Journal of Social Research

P-ISSN: 2827-9832
E-ISSN: 2828-335x
Vol. 4, No. 10, Oktober 2025
http://ijsr.internationaljournallabs.com/index.php/ijsr

The Effect of Leadership Style, Communication, Discipline, and Public Service on Community Participation in Paying Waste Retribution at The Environmental Agency

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ABSTRACT

The waste levy is part of the original regional income. For the community to pay the waste levy, it is necessary to have the influence of leaders with an effective leadership style, good communication, discipline, and public service that is directly felt by the community. This study aims to determine the influence of leadership style on community participation in paying the waste levy. Data analysis was conducted using a multiple linear regression model with a quantitative approach and a descriptive type of research, employing SPSS version 22.0 with a sample of 224 respondents. The results of the study showed that each independent variable (X) partially affected the dependent variable (Y) and that, simultaneously, the independent variable (X) influenced the dependent variable (Y). The conclusions of this study are: (1) there is an influence of leadership style on community participation in paying the waste levy; (2) there is an influence of communication on community participation in paying the waste levy; (3) there is an influence of work discipline on community participation in paying the waste levy; (4) there is an influence of public service on community participation in paying the waste levy; and (5) the independent variables simultaneously affect the dependent variable. The dependent variables (leadership style, communication, work discipline, and public service) can be explained by the independent variable (community participation) by 52%, while the remaining 48% are explained by other variables not examined in this study.

Keywords: Leadership Style, Communication, Discipline, Public Service, Community Participation

INTRODUCTION

The Regional Government of South Nias Regency revoked *Peraturan Daerah Kabupaten Nias Selatan* Number 05 of 2012 concerning *Retribusi Pelayanan Publik* (Public Service Levy), one of which was replaced by a levy on waste/cleaning services, later regulated by *Peraturan Daerah Kabupaten Nias Selatan* Number 5 of 2023 concerning Regional Taxes and Regional Levies. Article 66 states that the subject of the cleaning service levy is any person or entity that uses or benefits from cleaning services carried out by the regional government (Aini & Mubarak, 2022; Cliza, 2023). It is evident that the South Nias Regency Environmental Agency plays an important role in contributing to the increase of regional original income (*Pendapatan Asli Daerah*) through the public services it implements in accordance with its duties and functions in maintaining cleanliness (Hariani, 2021; Purba et al., 2024).

The Environmental Agency, as a technical organization acting in accordance with *Peraturan Bupati Nias Selatan* Number 01.5_47 of 2016, carries out the preparation and implementation of regional environmental policies and has the following functions: first, formulation of technical policies in the field of environment; second, providing support for the implementation of local government functions in environmental management; third, development and execution of cleanliness duties; and fourth, implementation of other tasks assigned by the Regional Head concerning cleanliness. From these functions, it can be said that when the Environmental Agency performs its public service duties effectively, the local government can maximize regional revenue targets through community-provided waste levies (Alhanaqtah et al., 2019; Mukhlis, 2025).

Cleanliness and waste management have become global issues, as waste represents a serious problem across regions (Ferronato & Torretta, 2019). Based on data from the Directorate General of Waste Management, B3 Waste, Ministry of Environment and Forestry, the total waste in Indonesia at the beginning of 2020 reached 67.8 million tons (Muhamad, 2022; Supriatna & Lenz, 2025). Households contributed the largest portion of waste at around 48%, followed by traditional markets at 24%, and street waste at 7% (Kaza et al., 2018). It is estimated that by 2050, the proportion of plastic waste will increase from around 15% to more than 35% of total generated waste (Borrelle et al., 2020; Pottinger et al., 2024).

The Environmental Agency is a neutral yet critical institution operating under Law Number 32 of 2009 concerning Environmental Protection and Management, Government Regulation Number 46 of 2016 regarding Strategic Environmental Assessment Implementation Procedures, and Government Regulation Number 22 of 2021 regarding Environmental Protection and Management Implementation. Local governments are required to conduct *Kajian Lingkungan Hidup Strategis* (KLHS) — Strategic Environmental Assessment — as part of the preparation of *RTRW* (Spatial Planning), *RPJP* (Long-Term Development Plan), and *RPJM* (Medium-Term Development Plan). In development implementation, local governments must pay close attention to environmental aspects, reaffirming the essential role of the Environmental Agency within the government system (Pagallo et al., 2022; Sheng et al., 2023). The government's commitment to environmental preservation must remain balanced to sustain life for all beings (Yadav & Singh, 2024).

The South Nias Regency Government should give special attention to waste management to create a comfortable and quality environment. A well-managed environment, supported by effective waste management, can increase regional income, as it encourages communities to pay waste/cleaning levies (Dewi et al., 2025). Therefore, public services conducted by the Environmental Agency of South Nias Regency significantly affect community participation in paying waste levies—or, conversely, low perceived service quality may discourage citizens from paying. However, based on data obtained during the study, revenue from waste/cleanliness levies under *Pendapatan Asli Daerah* for 2017–2022 did not meet the established targets. Moreover, at the time of the research, the South Nias Regency Environmental Agency was still guided by *Peraturan Daerah* Number 05 of 2012 concerning *Retribusi Pelayanan Publik*, meaning levy collection still referred to outdated regulations.

Additionally, only one officer is responsible for collecting the waste/cleanliness levy in a fairly vast area, further complicated by a manual payment system using printed levy cards. These cards are obtained from the revenue treasurer of the Environmental Agency and printed by the Revenue Division at the Regional Finance, Revenue, and Asset Management Agency (*BPKPAD*) of South Nias Regency. The printing is based on *Peraturan Daerah* Number 5 of 2012 concerning *Retribusi Pelayanan Publik*, later replaced by *Peraturan Daerah* Number 5 of 2023 concerning Regional Taxes and Levies, which was enacted on December 29, 2023. According to research findings, old levy tickets were still in use in early 2024 due to the absence of a formal *Keputusan Bupati* (Regent's Decree) establishing mandatory waste levy stipulations. Consequently, the Environmental Agency verbally determined waste levy obligations. On January 22, 2024, the Regent of South Nias issued *Peraturan Bupati Nias Selatan* Number 100.3.3.2/13/2024 concerning Procedures for Collecting Waste/Cleaning Service Levies.

Peraturan Daerah Kabupaten Nias Selatan Number 07 of 2011 concerning Waste Management has not been continuously socialized to the community, resulting in low participation in paying the waste/cleanliness levy. Mandatory data on waste/cleanliness levies were unavailable until the end of 2023; the existing data were administrative records rather than formal decrees by the Regional Head. *Keputusan Bupati Nias Selatan* Number 100.3.3.2/397/2024 concerning the Determination of Mandatory Levy for Waste/Cleanliness Services was issued on May 6, 2024. This situation created difficulties in calculating receivables related to regional levies, as noted by the audit findings of *BPK RI* at the South Nias Regency Environmental Service (Utari & Setyowati, 2024).

Furthermore, although the Environmental Agency had issued *Keputusan Kepala Dinas Lingkungan Hidup Kabupaten Nias Selatan* Number 660/136/DLH/2020 concerning Standard Operating Procedures (*SOP*) for Waste Levy Collection Services, it was not properly implemented by levy collectors and treasury officials in the field. The absence of *Standar Pelayanan Minimal* (SPM) exacerbated service inconsistencies. Public concern about maintaining cleanliness remains low, as evidenced by the daily accumulation of scattered waste, which is then collected by road sweepers and transported by a fleet averaging 6 tons per day to the *Tempat Pembuangan Akhir* (TPA) Soto'o (Hajimi et al., 2024). Poor waste disposal habits frequently lead to clogged trenches and flooding (Echendu, 2023).

The Environmental Agency also faces structural obstacles related to limited facilities and infrastructure, particularly regarding the availability of dump trucks (Sareen, 2025). Many vehicles are borrowed from the *Dinas PUPR* and are in poor condition, often breaking down and causing waste accumulation in several areas. Nevertheless, in the past two years, two new garbage trucks were procured—one in 2022 and another in 2023. Other factors discouraging community payment of waste levies include inadequate waste bins and irregular garbage collection schedules, sometimes delayed by two to three days, which leads to unpleasant odors and public dissatisfaction.

The South Nias Regency Environmental Agency employs 65 *Tenaga Harian Lepas* (THL – Freelance Daily Workers) who receive low wages. These include park workers (10), drainage workers (8), fleet workers (17), road sweepers (25), field supervisors (4), and one waste levy collector. However, many THL employees lack discipline and fail to adhere to work schedules. Discipline implies following regulatory and procedural order, and when properly implemented, it enhances the quality of public services (Adu, 2021). Based on this observation, the author focuses the study on the effect of leadership style, communication, discipline, and public service on community participation in paying waste retribution at the environmental agency.

While extensive research exists on tax compliance and user fee payments in developed countries, there is a notable lack of empirical studies examining the determinants of waste levy compliance within Indonesia's diverse regional contexts (Lestari et al., 2025). Prior Indonesian public administration research has separately analyzed leadership styles, organizational performance, communication effectiveness, and work discipline. However, no studies have systematically explored how these organizational factors collectively and individually influence community participation in paying environmental levies, particularly in the distinct institutional and cultural setting of a remote region like South Nias Regency (Syamsiyah et al., 2025).

This study aims to fill this research gap by examining the complex administrative and environmental conditions in South Nias, where limited resources and bureaucratic challenges hinder effective revenue collection. The research seeks to determine the individual and combined effects of leadership style, communication practices, work discipline, and public service quality on community participation in paying waste levies. By doing so, it offers new empirical evidence and practical strategies for local governments to optimize local revenue generation while advancing theoretical understanding of compliance behavior within decentralized and resource-constrained governance contexts.

METHOD

This research employed a quantitative methodology grounded in positivist philosophy to investigate the factors that influenced community participation in waste levy payments in South Nias Regency. Utilizing a multiple linear regression framework, the study was designed to measure both the individual (partial) and collective (simultaneous) influence of independent variables—namely leadership style, communication, work discipline, and public service quality—on the dependent variable of community participation. The population consisted of all 1,147 mandatory waste levy obligors in the region, with a sample of 224 respondents selected via a simple random sampling technique to ensure representation across government, private sector, and general community stakeholder groups.

Data collection was conducted using structured interviews, questionnaires, and documentation studies. The questionnaire instruments were developed from established theoretical frameworks and employed a five-point Likert scale to measure each variable. Key constructs included leadership style (10 items), communication effectiveness (10 items), work discipline (7 items), public service quality (6 items), and community participation (10 items). The use of multiple linear regression was justified by its ability to identify the most influential factors while testing key assumptions such as normality, linearity, and the absence of multicollinearity, all of which were confirmed in the analysis.

The data analysis process, performed using SPSS version 22.0, involved several sequential steps, including validity and reliability tests, classical assumption testing, and hypothesis testing through t-tests (partial influence), F-tests (simultaneous influence), and the calculation of the coefficient of determination (R^2). Throughout the research process, strict ethical standards were maintained, including obtaining informed consent, ensuring confidentiality and anonymity, securing official approvals, and guaranteeing voluntary participation for all respondents.

RESULTS AND DISCUSSION

Validity Test

Instrument validity testing was conducted through pilot trials with 10 respondents outside the primary research sample. Respondents completed open-ended questionnaires distributed via Google Forms, with random selection from the mandatory waste levy obligor population. Validity assessment utilized Pearson correlation analysis comparing individual item scores with total construct scores, with items deemed valid if correlation coefficients (r-calculated) exceeded the critical r-table value of 0.632 at significance level $\alpha = 0.05$ for $n = 10$.

Table 1. Validity Test Results

Variabel	Number of Items	Range r-calculated	R table	Information
Leadership Style	10	0,783 – 0,987	0,632	All items valid
Communication	10	0,831 – 0,987	0,632	All items valid
Work Discipline	7	0,834 – 0,931	0,632	All items valid
Public Service	6	0,946 – 0,994	0,632	All items valid
Community Participation	10	0,719 – 0,967	0,632	All items valid

Source : Research Results, 2024 (Data processed)

Table 1 demonstrates that all research instruments achieved validity thresholds, as r-calculated values for each variable Leadership Style, Communication, Work Discipline, Public Service, and Community Participation consistently exceeded the r-table threshold (0.632). Consequently, all 43 questionnaire items were retained for deployment in the primary research phase, ensuring measurement validity across all constructs.

Reliability Test

The reliability test was carried out to measure the consistency of the instrument's results with the One Shot method, which is a measurement once and then compared between question items. The instrument is declared reliable if the Cronbach Alpha value > 0.60. The results of the reliability test can be seen in the following table:

Table 2. Variable Instrument Reliability Test

Variable	Cronbach Alpha	Reliable Limits	Information
Leadership Style	0,981	0,60	Reliable
Communication	0,969	0,60	Reliable
Work Discipline	0,931	0,60	Reliable
Public Service	0,988	0,60	Reliable
Community Participation	0,978	0,60	Reliable

Source : Research Results, 2024 (Data processed)

Based on the output presented in Table 2, reliability coefficients for all variables substantially exceed the 0.60 threshold, ranging from 0.931 to 0.988. These values indicate excellent internal consistency, confirming that all instruments demonstrate high reliability and are suitable for consistent measurement in the research context.

Normality Test

Normality testing of the data was performed to find out if the regression model was normally distributed, which can be seen through the Kolmogorov-Smirnov test. The data is said to be normal if the value of Asymp. Sig (2-tailed) > 0.05, while if < 0.05 then the data is not normal. In this study, the normality test was carried out with the help of SPSS version 22 for Windows. The results of the normality test using the Kolmogorov-Smirnov test can be seen in the table below:

Table 3. Kolmogorov-Smirnov Test: First Hypothesis

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		224
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	6.04614500
Most Extreme Differences	Absolute	.063
	Positive	.063
	Negative	-.051
Test Statistic		.063
Asymp. Sig. (2-tailed)		.029[c]

Source: Research results, 2024 (data processed)

Based on the results of the Kolmogorov-Smirnov test, the Asymp value. The sig (2-tailed) of 0.29 is greater than 0.05, so it can be concluded that the residual data between the X1 variable (Leadership Style) and the Y variable (Community Participation) are normally distributed, making it feasible to analyze with a regression model.

Table 4. Kolmogorov-Smirnov Test: Second Hypothesis

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		224
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	7.50236698
Most Extreme Differences	Absolute	.065
	Positive	.065
	Negative	-.042
Test Statistic		.065
Asymp. Sig. (2-tailed)		.024[c]

Based on the results of the Kolmogorov-Smirnov test, the Asymp value. Sig (2-tailed) of 0.24 is greater than 0.05, so that the residual data of the X2 variable (Communication) with the Y variable (Community Participation) are normally distributed and are eligible to be analyzed using the regression model.

Table 5. Kolmogorov-Smirnov Test: Third Hypothesis

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		224
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	6.99303777
Most Extreme Differences	Absolute	.062
	Positive	.048
	Negative	-.062
Test Statistic		.062
Asymp. Sig. (2-tailed)		.035[c]

Source : Research Results, 2024 (data processed)

Based on the results of the Kolmogorov-Smirnov test, the Asymp value. The Sig (2-tailed) of 0.35 is greater than 0.05, so that the residual data of the X3 variable (Work Discipline) with the Y variable (Community Participation) are normally distributed and are eligible to be analyzed using the regression model.

Table 6. Kolmogorov-Smirnov Test: Fourth Hypothesis

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		224
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	7.34358658
Most Extreme Differences	Absolute	.058
	Positive	.058
	Negative	-.049
Test Statistic		.058
Asymp. Sig. (2-tailed)		.064[c]

Source : Research Results, 2024 (data processed)

The Kolmogorov-Smirnov test produces an Asymptotic Significance (2-tailed) value of 0.064, exceeding the 0.05 threshold. This result confirms that residual data for the X4 variable (Public Service) relationship with Y variable (Community Participation) are normally distributed and fully appropriate for regression analysis.

Table 7. Kolmogorov-Smirnov Test: Fifth Hypothesis

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		224
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	5.88012804
Most Extreme Differences	Absolute	.066
	Positive	.061
	Negative	-.066
Test Statistic		.066
Asymp. Sig. (2-tailed)		.019[c]

Source : Research Results, 2024 (data processed)

Based on the Kolmogorov-Smirnov test, the value of Asymp. The Sig (2-tailed) of 0.19 is greater than 0.05, so that all variables X are normally distributed to variable Y and are eligible for analysis with regression models.

Multicollinearity Test

The multicollinearity test aims to find out whether there is a correlation between independent variables, where a good regression model should be free from such correlation. Detection was carried out through VIF and Tolerance values, with the criterion that the model was declared not to contain multicollinearity if the VIF value was ≤ 10 and the correlation between the independent variables was ≤ 0.7

Table 8. Multicollinearity Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	T	Sig.	Tolerance	VIF
1	(Constant)	2.801	2.402		1.166	.245		
	Leadership Style	.580	.079	.538	7.336	.000	.409	2.444
	Communication	.045	.066	.040	.675	.500	.616	1.625
	Work Discipline	.130	.109	.085	1.188	.236	.431	2.319
	Public Service	.250	.105	.147	2.378	.018	.575	1.739

Source : Research Results, 2023 (Data processed)

Based on the results of the multicollinearity test, all independent variables had a VIF value below 10 (X1=2.444; X2=1,625; X3=2,319; X4=1.739) and tolerance values above 0.10 (X1=0.409; X2=0.616; X3=0.431; X4=0.575), so it can be concluded that the regression model does not experience multicollinearity problems.

Hypothesis Test

T test (Partial)

According to Suliyanto (2008), the t-test is used to test the partial influence of each independent variable on the dependent variable, with the criterion that if the tcount > ttable or the confidence level >95%, then H0 is rejected and Ha is accepted, while if the tcount is < ttable or the confidence level <95%, then H0 is accepted and Ha is rejected

Table 9. Recapitulation of t-Test Results (Partial)

Variabel	Stuttgart	Table	Itself.	R^2	Regression equations	Conclusion
Leadership Style	14,600	1,651	0,000	0,490	Y = 7.200 + 0.755X1	Significant effect
Communication	7,786	1,651	0,000	0,215	Y = 16.160 + 0.514X2	Significant effect
Work Discipline	10,163	1,651	0,000	0,318	Y = 12.600 + 0.859X3	Significant effect
Public Service	8,543	1,651	0,000	0,247	Y = 15.775 + 0.849X4	Significant effect

Source: Research Results, 2023 (Data processed)

Based on the table, the results of the t-test showed that the four independent variables, namely leadership style, communication, work discipline, and public service, each had a tcount value greater than ttable (1.651) with a significance value of 0.000 (<0.05). This means that all variables have a significant effect on community participation. The amount of contribution is shown by the R^2 value, namely leadership style (49%), communication (21.5%), work discipline (31.8%), and public service (24.7%), with the regression equation according to the table.

Simultaneous Test (F Test)

The F test or simultaneous test is used to test the extent to which the independent variables together can explain the bound variables, with the criterion that the model is declared to be appropriate (goodness of fit) if at the significance level of 5% ($\alpha = 0.05$) the Fcal value is significant (Suliyanto, 2008).

Table 10. Test F

ANOVA						
	Model	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	8308.780	4	2077.195	59.306	.000[b]
	Residual	7670.430	219	35.025		
	Total	15979.210	223			

Source : Research Results, 2024 (data processed)

From the table above, the Fcal value is 59.306 with a significance level of 0.000 while the Fcal is 2.25528 or 59.306>2.255 with a significance level of 0.000, so it can be concluded that the independent variables simultaneously affect the bound variables together.

Coefficient of Determination (R2)

Table 11. Coefficient of Determination

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.721[a]	.520	.511	5.918

Source : Research Results, 2024 (data processed)

Based on table 11, the value of the determination coefficient (R^2) of 0.520 shows that the variables of leadership style, communication, work discipline, and public service simultaneously had an effect of 52% on community participation in paying the waste levy, while the remaining 48% were influenced by other factors outside the study.

The Influence of Leadership Style on Community Participation in Paying Waste Levy

Based on the results of the analysis, it was found that leadership style has a significant influence on community participation in paying waste levies in South Nias Regency, with a contribution of 49%. These findings show that leadership style is the most dominant factor compared to other variables in increasing community participation. The hypothesis test showed that the tcal value (14,600) was greater than the ttable (1,651), so the first hypothesis was accepted. These findings are in line with the opinion of Harris et al. (2007:338) that leadership style is a type of relationship used by an individual to move others in achieving a common goal. In addition, the results of the study strengthen the theory of modern leadership styles that include transformational, transactional, cultural-based, charismatic, and visionary, where indicators such as motivation, exemplary, reward, supervision, ethics, cultural values, passion, commitment, broad insight, and planning skills have proven to be valid and reliable in influencing community participation.

Other findings in Syahrian (2019) and Saleh et al. (2018), stated that effective leadership, both transformational and transactional, has been proven to have a significant influence on organizational culture and public service performance in various regions. In addition, Załoga (2024) emphasizes that interpersonal skills, especially in the aspect of supervision, are an important element in effective leadership. Thus, it can be concluded that improving the quality of leadership style, especially in the aspects of motivation, appreciation, and supervision, is the key in encouraging community participation in paying waste levies.

The Effect of Communication on Community Participation in Paying Waste Levy

The results showed that communication had an effect on community participation in paying the waste levy with a t-test value of 7.786 and a determination coefficient (R^2) of 0.215 or 21.5%. This means that although the influence of communication is lower than other variables, it is still significant in encouraging community participation. This finding is in line with Hovland's view in Unong (2004) who states that communication is a systematic effort to form opinions and attitudes. Meanwhile, Rogers in Sule & Saeful (2005) emphasized communication as the process of conveying ideas that are able to change behavior. Furthermore, Hardiyansyah (2015) emphasized the importance of communication in public service because the inability to build good communication can result in poor service. This finding is also in line with Saputra (2020) who describes various forms of communication ranging from intrapersonal, interpersonal, group, public, to the masses, which are relevant in community participation.

The analysis of the intensity of communication was found to be less than optimal, shown by the lack of socialization from the Environment Agency regarding levy regulations, including Regional Regulation Number 5 of 2012 and Regional Regulation Number 7 of 2011 concerning Waste Management. This lack of socialization has an impact on low public understanding and participation, especially since the mandatory levy data until 2023 has not been officially determined. In addition, although there has been a Decree of the Head of the Environment Agency Number: 660/136/DLH/2020 concerning SOPs for collecting waste levies, its implementation in the field is still weak, and no Minimum Service Standards (SPM) have been implemented. This condition explains the low contribution of communication variables in influencing community participation

The Influence of Work Discipline on Community Participation in Paying Waste Levy

Based on the results of the study, work discipline was proven to have a significant effect on community participation in paying waste levies, with a t value of 10.163 (>1.651) and a determination coefficient (R^2) of 0.318 or 31.8%. This means that work discipline accounts for 31.8% of the influence on community participation, while the rest is influenced by other variables that are not studied. These findings reinforce the view of Rivai (2016) and Hartatik (2014) that work discipline is an important instrument for managers in forming awareness and compliance with rules and norms.

However, the study also found that indicators of accuracy, compliance, and severe sanctions are still low in influencing community participation. Freelance Daily Workers (THL) at the South Nias Regency Environment Agency are often undisciplined, such as not being present for work without information or being late, so that garbage transportation, road sweeping, drainage, and park arrangement services are disrupted. This condition is in accordance with the view of Edy Sutrisno in Suparman (2020) who emphasizes the importance of obedience to time, organizational rules, work behavior, and other regulations. Low discipline is also influenced by low THL wages which are not proportional to the burden and risk of work, so some workers seek additional income elsewhere. Therefore, in addition to the enforcement of multi-level sanctions, the research emphasizes the need to reward disciplined workers as well as the government's attention to improving the welfare of cleaners.

The Influence of Public Services on Community Participation in Paying Waste Levy

The results of the study showed that public services had a significant effect on public participation in paying the waste levy, with a calculated t-value of 8.543 > 1.651 and a determination coefficient (R^2) of 0.247 or 24.7%. The simple regression equation Y = 15.775 + 0.849X4 shows that every increase in public services by one unit will increase community participation by 0.849. This finding is in line with Law Number 25 of 2009 and the opinion of Suryantoro & Kusdyana (2020), which states that public services are the government's responsibility in meeting the needs of the community. Furthermore, the dimensions of public services that affect community participation include equality, continuity, and adaptive (Iwan Setiawan, 2017).

However, the study found that the SOP for levy collection has not been optimally implemented, and the Maximum Service Standards (SPM) are not yet available, making the quality of service difficult to measure and evaluate. In addition, service continuity is also still weak because waste transportation is only carried out once a week, causing people to be reluctant to pay the levy. Another factor that decreases participation is the absence of facilities such as garbage cans and the habit of residents throwing or burning their own garbage.

This condition is exacerbated by the absence of regional regulations referring to Law No. 32 of 2009 and Government Regulation No. 22 of 2021 concerning environmental protection and management. In line with Hardiyansyah's views in Suryanto & Kusdyana (2020), improving the quality of public services, evaluating public input, and improving regulations are needed so that public participation in paying levies can be increased.

Community Participation in Paying the Waste Levy

The results of the study showed that simultaneously leadership, communication, work discipline, and public service styles had a significant effect on community participation in paying the waste levy with a Fcal value of 59.306 > 2.255 and a significance of 0.000. A determination coefficient (R^2) of 0.520 indicates that 52% of community participation can be explained by these variables, while 48% is influenced by other factors. These findings reinforce the view of Burns (2004) that active participation of the community is important for service accountability, effectiveness, and sustainability of development. Isti (2017) findings emphasize the existence of four approaches to participation, namely contribution, instrumental, empowerment, and development. In this study, indicators of low community participation include volunteerism, obligation, motivation, and capacity building, which are influenced by limited public services, lack of socialization, lack of empowerment programs, and weak regulation and enforcement of sanctions.

In addition, delays in transporting waste are caused by low discipline of freelance daily labor, limited fleets, and low planning and budget management capabilities at the Environment Agency. This condition is in line with the view of Hardiyansyah (2015) who emphasized that weak communication and public services have implications for low service quality, and Sudarmanto (2009) who highlighted the importance of work discipline in supporting organizational effectiveness.

The study also found that the fragmented institutional structure, where the technical function is in the Environment Agency and the administrative function in the Regional Financial and Revenue Management Agency, leads to a lack of focus and evaluation on the

achievement of local original income. This problem emphasizes the need to improve regulations, increase the capacity of the apparatus, and engage the community more meaningfully so that participation in paying the waste levy can increase.

CONCLUSION

The study revealed that leadership, communication, work discipline, and public service styles significantly influenced public participation in paying waste levies, both individually and collectively, with leadership contributing the most (49%), followed by work discipline (31.8%), public service (24.7%), and communication (21.5%), while their combined effect reached 52%. These results indicate that enhancing community participation requires strengthening transformational and transactional leadership, improving communication and policy socialization, enforcing employee discipline, and ensuring equitable, high-quality public services. The South Nias Regency Government, particularly the Environment Office, is advised to promote community empowerment through participatory programs, adopt an electronic waste levy payment system, and maintain consistent service standards supported by supervision, rewards, and sanctions. Future research could explore comparative analyses across different regions or examine digital innovation and behavioral factors influencing compliance in waste levy payments.

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