The Influence of Active Community Participation and Public Service Quality on Village Fund Management in Percut Sei Tuan Village

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Abstract. This study examines the impact of community participation and the quality of public services on the management of village funds in the Percut Sei Tuan Sub-district of Deli Serdang Regency. A quantitative method was employed, with surveys given to 114 respondents from the Village Consultative Body (BPD) across 18 villages. The data were tested for validity and reliability, followed by classical assumption tests and multiple linear regression analysis using SPSS. The results indicate that both active community involvement and high-quality public services have a significant and positive impact on village fund management, both individually and in combination. This suggests that the effective governance of village funds largely depends on community engagement and the quality of services provided by village officials. The findings aim to help village governments improve fund management through participatory strategies and more responsive public services.

Keywords: Community Participation, Public Service Quality, Village Fund Management

1 Introduction

Village development is a top priority for the government in its efforts to achieve equitable community welfare. Based on Law Number 6 of 2014 concerning Villages, every village in Indonesia receives village fund allocations from the State Budget (APBN) (Marhum, 2021). These funds are intended to finance infrastructure development, enhance public services, and support the empowerment of rural communities. Although the allocation of village funds continues to increase every year, the management of these funds still faces various challenges, particularly in terms of governance, accountability, and community participation (Saragih & Alpi, 2023).

Percut Sei Tuan subdistrict in Deli Serdang Regency is one of the areas with a relatively high poverty rate and significant dependence on village funds. This situation calls for more transparent, accountable, and sustainable management of village funds. Two key factors that influence the effectiveness of village fund management are active community participation and the quality of public services (Kamila et al., 2020). Involving the community in the planning, implementation, and supervision of village development ensures that these programs meet local needs. Additionally, the provision of quality public services by village officials can increase public trust, enhance citizen satisfaction, and strengthen accountability in village fund management (Sondakh et al., 2023).

ICIESC 2025, September 16, Medan, Indonesia

DOI 10.4108/eai.16-9-2025.2361173

Several other studies also reinforce the importance of community participation and Governance in the effective management of village funds. Simanjuntak et al. (2023) demonstrate that financial management, community participation, and good governance have a positive impact on village accountability, even though the factors of supervision and human resource quality are not always statistically significant. Sofia & Fitriyah (2022) emphasize the importance of participation, accountability, and transparency, but still highlight the obstacle of high corruption cases due to low community control.

Suhardi et al. (2022) assert that transparency, accountability, and participation play a significant role in increasing public trust in village fund management, which in turn can encourage community involvement in village development. This finding aligns with the results of Fachrun et al. (2020), which indicate that community participation occurs at various stages of village fund management. However, the readiness of villages to receive funds remains a significant obstacle that needs to be addressed.

Based on the above description, this study aims to analyze: (1) the impact of active community participation on village fund management, (2) the influence of public service quality on village fund management, and (3) the combined effect of active community participation and public service quality on village fund management in villages in the Percut Sei Tuan District. The results of this study are expected to contribute to the fields of public administration and village governance, as well as provide practical recommendations for village governments to improve village fund management through participatory strategies and improved public services.

2 Material and Method

Data collection was conducted by distributing questionnaires directly to respondents who were members of the Village Consultative Body (BPD) in Percut Sei Tuan Subdistrict. The questionnaire used a five-point Likert scale, ranging from “strongly disagree” to “strongly agree,” which made it easy for respondents to provide answers that reflected their perceptions.

Before being used in the study, the questionnaire instrument underwent validity and reliability testing using statistical software. This process ensured that each question item accurately and consistently measured the research variables. Once declared valid and reliable, the questionnaire was distributed to respondents as the primary source of data for the research.

The research instrument was a structured questionnaire using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). The questionnaire was designed based on three main variables, namely active community participation, quality of public services, and village fund management. The community participation indicator is referenced as Meronda M (2021). The public service quality indicator is based on the SERVQUAL dimensions, as proposed by Lupiyoadi (2015). The village fund management indicator is compiled based on the concept proposed by Nurfaidah (2022).

The collected data were then analyzed using multiple linear regression with SPSS. Before testing the hypotheses, the instruments were tested for validity and reliability, and classical assumptions were tested, including normality, multicollinearity, and heteroscedasticity. Hypothesis testing was conducted using the t-test to assess partial effects, the F-test to assess

simultaneous effects, and the coefficient of determination (R^2) to determine the contribution of independent variables to village fund management.

2.1 Data Collection

Data collection was conducted using questionnaires as the primary research instrument. According to Sugiyono (2019), a questionnaire is a data collection technique that involves providing respondents with a set of written questions or statements to answer. The questionnaire in this study was designed to measure three main variables: active community participation, quality of public services, and village fund management, with indicators determined based on previous theories and research.

The research instrument employed a five-point Likert scale, ranging from "strongly disagree" to "strongly agree," to facilitate respondents' ability to provide answers that accurately reflected their perceptions. Before distribution, the questionnaire was tested for validity and reliability using statistical software. Validity refers to the extent to which an instrument accurately measures what it is intended to measure, while reliability indicates the consistency of the measurement results. After the instrument was declared valid and reliable, the questionnaire was then distributed directly to respondents, namely BPD members in Percut Sei Tuan District. This method was chosen to ensure the accuracy, authenticity, and consistency of respondents' answers so that the data obtained could accurately reflect the conditions in the field.

3 Result and Discussion

The results of this study indicate that active community participation (X1) has a positive and significant effect on village fund management (Y). This is evidenced by a significance value of 0.000 and a t-value greater than the t-table value, which allows us to accept the hypothesis. This finding aligns with the concept of good governance, which emphasizes the importance of community involvement in planning, implementing, and monitoring village development. In other words, the greater the level of community participation, the more positive the impact on the transparency and accountability of village fund management.

Additionally, the quality of public services (X2) has also been shown to have a positive and significant effect on village fund management. The regression results reveal a significance value of 0.000 with a positive coefficient. This suggests that village officials who provide transparent, timely, and responsive services can foster community trust, ultimately leading to more effective management of village funds. This finding supports previous research underscoring the significance of public services in strengthening village governance.

Both active community participation and the quality of public services significantly impact village fund management, contributing to 45.2% of the variance ($R^2 = 0.452$). This demonstrates that these two variables play a crucial role in the successful management of village funds; however, other factors beyond the scope of this study may also influence the outcomes. These results are consistent with public administration theory, which emphasizes that effective governance requires a synergy between community participation and high-quality public services.

3.1 Validity Test

The validity test in this table 1 shows that each item in the questionnaire was evaluated based on the calculated r value, the table r value at a 5% significance level with df = 114, the significance value (sig), and the validity criteria. The table r value for a significance level of 5% is 0.1840. The validity test results show that all items have a calculated r greater than the table r, and the significance value (sig) for each item is 0.000, which is less than 0.05. Based on these criteria, all items in the questionnaire (items 1 to 4) meet the validity requirements, indicating that all of these items are valid.

Table 1. Results of Active Community Participation

No Item	Calculated R	R_{table} 5% (114)	Sig.	Criteria
1	0.551	0.1840	0.000	Valid
2	0.680	0.1840	0.000	Valid
3	0.838	0.1840	0.000	Valid
4	0.777	0.1840	0.000	Valid

Source: Primary data processed, 2024

The validity test presented in table 2 demonstrates that each item in the questionnaire was evaluated using the calculated r value in comparison to the table r value at a 5% significance level, with degrees of freedom (df) equal to 114. The table r value for this significance level is 0.1840. The results indicate that all items have a calculated r value greater than the table r value, and the significance value (sig) for each item is 0.000, which is less than 0.05. Based on these criteria, it can be concluded that all items in the questionnaire (items 1 to 4) meet the validity requirements, confirming that all of these items are valid.

Table 2. Results of Public Service Quality Validity Test

No Item	Calculated R	R_{table} 5% (114)	Sig	Criteria
1	0.731	0.1840	0.000	Valid
2	0.555	0.1840	0.000	Valid
3	0.559	0.1840	0.000	Valid
4	0.711	0.1840	0.000	Valid
5	0.661	0.1840	0.000	Valid

Source: Primary data processed, 2024

The validity test results presented in table 3 outline the outcomes for each item in the questionnaire. These results are based on the calculated r value, the critical r value from the 5% significance level table with 114 degrees of freedom (df), the significance value (sig), and the validity criteria. For this analysis, the critical table r value at a 5% significance level is 0.1840. The results indicate that all items have a calculated r value greater than the table r value, with a significance value (sig) of 0.000, which is less than 0.05. This demonstrates that each item (1 to 5) meets the validity criteria. Therefore, all items in this questionnaire are valid and can be utilized for data collection in research.

Table 3. Results of the Village Fund Management Validity Test

No Item	Calculated R	R_{table} 5% (114)	Sig.	Criteria
1	0.840	0.1840	0,000	Valid
2	0.909	0.1840	0,000	Valid

Source: Primary data processed, 2024

3.2 Reliability Test

The Cronbach's Alpha value, as indicated in the table 4, is 0.782. This value reflects a good level of reliability for the instrument used. Generally, a Cronbach's Alpha value above 0.60 signifies that the instrument is reliable. Therefore, these results demonstrate that the four items in the questionnaire possess adequate internal consistency and can be confidently used for collecting research data.

Table 4. Results of the Reliability Test of Active Community Participation

Reliability Statistics

Cronbach's Alpha	N of Items
.782	4

Source: Primary data processed, 2024

According to the table 5, the Cronbach's Alpha value is 0.753, which indicates a good level of reliability. Generally, a Cronbach's Alpha value above 0.60 suggests that the instrument is reliable. Therefore, these findings demonstrate that the five items in the questionnaire exhibit adequate internal consistency, allowing them to be confidently used for collecting research data.

Table 5. Results of the Reliability Test of Public Service Quality Variables

Reliability Statistics

Cronbach's Alpha	N of Items
.753	5

Source: Primary data processed, 2024

According to the table 6, Cronbach's Alpha value is 0.878, indicating a very high level of reliability. Generally, a Cronbach's Alpha value above 0.60 suggests that the instrument is reliable, while a value above 0.80 indicates strong internal consistency. Therefore, these results demonstrate that both items in the questionnaire have a strong degree of consistency and can be confidently used for research data collection.

Table 6. Results of the Reliability Test of Village Fund Management Variables

Reliability Statistics

Cronbach's Alpha	N of Items
.878	2

Source: Primary data processed, 2024

3.3 Normality Test

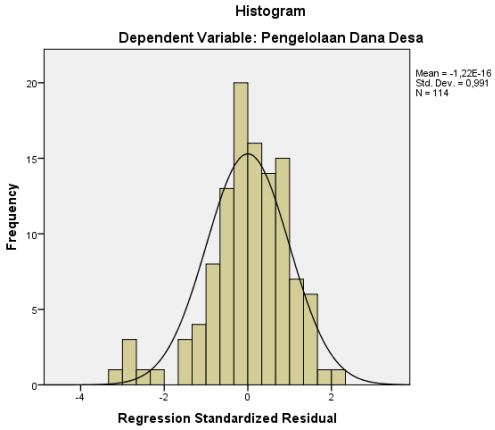

Fig.1. Histogram Display Normal Curve

The graph above indicates that the distribution of residuals is normal, as there is no significant skewness to either the right or the left. Although a few residuals deviate from the line in the graph, this is understandable given their small numbers. Furthermore, the normality of this data can also be demonstrated with the graph below and by using a normal probability plot.

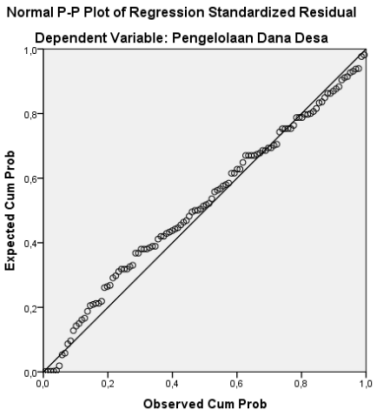

Fig. 2. Normal P-Plot

The residual data in this study are normally distributed, as demonstrated by the standard probability plot shown above. When the residuals stem from a normal distribution, their values align along a straight line. In the diagram, the scattered dots and small circles illustrate the residual distribution, which follows the direction of the diagonal line. This indicates that the assumption of normality is satisfied in this study. Additionally, a normality test was conducted using the Kolmogorov-Smirnov statistical test, yielding the following results:

Based on the Kolmogorov-Smirnov test results, the value obtained is 0.051, with a significance level of 0.200. This indicates that the residual data is normally distributed, meeting the requirement that the significance level must be greater than 0.05. Thus, the results of this test are consistent with the findings from the previous test.

Table 7. Kolmogorov-Smirnov Test Results

		Unstandardized Predicted Value
N		114
Normal Parameters[a,b]	Mean	7.4298246
	Std. Deviation	1.29576062
Most Extreme Differences	Absolute	.051
	Positive	.051
	Negative	-,049
Test Statistic		.051
Asymp. Sig. (2-tailed)		.200[c,d]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

Source: Primary data processed, 2024

3.4 Multicollinearity Test

The table 8 presents indicators used to detect multicollinearity: Tolerance and Variance Inflation Factor (VIF). The Tolerance values for the variables of Active Community Participation and Quality of Public Services are both 0.611, which exceeds the general threshold of 0.1. This suggests that there is no significant correlation between these two variables. Additionally, the VIF values for both variables are 1.637, remaining below the threshold of 10. These findings indicate that there is no significant multicollinearity problem between Active Community Participation and Quality of Public Services. As a result, the regression model can be considered reliable, without distortion from the relationship between the independent variables.

Table 8. Multicollinearity Test
Coefficients[a]

			Collinearity Statistics	
Model	T	Sig.	Tolerance	VIF
1(Constant)	1.646	.103		
Active Community Participation	-3.383	.001	.611	1.637
Quality of Public Services	8.745	.000	.611	1.637

a. Dependent Variable: Village Fund Management

Source: Primary data processed, 2024

3.5 Heteroscedasticity Test

In this scatterplot, the horizontal axis represents the standard predicted values from the regression model, while the vertical axis displays the standardized residuals. To assess for heteroscedasticity, we look for a random scatter of points around the horizontal axis without any discernible pattern, such as a fan shape or curve.

From the graph, we can observe that the points do not create a consistent pattern, such as a cone shape or any area that widens or narrows. Instead, the points appear to be scattered randomly. This suggests that the model does not exhibit significant heteroscedasticity problems.

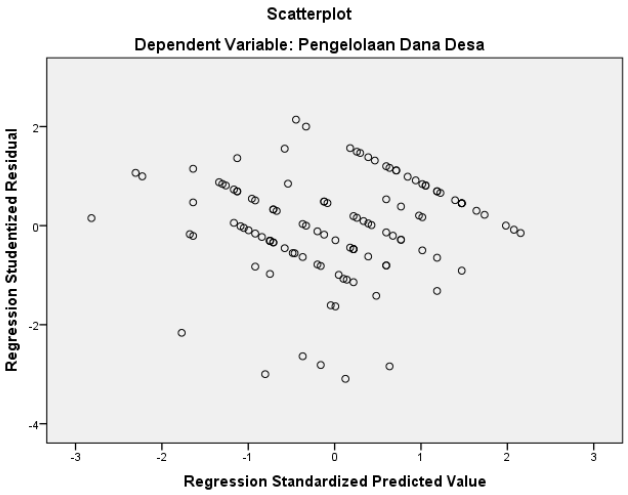

Fig.3. Scatterplot

3.6 Multiple Linear Regression Analysis

Multiple linear regression analysis in this table is used to examine the effect of two independent variables, namely Active Community Participation and Quality of Public Services, on the dependent variable, namely Village Fund Management. The following is an interpretation of each component in the Coefficients table provided:

1. **Constant (Intercept):** The constant or intercept value of 1.466 indicates that if the variables of Active Community Participation and Quality of Public Services are zero, then the predicted value for Village Fund Management is 1.466. However, this value is not statistically significant (Sig. value of 0.103 > 0.05), so the role of this constant is not very meaningful in the model.

2. **Active Community Participation:**
   a. Unstandardized Coefficients (B): The regression coefficient for the variable Active Community Participation is -0.221. This means that every one-unit increase in Active Community Participation will decrease Village Fund Management by 0.221, assuming that other variables remain constant.

b. Standardized Coefficients (Beta): A Beta value of -0.310 indicates the relative strength of this variable's influence on the dependent variable. A negative value indicates an inverse relationship
c. Significance (Sig.): A Sig. value of 0.001 (less than 0.05) indicates that the effect of Active Community Participation on Village Fund Management is statistically significant.

3. Quality of Public Services:

a. Unstandardized Coefficients (B): The regression coefficient for the Quality of Public Services variable is 0.491. This means that every one-unit increase in Quality of Public Services will increase Village Fund Management by 0.491, assuming other variables remain constant.
b. Standardized Coefficients (Beta): A Beta value of 0.802 indicates that Public Service Quality has a stronger influence on Village Fund Management than Active Community Participation.
c. Significance (Sig.): A Sig. value of 0.000 (less than 0.05) indicates that the effect of Public Service Quality on Village Fund Management is also statistically significant.

Based on these regression results (table 9), Public Service Quality has a significant and positive influence on Village Fund Management, while Active Community Participation has a significant but negative influence. This regression model shows that both independent variables contribute significantly to explaining the variation in Village Fund Management, with Public Service Quality having a stronger influence.

Table 9. Multiple Regression Analysis
Coefficients[a]

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
1(Constant)	1.466	.890		1.646	.103
Active Community Participation	-.221	.065	-.310	-3.383	.001
Quality of Public Services	.491	.056	.802	8.745	.000

a. Dependent Variable: Village Fund Management

Source: Primary data processed, 2024

$$\text{PDD} = 1.466 + \text{b1} - 0.221 + \text{b0.491} + \text{e} \quad (1)$$

3.7 Coefficient of Determination (R^2)

The Model Summary table 10 shows that the R Square value is 0.429, meaning that 42.9% of the variation in Village Fund Management can be explained by the variables of Public Service Quality and Active Community Participation. This implies that the remaining 57.1% of the variation is influenced by factors outside the model. The Adjusted R Square value is 0.419, which is slightly lower than the R Square value. This adjustment accounts for the number of variables in the model and the sample size, providing a more accurate estimate, especially when there are multiple independent variables.

The Standard Error of the Estimate is 1.507, indicating the standard deviation of the residuals or the prediction error of the model. A smaller value in this context suggests that the model is more effective in predicting the dependent variable. Finally, the Durbin-Watson value is 1.216, which is close to 2, indicating that the assumption of independence of residuals (no autocorrelation) is satisfied in this model.

Table 10. Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.655[a]	.429	.419	1.507	1.216

a. Predictors: (Constant), Quality of Public Services, Active Community Participation
b. Dependent Variable: Village Fund Management

Source: Primary data processed, 2024

3.8 F Test (Simultaneous)

According to the ANOVA table, the Sum of Squares value for Regression is 189.727, with 2 degrees of freedom (df). The Mean Square for Regression, calculated by dividing the Sum of Squares for Regression by the degrees of freedom, is 94.863. The F value is 41.750, which compares the variation explained by the regression model to the variation not explained by the model. The significance value (Sig.) in this table is 0.000, which is significantly lower than 0.05. This indicates that the regression model as a whole is statistically significant. In other words, Active Community Participation and Quality of Public Services together have a significant impact on Village Fund Management.

Table 11. F Test

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	189.727	2	94.863	41.750	.000[b]
	Residual	252.212	111	2.272		
	Total	441.939	113			

a. Dependent Variable: Village Fund Management
b. Predictors: (Constant), Quality of Public Services, Active Community Participation

Source: Primary data processed, 2024

3.9 t-test (Partial)

Based on the results of the t-test according to the table above and using the SPSS program, it can be concluded that:

1. Community Active Participation Variable

   Based on the t-test results, the Community Active Participation variable has a t-value of -3.383 with a significance value of 0.001. Since this significance value is less than 0.05, it can be concluded that Community Active Participation has a significant effect on Village Fund Management. The negative sign on the t value indicates a negative relationship, which means that the higher the level of Community Active Participation, the lower the Village Fund Management, assuming other variables remain constant.

2. Public Service Quality Variable

   The Public Service Quality variable has a t value of 8.745 with a significance value of 0.000. Because this significance value is also much smaller than 0.05, this indicates that Public Service Quality has a significant effect on Village Fund Management. The positive sign on the t-value indicates a positive relationship, meaning that the higher the Public Service Quality, the higher the Village Fund Management, assuming other variables remain constant.

Based on this t-test, both independent variables (Active Community Participation and Quality of Public Services) have a significant effect on the dependent variable (Village Fund Management). However, Active Community Participation has a negative effect, while Quality of Public Services has a positive and stronger effect.

Table 12. T-Test

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	1.466	.890		1.646	.103
Active Community Participation	-.221	.065	-.310	-3.383	.001
Quality of Public Services	.491	.056	.802	8,745	.000

a. Dependent Variable: Village Fund Management

Source: Primary data processed, 2024

4 Conclusion

Based on an analysis of the impact of Active Community Participation and the Quality of Public Services on Village Fund Management in the Percut Sei Tuan Subdistrict, several conclusions can be drawn. Firstly, Active Community Participation significantly negatively affects Village Fund Management, with a t-value of -3.383 and a significance level of 0.001. This suggests that as community participation increases, the management of village funds tends to decline. In contrast, the Quality of Public Services has a significant positive effect on Village Fund Management, evidenced by a t-value of 8.745 and a significance level of 0.000. This indicates that an improvement in the quality of public services leads to better management of village funds.

Moreover, when both variables are considered together, they significantly impact Village Fund Management. This is supported by an F value of 41.750 and a significance level of 0.000, demonstrating that the regression model used can adequately explain the overall variation in village fund management. Finally, the coefficient of determination (R^2) value of 0.429 shows that 42.9% of the variation in Village Fund Management can be attributed to Active Community Participation and the Quality of Public Services, while the remaining 57.1% is influenced by other factors not included in this study.

Acknowledgment.

The author would like to express sincere gratitude to the State University of Medan, particularly the Accounting Study Program at the Faculty of Economics, for providing academic support and research facilities that made this study possible. Special thanks are also extended to the supervising lecturers who consistently offered guidance, direction, and valuable insights throughout every stage of this research. Deep appreciation is expressed to the village officials and members of the Village Assembly (BPD) in Percut Sei Tuan District, who kindly agreed to participate as respondents. Their active involvement and willingness to provide data and field information were instrumental in obtaining an accurate picture of community participation, the quality of public services, and the management of village funds.

The author also thanks fellow students and friends for their moral support, academic discussions, and motivation throughout the research process. Last but not least, the author extends heartfelt gratitude to family members for their prayers, love, and unwavering support, which enabled the completion of this research. Finally, the author acknowledges all parties who contributed, both directly and indirectly, to the successful completion of this research, which aims to benefit the development of knowledge and best practices in village financial management.

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