of the capacity of village officials and community participation. Indra and Khoirunurrofik (2022) show the importance of the capacity of village apparatus in the use of funds for health interventions, as part of sustainable social development.

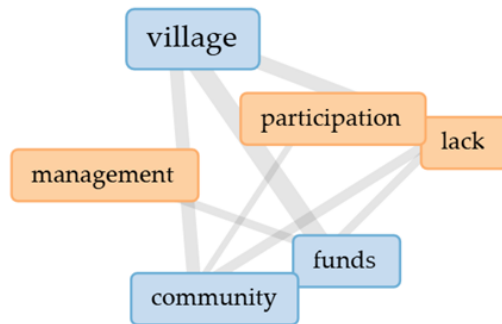


Figure 3. Results of Voyant Data Processing

Furthermore, the word “community” that appears is quite dominant in reflecting the important role of the community in the village fund management cycle, starting from the planning, implementation, and supervision stages. However, the weak involvement of the community shows that the participatory principle in village development has not been running optimally. This has implications for a lack of sense of ownership and shared responsibility in maintaining the sustainability of development results. Hilmawan et al. (2023) examined the relationship between village funds, BUMDes, and village original income on village development, showing that village economic instruments must be managed in a participatory manner to provide sustainable benefits.

Meanwhile, the word “village” emphasizes the context of research that focuses on the lowest levels of government, where the process of sustainable development is supposed to be rooted in local needs and potential. Thus, the results of this analysis show that the main challenges in the management of village funds to achieve sustainable villages lie in the aspects of governance, human resource capacity, and community participation. Prasetyo et al. (2025) found that the focus is on community involvement, transparency, and recommendations of community-based supervision models to strengthen village governance. Therefore, it is necessary to strengthen the village’s financial management system based on public accountability, as well as increase the capacity and awareness of the community on the importance of sustainable development.

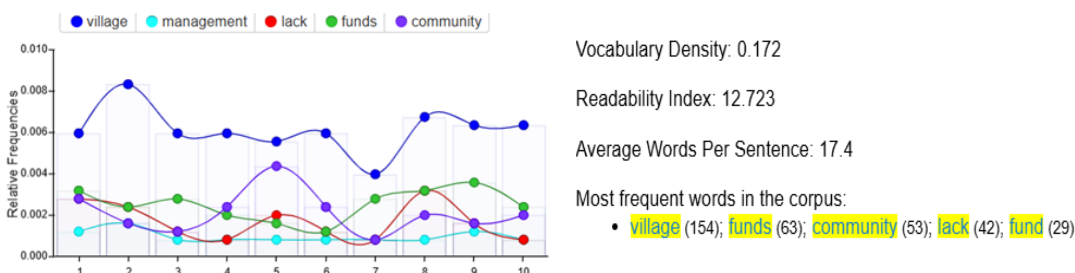


Figure 4. Result of Voyant Data Processing

The results of data analysis using Voyant Tools showed that words such as “village” (154 words), “funds” (63 words), “community” (53 words), “less” (42 words), and “fund” (29 words) dominated the discussion related to the challenges of managing village funds. The high frequency of the words “funds” and “villages” confirms that the aspect of fund management at the village level is the main focus in efforts to realize sustainable village development. Meanwhile, the words “community” and “lack” describe limited participation and resource challenges in the implementation of development programs.

This finding is in line with the stakeholder theory put forward by Mitchell et al. (1997), which emphasizes that the success of an organization or public institution depends on the extent to which all stakeholders are involved in the decision-making process. In the context of village fund management, stakeholders include village governments, communities, customary institutions, and supervisory agencies such as the Village

Community Empowerment Office (*Dinas Pemberdayaan Masyarakat dan Desa/DPMK*) and the Regional Financial and Asset Management Agency (*Badan Pengelolaan Keuangan dan Aset Daerah/BPKAD*), as well as the District Inspectorate. When community participation is still lacking, as illustrated by the appearance of the words “less” and “community” in the data, it shows that the principles of collaboration and accountability between parties have not been optimal. As a result, village funds, which are supposed to be instruments for equitable distribution of welfare, have not been able to provide maximum sustainable impact. Zeho et al. (2020) emphasized that collaborative stakeholders in village fund management involve village government officials, activity management teams, and communities. They play a positive role in realizing village accountability in managing village funds. Increasing community participation contributes to program evaluation activities and effectiveness in village financial management.



Figure 5. Result of Voyant Data Processing

Figure 5 shows, the word network visualization generated using Voyant Tools reveals strong relationships among the words management, community, training, and apparatus as dominant themes emerging from suggestions and inputs within the research data, while the words village and fund appear as supporting elements, indicating that the primary discussion context centers on village fund management conducted by village apparatus and supported by community participation. These findings suggest that the effectiveness of village fund governance depends not only on administrative systems but also on human resource capacity and social involvement. The close association between management, apparatus, and training highlights the need to strengthen the competencies of village officials through continuous capacity-building programs to enhance transparency and accountability in administrative, recording, and financial reporting processes, consistent with Hilmawan et al. (2023), who emphasize the importance of apparatus competence in improving accountability in village fund management.

Furthermore, the relationship between management and community reflects the critical role of community participation in planning and supervisory processes to ensure that village fund utilization aligns with actual community needs and sustainable development principles, supporting the findings of Farhan et al. (2023) regarding the positive influence of participation, accountability, and transparency on effective village fund management. Moreover, the integration of social and economic development with local participation is essential for achieving sustainable village development outcomes, as highlighted by Indra and Khoirunurrofik (2022), demonstrating that effective fund management at the village level directly contributes to improving community welfare.

Based on Figure 6, the results of data processing using Voyant Tools, words such as “village” (193 occurrences), “funds” (47), “community” (37), and “management” (26) appeared dominantly and repeatedly in the analyzed corpus. The high frequency of “community” and “village” indicates that community roles and local context constitute the primary focus of respondents’ suggestions and inputs. Meanwhile, the consistent

appearance of the word “training” highlights the urgency of strengthening the capacity of village apparatus in financial management, particularly in improving accountability and transparency. The findings further reveal that the most prominent recommendations emphasize enhancing apparatus competence through continuous training and increasing community involvement in supervision and evaluation processes. The dominance of the words “training,” “community,” “village,” and “fund” suggests that human resource quality and public participation are central factors in achieving sustainable village fund governance.

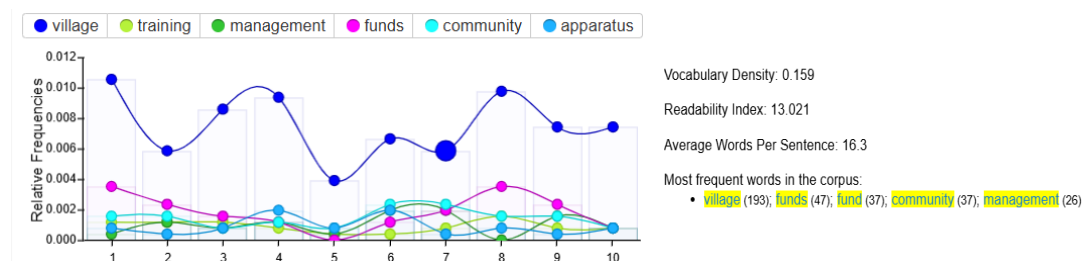


Figure 6. Result of Voyant Data Processing

From a stakeholder theory perspective, community members and village officials act as key actors responsible for ensuring that fund utilization aligns with principles of justice and public accountability. The sustainable development perspective also emphasizes that accountable and transparent village fund management strengthens public trust while fostering inclusive and equitable local economic growth (Karimah & Zulkifli, 2023). Overall, these findings confirm that sustainable village governance requires synergy between apparatus capacity and community participation. Transparency and accountability cannot rely solely on formal regulations but must be supported by collective stakeholder awareness and good governance practices, reinforced through continuous training and active community engagement (Hilmawan et al., 2023).

## DISCUSSION

The findings indicate that risks of fraud and corruption have a negative and significant effect on sustainable village development ( $\beta = -0.356$ ;  $t = 2.884$ ;  $p = 0.004$ ), suggesting that higher corruption exposure reduces sustainability outcomes at the village level. This result is consistent with Mackey et al. (2018), who argue that corruption undermines public systems and SDG achievement. Village-level empirical evidence confirms that transparency and anti-corruption governance are positively associated with development performance (Munir et al., 2020). Other studies by Putri et al. (2023) and Hidajat (2024) show that fund misallocation and nepotism weaken local sustainability indicators, while cross-country panel analyses by Fhima et al. (2023) demonstrate that corruption suppresses sustainable development achievements.

Liquidity risk does not show a significant effect on sustainable village development ( $\beta = -0.000$ ;  $t = 0.002$ ;  $p = 0.999$ ), indicating that short-term financial capacity is not a direct determinant of sustainability outcomes. Similar evidence is reported by Purwanti (2024), who found that liquidity ratios did not significantly influence BUMDes’ financial performance. Farhan et al. (2023) also demonstrate that liquidity does not significantly moderate sustainability-related performance. Empirical findings further indicate that fluctuations in liquidity ratios do not consistently correlate with the capacity to support development programs, supporting the view that more dominant risks may overshadow liquidity effects (Karimah & Zulkifli, 2023; Eltweri et al., 2024).

Compliance risk shows a negative but statistically insignificant relationship with sustainable village development ( $\beta = -0.194$ ;  $t = 1.479$ ;  $p = 0.139$ ). Although regulatory non-compliance may reduce development effectiveness, it is not identified as a dominant explanatory factor. Prior studies emphasize that administrative compliance alone is

insufficient without adequate implementation capacity and stakeholder participation (Widianingsih et al., 2024). Rasdin et al. (2024) report improvements in transparency practices, though information accessibility remains limited. Evidence also indicates that regulatory compliance does not independently determine sustainability performance, as institutional and stakeholder capacity are equally critical (Marti & Royo, 2023; Zheng et al., 2024).

Operational risk has a positive and significant effect on sustainable village development ( $\beta = 0.285$ ;  $t = 3.898$ ;  $p = 0.000$ ), implying that improved operational risk management enhances sustainability performance. Empirical research confirms that structured risk management strengthens accountability and effective fund utilization (Ginting et al., 2023). Strengthening internal control mechanisms and information systems significantly improves village governance and sustainability outcomes (Purnamasari et al., 2024; Karlibaeva et al., 2024). Additional studies identify operational efficiency and institutional capacity as central determinants of sustainable village development performance (Zheng et al., 2024).

The results of qualitative data analysis using Voyant Tools indicate that the words “village” (154 occurrences), “funds” (63), “community” (53), “less” (42), and “fund” (29) dominate discussions on the challenges of village fund management, confirming that sustainable village development is primarily shaped by governance quality, participation, and institutional capacity. The prominence of “funds” and “village” underscores that financial management at the village level serves as a critical foundation for sustainability, while the frequent appearance of “less” signals persistent weaknesses in implementation, particularly in the competence of village officials and oversight effectiveness. Permatasari et al. (2021) emphasize that village fund management must be systematically aligned with sustainable development objectives, and Indra and Khoirunurrofik (2022) demonstrate that the capacity of village apparatus significantly determines effective fund utilization, especially in social and health programs. Moreover, the high frequency of “community” highlights the essential role of participation across planning, implementation, and evaluation stages, as participatory governance strengthens accountability and sustainability outcomes (Zeho et al., 2020; Hilmawan et al., 2023).

## **CONCLUSION**

This study concludes that risks of fraud and corruption significantly undermine sustainable village development, indicating that weak financial governance directly threatens long-term development outcomes. In contrast, liquidity risk does not directly determine sustainability performance, suggesting that short-term financial capacity is not the primary driver of development continuity. Compliance risk shows a negative but non-significant influence, implying that formal adherence to regulations alone is insufficient without effective implementation capacity. Meanwhile, operational risk demonstrates a positive contribution, confirming that stronger operational management, internal control, and administrative capacity enhance sustainable development outcomes. Qualitative findings reinforce these results, highlighting governance quality, community participation, transparency, and the need for capacity-building through training as central issues in village fund management. These findings strengthen good governance and fraud theory by emphasizing that accountability, transparency, and risk control are fundamental to sustainability in the public sector. This study underlines the urgency of prioritizing fraud prevention, strengthening supervision systems, and improving operational governance at the village level.

However, this study is limited to questionnaire data with open-ended responses and does not incorporate in-depth interviews, which may restrict contextual interpretation. The analysis also focuses primarily on financial risk variables and does not comprehensively examine external determinants such as broader institutional competence, participatory culture, and supervisory effectiveness. Future research is recommended to adopt mixed-method approaches, expand risk dimensions, and explore moderating variables such as institutional capacity and stakeholder engagement.

Policymakers, particularly the Jayapura Regency Government, are encouraged to enhance monitoring mechanisms, strengthen anti-corruption frameworks, and implement structured training programs to support accountable and sustainable village development.

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## REFERENCES

- [1] Adha, F. (2022). *Pengelola dana desa dalam mewujudkan sdgs di desa Hulu Kecamatan Tapaktuan Kabupaten Aceh Selatan*. Banda Aceh: Universitas Islam Negeri Ar-Raniry (Doctoral dissertation).
- [2] Antara News. (2023). *Kemendes RI apresiasi pengelolaan keuangan desa di Kabupaten Jayapura*. Retrieved on July 27, 2025, from <https://www.antaraneews.com/berita/3609459/kemendes-ri-apresiasi-pengelolaan-keuangan-desa-di-kabupaten-jayapura>
- [3] Astuti, P., Widayanti, R., & Damayanti, R. (2021). Transparansi dan akuntabilitas pengelolaan dana desa dalam pencapaian good governance. *Jurnal Maksipreneur*, 10(2), 164–180.
- [4] BAPPERIDA Provinsi Papua. (2023). *Rencana pembangunan daerah (RPD) Provinsi Papua tahun 2024–2026*. Retrieved on June 22, 2025, from <https://bapperida.papua.go.id/dokumen/RPJMD>
- [5] Biduri, S., Fitriyah, H., & Febriana, P. (2022). Pencegahan fraud dalam pengelolaan alokasi dana desa. *Owner: Riset dan Jurnal Akuntansi*, 6(4), 4021-4036.
- [6] BPKP. (2024). *BPKP Papua dorong sinergitas pengelolaan keuangan desa yang akuntabel untuk transformasi ekonomi inklusif dan berkelanjutan*. Retrieved on August 15, 2025, from <https://www.bpkp.go.id/id/unitKerja/49/siaranPers/QY7/bpkp-papua-barat-dorong-akuntabilitas-dana-desa-lewat-workshop-regional-2025>
- [7] Chaerunisa, A. B., & Siregar, S. V. (2023). Implementasi stakeholder engagement dalam sustainable development studi kasus pada PT XYZ. *Owner: Riset dan Jurnal Akuntansi*, 7(4), 2956-2969.
- [8] DJPb Kemenkeu. (2024). *Check and balance pengelolaan keuangan desa tingkatkan kesejahteraan masyarakat*. Retrieved on October 25, 2025, from <https://www.djpb.kemenkeu.go.id/portal/id/berita/lainnya/opini/4308-check-and-balance-pengelolaan-keuangan-desa-tingkatkan-kesejahteraan-masyarakat.html>
- [9] Eltweri, A., Sawan, N., Al-Hajaya, K., & Badri, Z. (2024). The influence of liquidity risk on financial performance. *Journal of Risk and Financial Management*, 17(2), 580-590.
- [10] Farhan, N. H. S., Almaqtari, F. A., Hazaea, S. A., & Al-ahdal, W. M. (2023). The moderating effect of liquidity on sustainability. *Heliyon*, 9(4), 39-59.
- [11] Fhima, F., Nouira, R., & Sekkat, K. (2023). How does corruption affect sustainable development? *Economic Analysis and Policy*, 78(5), 505–523.
- [12] Fikasari, S. (2024). *Pengelolaan dana desa terhadap peningkatan kesejahteraan masyarakat Desa Tuncung Kabupaten Enrekang*. Sulawesi Selatan: Institut Agama Islam Negeri Parepare (Doctoral dissertation).
- [13] Ginting, A. H., Widianingsih, I., Mulyawan, R., & Nurasa, H. (2023). Village government's risk management and village fund administration. *Sustainability*, 15(24), 16706-16716.
- [14] Hidajat, T. (2025). Village fund corruption mode: an anti-corruption perspective in Indonesia. *Journal of Financial Crime*, 32(2), 444-455.
- [15] Hilmawan, R., et al. (2023). Rural development from village funds. *Journal of Open Innovation*, 9(4), 159-170.
- [16] Indra, J., & Khoirunurrofik, K. (2022). Understanding the role of village fund and administrative capacity in stunting reduction: Empirical evidence from Indonesia. *PloS one*, 17(1), 43-62.
- [17] Jubi. (2020). *Polda Papua ungkap korupsi dana desa Rp168 miliar di Kabupaten Lanny Jaya*. Retrieved on August 15, 2025, from <https://jubi.id/polhukam/2025/polda-papua-ungkap-korupsi-dana-desa-rp168-miliar-di-kabupaten-lanny-jaya/>
- [18] Kabupaten Jayapura. (2022). *Tahun ini, alokasi dana desa untuk Kabupaten Jayapura menurun sedikit*. Retrieved on September 15, 2025, from <https://jayapurakab.go.id/tahun-ini-alokasi-dana-desa-untuk-kabupaten-jayapura-menurun-sedikit/>

- [19] Karimah, L., & Zulkifli, M. (2023). Analisis likuiditas dan profitabilitas BUMDes. *Jurnal Sosial dan Humaniora*, 9(4), 542–554.
- [20] Karlibaeva, R. H., et al. (2024). Sustainable development through operational risk management. *Risks*, 12(8), 118–126.
- [21] Mackey, T. K., Vian, T., & Kohler, J. (2018). SDGs as a framework to combat corruption. *Bulletin of the World Health Organization*, 96(9), 634–643.
- [22] Marti, L., & Royo, R. C. (2023). Disparities in SDGs compliance and country risk. *Sustainable Development*, 31(4), 3038–3051.
- [23] Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997). Toward a theory of stakeholder identification and salience. *Academy of Management Review*, 22(4), 853–886.
- [24] Munir, D. A., et al. (2020). Effect of good village governance implementation. *Utopia y Praxis Latinoamericana*, 25(2), 233–243.
- [25] Muslih, M. (2020). Penerapan manajemen risiko dalam pengelolaan dana desa. *Jurnal Media Birokrasi*, 2(1), 73–86.
- [26] Permatasari, P., et al. (2021). The village fund program in Indonesia. *Sustainability*, 13(21), 12294–12302.
- [27] Ponce, E. O. (2025). Stakeholder roles in community development. *Sustainable Development*, 13(17), 9497–9505.
- [28] Prasetyo, E., Hunainah, H., & Maulana, R. (2025). Stakeholder perspectives on village financial governance. *Progress in Social Development*, 6(1), 304–318.
- [29] Purnamasari, R., et al. (2024). Internal control and information systems in rural development. *Journal of Open Innovation*, 10(1), 242–254.
- [30] Purwanti. (2024). Rasio likuiditas dan solvabilitas BUMDesa. *Management Studies and Entrepreneurship Journal*, 5(2), 201–212.
- [31] Putri, C. M., Bosch, J. M. A., & Ravenda, D. (2023). Thirty years of village corruption research. *Sustainability*, 15(3), 9264–9274.
- [32] Rasdin, R., Hos, J., & Basri, M. (2024). Accountability and transparency of village government. *Publica*, 15(2), 223–234.
- [33] Rifa'i, A. H. M. A. D. (2023). *Rekonstruksi regulasi pengelolaan dana desa dalam meningkatkan kesejahteraan masyarakat desa*. Semarang: Universitas Islam Sultan Agung (Doctoral dissertation).
- [34] Rusydi, M. K. (2023). *Sistem pengendalian intern keuangan desa*. Retrieved on November 15, 2025, from <https://iaijawatimur.or.id/course/interest/detail/19>
- [35] Salsabila, N. (2022). *Pengaruh kompetensi aparatur desa, penggunaan teknologi informasi, sistem pengendalian internal, dan penyajian laporan keuangan terhadap akuntabilitas pengelolaan keuangan desa*. Semarang: Universitas Islam Sultan Agung (Bachelor's dissertation).
- [36] Sari, A. A. (2023). *Analisis pengelolaan dana desa dalam pelaksanaan pembangunan di Desa Waringin Jaya*. Lampung: Institut Agama Islam Negeri Metro (Doctoral dissertation).
- [37] Setiya, T., Raharjo, T., & Hadiwibowo, Y. (2024). Mengelola pembangunan berkelanjutan melalui penyusunan peraturan desa berbasis “SDGs Desa”. *Suluh: Jurnal Abdimas*, 5(2), 199–215.
- [38] Setyorini, C. T., et al. (2022). Pelatihan aparatur desa dan akuntabilitas. *Jurnal Pengabdian Bisnis dan Akuntansi*, 1(2), 1–9.
- [39] Solehan, S., & Sukresno, S. (2024). Implementasi pengelolaan dana desa untuk mewujudkan pemerintahan desa yang baik (studi kasus di Desa Ngabul Kabupaten Jepara). *Co-Value Jurnal Ekonomi Koperasi dan kewirausahaan*, 15(3), 301–313.
- [40] Sulistyarningsih, D. J., & Lindrianasari. (2025). Operational and externality risk management on cooperative performance: moderating role of good governance in Indonesia. *Jurnal Ilmiah Akuntansi Kesatuan*, 13(5), 1093–1104.
- [41] Susyanti & Utami, T. (2023). Permasalahan pengelolaan keuangan desa. *JRAK*, 19(2), 201–212.
- [42] Syachbrani, W., Akuntansi, J. I., & Ekonomi, F. (2024). Peran teknologi dalam meningkatkan akuntabilitas pengelolaan keuangan desa. *Bijac: Bata Ilyas Journal of Accounting*, 5(1), 11–018.
- [43] Syarif, M. (2024). Model pengelolaan dana desa berbasis Sustainable Development Goals (SDG's) desa. *Revenue: Jurnal Ekonomi Pembangunan dan Ekonomi Islam*, 7(01), 1–12.
- [44] Utami, R. (2024). *Analisis pengelolaan dana desa dalam meningkatkan kesejahteraan masyarakat perspektif ekonomi islam (Studi Kampung Nambah Dadi Kecamatan Terbanggi Besar Kabupaten Lampung Tengah)*. Lampung: Institut Agama Islam Negeri Metro (Doctoral dissertation).
- [45] Utomo, B. (2024). Pendekatan kriminologi dalam kasus korupsi dana desa. *JURISPRO*, 1(2), 273–287.
- [46] Widianingsih, I., Abdillah, A., Hartoyo, D., Putri, S. S. U., Miftah, A. Z., & Adikancana, Q. M. (2024). Increasing resilience, sustainable village development and land use change in Tarumajaya village of Indonesia. *Scientific Reports*, 14(1), 31–45.
- [47] Widiarini, P. Y., & Astawa, I. F. P. B. (2023). Analisis risiko BLT-DD. *Jurnal Ilmiah Akuntansi dan Humanika*, 13(1), 1–15.
- [48] Zeho, F. H., et al. (2020). Stakeholder collaboration in village fund management. *Journal of Socioeconomics and Development*, 3(2), 89–100.
- [49] Zheng, X., Herman, S. S. B., Salih, S. A., & I. S. B. (2024). Sustainable characteristics of traditional villages. *Sustainability*, 16(3), 352–367.