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Optimization of Regional Original Revenue at the Regional Transportation Agency of North Sulawesi Province

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Abstract. This study aimed to examine the efforts to optimize Regional Original Revenue (PAD) through port service levies at the North Sulawesi Provincial Transportation Agency. Given North Sulawesi's strategic position as an archipelagic trade and logistics hub, port service levies represent a critical source of regional financing. Despite the potential, PAD from port levies has consistently underperformed relative to targets, reflecting structural, technical, and administrative constraints. Using a qualitative approach, data were collected through in-depth interviews, observation, and document analysis with key stakeholders, including agency officials, field officers, and port service users. The analysis focused on five indicators: levy collection effectiveness, administrative and operational efficiency, levy potential, constraints and challenges, and optimization strategies. Findings indicate that while administrative procedures are standardized and supported by digital applications, full digitalization has not been achieved, limiting operational efficiency. The potential for levy revenue remains underutilized due to incomplete data, weak inter-agency coordination, and regulatory gaps that restrict local authority. Structural issues such as overlapping authority, insufficient technical support, and limited human resource capacity further hinder optimization. Budget constraints emerged as the most critical determinant, restricting routine monitoring, data collection, and field supervision, particularly in remote and archipelagic areas. Strategies to enhance levy collection emphasize regulatory adaptation, managerial capacity building, and technological modernization through integrated digital systems. Strengthening inter-agency coordination, improving human resources, and implementing evidence-based governance are essential to closing the implementation gap. This study highlights that optimizing port service levies requires a multidimensional approach, integrating legal, fiscal, technological, institutional, and social factors to enhance regional fiscal autonomy and support sustainable development in North Sulawesi.

Keywords. Regional Original Revenue, Port Service Levies, Revenue Optimization, Digital Governance

A. Introduction

In North Sulawesi Province, the maritime transportation sector plays a strategic role, given the region's archipelagic characteristics and its advantageous geographic position as a trade and logistics route in eastern Indonesia [1]. Regional Original Revenue (PAD) serves as one of the main sources of regional financing in the implementation of regional autonomy. PAD reflects a region's ability to harness its local economic potential to independently finance

development and public services, thereby reducing dependence on transfers from the central government [2].

The Regional Transportation Agency of North Sulawesi Province is a Regional Government Organization established through the Governor of North Sulawesi Decree Number 65 of 2024. The Regional Transportation Agency of North Sulawesi Province has several sources of Regional Original Revenue (PAD), including Port Service Levies. The North Sulawesi Provincial Transportation Agency collects several types of levies regulated under Regional Regulations (Perda) and Governor Regulations (Pergub). These levies are divided into three main categories in accordance with the Regional Regulation of North Sulawesi Province Number 1 of 2024 concerning Regional Levies. The first is Public Service Levies, which include services provided by the regional government for public interest and can be utilized by the general public. The second is Business Service Levies, which are charges on services or the provision of goods/services provided by the regional government and can be utilized by individuals or business entities. The third is Specific Licensing Levies, which are charges imposed for the issuance of certain licenses granted by the regional government to individuals or business entities.

The data on PAD targets in Table 1 below represent the PAD targets before revision in the Revised Regional Budget (APBD-P), while the average PAD realization at the Regional Transportation Agency can be seen in Table 2. Based on the data in Table 2, it is found that the source of PAD from Port Service Levies has not yet been implemented optimally.

Table 1. Regional Original Revenue from Port Service Levies

Year	Target	Realization
2019	400.000.000,-	271.290.000,-
2020	1.040.000.000,-	314.620.000,-
2021	1.000.000.000,-	245.230.000,-
2022	1.050.000.000,-	422.487.500,-
2023	500.000.000,-	305.392.500,-
2024	500.000.000,-	225.980.000,-

Source: Processed by the researcher, 2025

Table 2. Regional Original Revenue from Land and Building Rentals and Parking Facility Services

Year	Target	Realization
2019	200.000.000,-	361.584.475,-
2020	200.000.000,-	127.788.000,-
2021	250.000.000,-	244.078.000,-
2022	300.000.000,-	335.443.000,-
2023	350.000.000,-	335.443.000,-
2024	350.000.000,-	397.129.000,-

Source: Processed by the researcher, 2025

Port service levies are official charges imposed on services, facilities, and/or the use of space related to port activities and the utilization of water areas, particularly within the 0–12 nautical mile zone under the authority of the provincial government. These levies serve as one of the sources of Regional Original Revenue (PAD) or non-tax state revenue (PNBP), depending on the managing authority and the type of port. The main objectives are to cover

service costs, regulate maritime spatial use, facilitate the utilization of port infrastructure, and provide compensation for the use of public water space [3].

In general, the objects of port service levies encompass a variety of services and facilities utilized in port activities, such as vessel berthing services, cargo loading and unloading (stevedoring/handling) services, passenger services, the use of private docks or access to company-owned wharves, special ports and terminals, anchorage fees, and the use of designated maritime areas.

Based on their functions and types, port service levies can be classified into several categories, namely:

(1) Operational service levies, which include charges for loading and unloading services, dock usage, berthing, and passenger handling; (2) Facility usage levies, such as fees for renting docks, terminals, and mooring areas; (3) Licensing and marine spatial utilization levies, imposed through instruments such as the Marine Space Utilization Permit (SIPR) or the Marine Space Suitability Certificate (KKPRL); (4) Marine tourism zone levies, which include charges for floating tourism activities and paid recreational services; and (5) Marine space compensation levies, which are applied to industrial and logistics activities utilizing marine areas.

In its implementation, there is a principle of authority delineation regulated through statutory provisions, particularly Law No. 23 of 2014, Government Regulation No. 21 of 2010, and Minister of Marine Affairs and Fisheries Regulation No. 28 of 2021. Based on these provisions, the authority to manage marine spatial areas within the 0–12 nautical mile zone is granted to the provincial government. Consequently, any utilization of marine space within this zone — including permits such as the Marine Space Utilization Permit (SIPR) and the Marine Space Suitability Certificate (KKPRL) — serves as a potential source of provincial Regional Original Revenue (PAD). Conversely, ports with national status or those managed by state-owned enterprises (SOEs) such as Pelindo fall under the jurisdiction of the central government and are subject to non-tax state revenue (PNBP). Meanwhile, local ports and small facilities managed by provincial or district/municipal governments constitute objects of regional levies.

The mechanism for collecting levies is carried out through several administrative stages, including the processing of marine space utilization permits (SIPR/KKPRL), the determination of tariffs based on regional regulations, the identification and mapping of marine space utilization objects, the implementation of an integrated digital payment system linked to the regional levy system, and monitoring through audits and field inspections.

For example, floating restaurants operating within the 0–12 nautical mile marine zone are required to obtain a Marine Space Suitability Certificate (KKPRL) and pay marine space utilization levies to the provincial government as part of Regional Original Revenue (PAD), in addition to business levies in accordance with local regional regulations. Similarly, companies such as PT Conch and PT Cargill, which operate logistics docks within the province's maritime area, are also obligated to pay levies for the utilization of marine space.

Furthermore, the significant investment made by PT Bhineka Mancawisata in the Likupang Special Economic Zone (SEZ) for Tourism has received strong support from the regional government. The construction of hotels and other tourism facilities is expected to increase both domestic and international tourist visits, which in turn will contribute to boosting PAD through the tourism sector. By utilizing marine space for hospitality-related tourism activities, PT Bhineka Mancawisata not only contributes to the growth of PAD but also supports the development of sustainable tourism in North Sulawesi. For tourism investment activities such as hotels or resorts located in coastal and marine areas, if the facilities occupy marine space

(for example, tourist piers or floating hotels), business operators are required to obtain a KKPRL permit and pay marine space utilization levies to the provincial government.

In practice, the licensing and levy mechanisms operate as follows: business entities must first obtain a Marine Space Suitability Certificate (KKPRL) from the Ministry of Marine Affairs and Fisheries (KKP), either for the 0–12 nautical mile zone or beyond, depending on the location of their activities. Once the business license is issued, the operator is required to pay marine space utilization levies to the provincial government if the activity takes place within the 0–12 nautical mile zone.

According to the provisions of Law No. 23 of 2014, regional feeder ports fall under the authority of the provincial government. However, since this authority has not yet been fully delegated by the Ministry of Transportation, the focus of provincial Regional Original Revenue (PAD) collection remains primarily on the utilization of marine areas by business operators.

However, the potential of port service levies has not yet been fully optimized. Several issues have been identified, including the low realization of revenue compared to the established targets, weak administrative and supervisory systems in levy collection, inadequate data collection and mapping of levy objects, and the lack of innovation in efficient and transparent service management. In addition, discrepancies between levy rates and market conditions, as well as fragmented regulations, also pose challenges to the optimization of this revenue source.

Overall, problems related to port service levies are complex and influenced by multiple factors—ranging from government policy and public awareness to external impacts such as the pandemic. By understanding and addressing these issues comprehensively, it is expected that Regional Original Revenue (PAD) from port service levies can be optimized to better support regional development. Considering the strategic role of PAD in promoting sustainable regional growth, efforts to optimize port service levies will not only enhance regional revenue but also improve public service delivery and governance efficiency in the maritime transportation sector.

Based on the above discussion, this study aims to: a) identify, analyze, and describe the efforts to increase levies as a source of Regional Original Revenue (PAD) at the Regional Transportation Agency of North Sulawesi Province; and b) examine the determinant factors influencing the efforts to enhance levies as a source of Regional Original Revenue at the Regional Transportation Agency of North Sulawesi Province.

B. Method

The method used in this study is a qualitative research method. In qualitative research, the researcher, with the assistance of others, serves as the main instrument for data collection. According to Sugiyono (2024), in qualitative research, the researcher himself or herself functions as the primary research instrument [4]. Therefore, the researcher as an instrument must be validated to determine the extent to which they are prepared to conduct the study and engage directly in fieldwork.

The research was conducted at the Regional Transportation Agency of North Sulawesi Province, with key informants consisting of agency officials, field officers, port service users, and other relevant stakeholders. This study focuses on efforts to increase Regional Original Revenue (PAD) through the intensification of port service levies as a source of PAD within the Regional Transportation Agency of North Sulawesi Province. The analysis employs the following indicators: effectiveness of levy collection, administrative and operational efficiency, levy potential, constraints and challenges, and optimization strategies.

Data collection techniques include observation, in-depth interviews, and document study. The data analysis technique in this study employs the approach developed by Miles,

Huberman, and Saldana (2014), which consists of four stages: data collection, data condensation, data display, and conclusion drawing/verifying [5]. Meanwhile, the data validity technique in this research applies the four criteria proposed by Moleong (2017), namely credibility, transferability, dependability, and confirmability [6].

C. Result and discussion

Efforts to Increase Levies as a Source of Regional Original Revenue

The following section presents the research findings and discussion on the efforts to increase Regional Original Revenue (PAD) through the intensification of port service levies as a source of PAD within the Regional Transportation Agency of North Sulawesi Province. The analysis is based on the following indicators: effectiveness of levy collection, administrative and operational efficiency, levy potential, constraints and challenges, and optimization strategies.

1. Effectiveness of Levy Collection

The effectiveness of levy collection is measured by the extent to which revenue targets can be realized in accordance with applicable regulations. The research findings indicate that the collection process has been carried out in accordance with established procedures, although the level of effectiveness remains low. This aligns with Mahmudi's (2019) view that effectiveness in the context of public finance refers to achieving organizational goals optimally while minimizing deviations between targets and actual outcomes [7]. However, several inhibiting factors still exist, such as limited public outreach and a lack of technology-based innovation in the collection process. Therefore, effectiveness can still be improved through the strengthening of technical regulations and the adoption of persuasive approaches toward levy payers.

Table 3. Research Findings on the Indicator of Levy Collection Effectiveness

Focus	Indicator	Findings
Efforts to Increase Levies as a Source of Regional Original Revenue	Levy Collection Effectiveness	<p>The implementation of levy collection is still ineffective because the realization of port service levy revenue has not met the targeted amount.</p> <p>In general, the method used has maintained uniform procedures across all ports — covering the calculation of levy rates, contract signing, and the issuance of the Regional Levy Billing Letter (STRD). However, informants assessed that this method is still inadequate to fully capture the existing levy potential.</p> <p>User compliance remains low. Currently, there are no sanctions imposed on those who fail to fulfill their levy obligations.</p> <p>The data collection and field monitoring systems have not been fully optimized, as all informants emphasized the importance of regular evaluations to improve the effectiveness of levy collection.</p> <p>There are limitations in operational facilities and infrastructure, particularly in the process of delivering billing letters and conducting field monitoring activities. This condition causes delays in the collection process and potentially reduces the effectiveness of levy implementation.</p>

Source: Processed by the researcher, 2025

In the interviews, informants expressed their views regarding the effectiveness of port service levy collection. When asked about how effective the current levy collection implementation is in increasing Regional Original Revenue (PAD), the informants assessed that it remains less effective. This assessment is based on the indicator of port service levy realization, which, in recent years, has not met the established targets. According to the informants, this evaluation is also supported by the 2024 Fiscal Year Budget Realization Report (LRA) of the Department of Transportation. The discrepancy between realization and target indicates an implementation gap stemming from weaknesses in the registry of levy payers, enforcement mechanisms, and monitoring capacity (IMF, 2023) [8]. Operationally, the collection method—which includes calculation of the levy amount, contract signing, and payment—although standardized, has proven insufficient since not all companies are registered in the system, resulting in under-collection and potential leakage (Okunogbe & Santoro., 2023) [9].

Furthermore, when asked about the level of compliance among port service users in paying levies, the informants explained that compliance remains low. They noted that currently, there are no sanctions imposed on business operators who fail to fulfill their levy obligations. As a result, violations in levy payments occur quite frequently. Fiscal compliance literature emphasizes that a combination of education and enforcement (through credible audits and sanctions) significantly improves compliance; without these two elements, the collection instrument loses its effectiveness (Lancee et al., 2023) [10]. Field findings also indicate that the evaluation function—although implemented (most recently in mid-2025)—has so far only resulted in ad-hoc collection efforts. For evaluation to be truly effective, its outcomes must be linked to systematic enforcement mechanisms and procedural improvements (Dwiyanto, 2021) [11].

Regarding the levy collection method, the informant stated that the current approach is still inadequate in capturing the full potential of port levy revenues. They explained that the collection mechanism begins with calculating the amount of levy payable, followed by the signing of a contract, and then the payment process. This method is applied uniformly to all companies. However, the main challenge lies in the fact that not all companies are properly recorded, due to limited budget allocations for field surveys and measurement activities required for data collection.

Regarding evaluation, the informant emphasized that periodic evaluations play an important role in improving the effectiveness of levy collection. Through these evaluations, problems can be identified and appropriate solutions can be determined to address them. The informant added that the most recent evaluation was conducted in mid-2025. As a result of this evaluation, the North Sulawesi Transportation Agency carried out collection actions targeting levy obligors who had not yet fulfilled their payment obligations.

At the final part, when asked about the indicators of successful levy collection, the informant explained that the indicator used is the percentage of realization of the levy revenue target. A higher realization percentage indicates that the local government is able to collect levies in accordance with the established targets. This indicator, according to the informant, has already been applied within the current monitoring system. The measurement is carried out by comparing the amount of levies successfully collected or realized with the total amount of levies targeted for collection.

Theoretically, the recommended improvements are grounded in the principles of New Public Management (NPM)—namely, a results-oriented approach, the use of Key Performance Indicators (KPIs) for performance monitoring, and the adoption of managerial practices that

enhance efficiency—as well as in the digital governance paradigm, which emphasizes the use of technology to promote transparency and accountability (Hood, 2001) [12]. By integrating a digital registry system, KPI-based evaluation mechanisms, and a combined approach of education and enforcement to improve compliance, the North Sulawesi Provincial Transportation Office holds a substantive opportunity to close the implementation gap, increase revenue realization, and strengthen the reliability of transportation-sector levies as a key contributor to local revenue (PAD).

2. Efficiency of Administration and Operations

Administrative and operational efficiency in levy collection is closely related to the extent to which the use of resources—human, time, and financial—can produce optimal performance. The research findings indicate that the administrative mechanism already possesses a clear and consistent workflow. The uniformity of procedures across various levy units aligns with Weber’s (1978) rational-legal principle, which emphasizes the importance of standardized rules and procedural certainty within bureaucracy [13].

Table 4. Research Findings on the Indicator of Administrative and Operational Efficiency

Focus	Indicator	Findings
Efforts to Increase Levies as a Source of Regional Original Revenue	Administrative and Operational Efficiency	<p>The standardized administrative process (letter → measurement → determination → issuance of the Regional Retribution Billing Letter [STRD] → payment) is carried out up to date without delays. The Standard Operating Procedures (SOP) are uniform across all ports, and although the number of human resources is limited, their performance remains consistent.</p> <p>The application supports recording and reporting processes and is considered effective; however, digital coverage is not yet comprehensive—measurement activities and several functions are still performed manually, and field infrastructure remains limited.</p> <p>The lack of facilities, infrastructure, and travel budgets hinders monitoring and measurement activities; officers often have to borrow equipment from other divisions or combine visits to reduce operational costs.</p> <p>The perceived cost-benefit ratio is favorable (approximately 1:50), but it has not been officially documented; there remains room for greater efficiency through further digitalization and the use of electronic communication.</p> <p>Officers are generally prepared and understand how to use the application; however, they require further training and additional logistical support.</p>

Source: Processed by the researcher, 2025

The research findings indicate that the administrative process of collecting port service retributions in the study area has been conducted relatively efficiently, although several technical challenges and resource limitations remain. All three informants described that the administrative procedures have been carried out in an up-to-date manner, in line with the retribution collection schedule, without significant delays in either recording or reporting. The workflow has been standardized through formal stages, including the issuance of letters to taxpayers, measurement of sea area utilization, determination of retribution value, issuance of

the Regional Retribution Receipt Letter (STRD), and payment by the obligated parties. This standardization applies uniformly across all ports, both large and small, with a relatively limited number of personnel involved—ranging from three to six staff members per location.

This phenomenon aligns with the principles of New Public Management (NPM), which emphasize efficiency, rationalization, and performance-based management in the public sector (Pollitt & Bouckaert, 2017) [14]. Through the implementation of standardized Standard Operating Procedures (SOPs) and an information system-based reporting mechanism, the Department of Transportation has demonstrated efficient and accountable administrative practices. The absence of reporting delays indicates that the institution's internal governance capacity is relatively strong. These findings suggest the successful application of the principles of administrative rationality, as described by Osborne (2010), wherein modern public organizations must combine bureaucratic efficiency with managerial flexibility to achieve optimal outcomes [15].

All three informants emphasized the use of digital administrative systems such as SIPD, SIPANDA, and the OSS Application, which have helped accelerate data recording processes and improve transparency. However, the digitalization process remains partial. Several core activities—such as field measurements and verification of retribution objects—are still carried out manually due to limitations in network connectivity and supporting equipment. This indicates that digital transformation in port service administration has not yet been fully integrated.

This finding aligns with the concept of Digital-Era Governance (DEG) (Dunleavy et al., 2006), which emphasizes the importance of integrating information systems to enhance transparency, accountability, and efficiency in public service delivery [16]. According to Bannister and Connolly (2020), the success of public sector digitalization largely depends on the readiness of infrastructure and the digital competence of civil servants [17]. In the context of this study, the SIPD and SIPANDA systems have established a solid foundation for the digitalization of retribution administration; however, further improvement is still needed in terms of field connectivity, digital equipment, and interoperability among applications.

All informants agreed that the main obstacles in the implementation of retribution collection are technical in nature, primarily involving limited budgets for official travel, facilities, and field equipment. Officers often have to use vehicles or devices belonging to other departments to ensure that measurement and collection activities can continue. Efficiency efforts are made by combining visits to several taxpayers in a single trip; however, this approach remains adaptive rather than systemic.

This situation reflects what is described in Resource Dependence Theory (RDT) (Pfeffer & Salancik, 2003), which posits that the effectiveness of public organizations is highly influenced by their ability to access and manage external resources [18]. In this context, budgetary and infrastructural limitations indicate a persistent resource constraint within the implementing agency. These constraints have a direct impact on the organization's capacity for monitoring and the accuracy of retribution object data. Consistent with Rainey's (2012) view, public organizations are often trapped in dependence on fiscal resources, which in turn hinders administrative innovation [19].

Another notable finding is the awareness among officials of the importance of the operational cost-to-revenue ratio as an indicator of efficiency. Although it has not been formally calculated in institutional documents, informants stated that the operational cost-to-retribution ratio is approximately 1:50. This indicates that the cost of collection is relatively small compared to the revenue generated—an encouraging sign of the institution's economic

efficiency. However, since there is no official standard for calculating this ratio, it cannot yet serve as a formal basis for policy evaluation.

From the perspective of performance budgeting and public financial management (Robinson, 2022), measuring performance using a cost–benefit ratio is an important tool for assessing the effectiveness of public resource allocation [20]. Therefore, the operational cost ratio should be standardized through an official calculation format integrated with the SIPD reporting system. This standardization not only strengthens fiscal transparency but also enables data-driven evaluation in the planning and budgeting process.

From a human resources perspective, the research findings indicate that field officers possess adequate technical skills to operate digital administrative systems and carry out retribution collection procedures. However, some informants noted that further training is necessary to strengthen technical competencies, particularly in using new applications and managing digital data. The readiness of human resources is a key factor in ensuring the sustainability of digital innovations and administrative efficiency.

This analysis can be linked to Capacity Building theory (Grindle, 2006), which emphasizes that institutional capacity development must encompass three main aspects: (1) individual capacity (technical competencies of personnel), (2) institutional capacity (procedures and organizational structure), and (3) systemic capacity (regulatory support and resources) [21]. In the context of the Department of Transportation, these three aspects are interrelated: personnel possess basic capabilities but still require budgetary support, facilities, and continuous training policies to ensure that digital innovations and operational efficiency can continue to develop.

From the overall findings, it can be concluded that the administrative system for port service retribution has demonstrated good performance in terms of efficiency, accountability, and procedural compliance. However, the main challenges remain the limited supporting resources and the suboptimal integration of digital systems. Therefore, future policy strengthening should focus on two main areas: (1) digital transformation based on system integration and interoperability, and (2) enhancing human resource capacity and budget allocation for monitoring activities.

Digital transformation can be achieved by developing a web-based information system that connects modules for administration, field measurement, billing, and financial reporting in real time. This model aligns with the concept of smart governance (Meijer & Bolívar, 2016), which promotes transparency, efficiency, and public participation through the use of information technology [22]. In the context of retribution services, full digitalization would enhance time efficiency, reduce operational costs, and minimize the risk of administrative errors.

In addition, enhancing human resource capacity through technical training and strengthening digital competencies is a key factor to ensure the sustainability of system innovations. As noted by Kim et al. (2021), the success of digital transformation in the public sector is determined not only by technology but also by the readiness of personnel to adopt and maintain the system [23].

Academically, these findings reinforce the principles of New Public Management and Digital-Era Governance in the context of local public services, where efficiency and accountability can be achieved through a combination of standardized procedures and the use of information technology. However, from the perspectives of Resource Dependence and Capacity Building, this study also highlights that the success of public policy implementation heavily depends on the availability of financial and technical resources.

3. Retribution Potential

Retribution potential is a crucial aspect in increasing Regional Original Revenue (PAD), as accurate mapping of retribution objects enables local governments to estimate revenue opportunities more realistically. The research findings indicate that the actual retribution potential is substantial, yet it has not been fully realized due to limitations in data, human resources, and the use of technology in information management.

Table 5. Research Findings on the Retribution Potential Indicator

Focus	Indicator	Findings
Efforts to Increase Levies as a Source of Regional Original Revenue	Retribution Potential	The increase in port service user activity is directly proportional to the growth of regional retribution potential.
		The existence of several types of port services whose retributions cannot yet be collected due to the absence of a legal basis.
		Data on the flow of goods and passengers serves as an important basis for calculating retribution potential.
		Most retribution administrative activities are still carried out manually.
		The importance of inter-agency collaboration and support from the central government in optimizing retribution potential.

Source: Processed by the researcher, 2025

Research findings related to the enhancement of retribution potential and the dynamics of port economic activity indicate that increased activity by port service users is directly proportional to the rise in regional retribution potential. This aligns with Halim (2013), who explains that local retribution potential reflects the fiscal capacity of a region, which is derived from sectoral economic dynamics and the level of public activity in a specific area [24]. In the port context, the higher the intensity of goods and passenger traffic, the greater the opportunity for retribution revenue.

However, as explained by Bahl & Bird (2015), fiscal potential does not automatically translate into increased revenue, as it depends on the local government's capacity to harness and utilize that potential through effective governance and clear policy support [25]. Therefore, enhancing potential must be accompanied by institutional capacity and management innovation to ensure it does not remain merely latent potential.

From the New Public Management (NPM) perspective, it is important for the government to be result-oriented by maximizing available resources to enhance fiscal performance. One way to achieve this is by strengthening data-based potential mapping systems, as without valid data, retribution policies risk being misguided or ineffective.

The interview results revealed that several types of port services cannot yet be charged for retribution due to the absence of a legal basis. This indicates a regulatory asymmetry between the central and local governments. A classic issue in fiscal decentralization in Indonesia is the limited fiscal authority of local governments to manage the revenue potential

they actually possess. In this case, the fact that the management of 11 ports has not been transferred to local governments serves as a concrete example of weak devolution of authority.

In addition, Law No. 1 of 2022 on Financial Relations between the Central Government and Regional Governments should serve as the regulatory foundation for strengthening the role of local authorities. However, in practice, there are still overlapping regulations between central government rules (e.g., from the Ministry of Transportation) and local policies. This situation underscores that the effectiveness of local retribution heavily depends on the synchronization of regulations across government levels.

Retribution potential is also closely linked to community participation. Digitalization in tax and retribution administration not only enhances efficiency but also raises awareness among taxpayers/retribution obligors through easier access and greater transparency. Thus, the utilization of digital systems can improve public compliance while simultaneously expanding the scope of revenue collection.

From a fiscal efficiency perspective, the management of potential revenue must always take into account the principle of *value for money*. This means that strategies to optimize potential levies should be implemented by considering the ratio of administrative costs to generated revenue, in order to avoid overburdening operational budgets. Furthermore, the theory of fiscal decentralization emphasizes that regional authority in exploring sources of Regional Original Revenue is a crucial instrument for enhancing fiscal autonomy. Given North Sulawesi's characteristics as an archipelagic region, the maritime transport sector, terminals, and port-related services represent strategic loci for increasing Regional Original Revenue. If these potentials are not managed optimally, a high dependency on central government transfers will occur, which runs counter to the spirit of fiscal decentralization.

Field constraints, such as weak data collection of levy objects, limited oversight, and low utilization of digitalization, indicate the existence of an implementation gap between policy and practice. This aligns with the findings of Dwiyanto (2021), who stated that one of the main obstacles to optimizing Regional Original Revenue in Indonesia is the weak integration of information systems and the lack of bureaucratic innovation.

The informants agreed that data on the flow of goods and passengers serves as an essential basis for calculating potential levies. This supports the concept of data-driven governance in modern public administration. The implementation of data-based governance can enhance the accuracy of fiscal planning, strengthen transparency, and reduce the potential for leakage in regional revenue collection.

However, within the context of this study, the utilization of data remains limited due to the absence of an integrated digital system across agencies. This indicates that, although data is available, digital transformation has not yet been optimized. As noted by Dwiyanto (2021), the digitalization of public services is not merely about the use of technology, but also about how data is leveraged to support decision-making and enhance bureaucratic performance.

The strategy of developing levy potential through the digitalization of collection systems aligns with the concept of digital governance, which emphasizes the use of information technology to enhance efficiency, transparency, and public participation. With a digital-based levy information system, the risk of revenue leakage can be minimized, data on levy objects becomes more accurate, and public services related to levy payments become more easily accessible.

The findings indicate that the majority of levy administration activities are still conducted manually. Digitalization in the public sector is key to establishing efficient and accountable governance, particularly in sectors involving financial transactions such as levies.

In the absence of digital systems, the risks of delayed reporting, data duplication, and revenue leakage increase significantly.

In this context, the implementation of an e-retribution system, as developed in several regions, can serve as a strategic solution. Such a system enables the integration of data on the flow of goods, electronic payment systems, and real-time regional financial reporting. Thus, digital transformation is not merely a technical necessity but a regional fiscal policy strategy oriented toward efficiency and transparency.

Overall, the significant potential of levies has not been fully realized due to limitations in data, resources, and technology. However, by integrating the New Public Management (NPM) approach (results orientation), bureaucratic effectiveness (procedural certainty), and digital governance (the use of technology for fiscal management), local governments have a substantial opportunity to enhance fiscal capacity, expand the levy base, and strengthen regional autonomy in development financing.

All informants emphasized the importance of inter-agency collaboration and support from the central government in optimizing levy potential. The effectiveness of public policy implementation at the regional level heavily depends on the capacity for coordination among organizations, not merely on internal technical capabilities. In the context of port management, cooperation between the Transportation Department, the Regional Financial Management Agency, and the Ministry of Transportation is a prerequisite for successful levy collection.

Furthermore, training and capacity building for regional officials need to be strengthened to ensure personnel possess adequate technical and administrative skills. Therefore, cross-agency collaboration and human resource capacity enhancement represent two critical dimensions in strengthening regional levy governance. In this way, the potential of the transportation sector levies in North Sulawesi not only represents a fiscal opportunity but also serves as a benchmark for measuring local governments' ability to implement efficiency, accountability, and innovation principles in public financial management.

4. Constraints and Challenges

Constraints and challenges in regional levy collection represent significant factors in determining the effectiveness of local fiscal policies.

Table 6. Research Findings on Indicators of Constraints and Challenges

Focus	Indicator	Findings
Efforts to Increase Levies as a Source of Regional Original Revenue	Constraints and Challenges	Limited budgets and infrastructure hinder field monitoring activities.
		Uneven digitalization services and access to information technology, which impact administrative and reporting processes.
		Insufficient socialization and education for levy payers, resulting in a low level of payment compliance.
		The need for support and intervention from the central government, as well as technical training for officers, to ensure more effective levy implementation.

Source: Processed by the researcher, 2025

The interview results indicate that the primary obstacles lie in limited infrastructure, insufficient human resources, and the continued reliance on manual systems, which lead to inefficiencies. These constraints are largely technical, such as the lack of operational facilities

for officers, but they are also structural, including suboptimal supporting regulations and weak integration of information systems.

From the perspective of bureaucratic effectiveness theory, the obstacles that arise are often related to institutional capacity in carrying out administrative functions. An ideal bureaucracy should have clear rules, a well-defined hierarchy of authority, and an efficient administrative system. However, bureaucracies in developing countries, including Indonesia, still face challenges in terms of limited personnel capacity, organizational culture, and resistance to change.

Furthermore, obstacles in regional levy collection can also be understood through the perspective of New Public Management (NPM), where performance orientation is often disrupted when inputs such as human resources and technology are inadequate. Public service performance will be difficult to optimize if supporting tools, whether in the form of infrastructure or management systems, remain limited. Countries with low levels of digitalization tend to face challenges in fiscal transparency and controlling revenue leakage.

From the digital governance perspective, delays in adopting digital systems represent a major constraint. The transition to digital governance requires not only technological infrastructure but also organizational readiness and the competence of personnel. In the context of levy collection, barriers such as limited access to technology, uneven digitalization across regions, and low digital literacy among officials hinder efficiency.

Constraints are also closely related to the operational cost-to-revenue ratio, which remains high in certain locations. The calculation of cost-benefit in every fiscal mechanism is crucial, as excessive operational costs reduce the effectiveness of policy. These obstacles highlight the need for regular evaluation of the distribution of collection costs relative to the revenue generated.

Thus, the constraints and challenges in levy collection can be viewed as the accumulation of technical issues (infrastructure and operations), structural issues (regulations and institutions), and cultural issues (organizational culture and resistance to digitalization). Addressing these challenges requires a comprehensive strategy that combines bureaucratic reform, capacity building for personnel, and accelerated adoption of digital technologies.

5. Optimization Strategy

The strategy for optimizing levy collection is directed through three main approaches: regulatory, managerial, and technological. First, the regulatory approach involves formulating policies that are adaptive and responsive to local economic dynamics. Second, the managerial approach emphasizes strengthening personnel capacity, streamlining procedures, and enhancing inter-agency coordination, in line with the principles of New Public Management, which emphasize *value for money*. Third, the technological approach highlights the adoption of digital, web-based systems as instruments for fiscal transparency, efficiency, and accountability.

By integrating these three approaches, the optimization strategy can enhance the effectiveness and efficiency of levy collection, expand the revenue base, and reduce potential leakage. Ultimately, this will strengthen regional fiscal capacity to support sustainable development. This statement indicates that although digitalization is considered promising, the sustainability of the system remains constrained by budgetary limitations.

Regarding concrete steps that the Transportation Department can take to increase user awareness and compliance, informants highlighted the importance of socialization efforts. This suggests that initiatives to improve compliance still require external support to be more

effective. Furthermore, informants also expressed their expectations and suggestions regarding regulations, emphasizing the need for policies that are more contextual and adaptive to real conditions in the field. At the end of the interviews, when asked about the main targets of levy optimization, informants stressed the importance of contributions to Regional Original Revenue. From these interviews, it is evident that digitalization strategies, appropriate regulatory support, and strengthened socialization efforts are key elements in optimizing port-related levy collection.

Table 7. Research Findings on Optimization Strategy Indicators

Focus	Indicator	Findings
Efforts to Increase Levies as a Source of Regional Original Revenue	Optimization Strategy	The absence of a comprehensive mapping of levy potential.
		The limited capacity of levy management personnel is caused by ineffective inter-agency coordination.
		The limited authority of the Transportation Department is due to the absence of a legal basis for levies on certain port services and a lack of innovation in levy policies.

Source: Processed by the researcher, 2025

The interview results indicate that several types of services, such as land use and passenger terminals, lack clear regulations, preventing the collection of levies. This situation reflects the weakness of the regional policy framework in delineating fiscal authority within the port sector. Regulation is a crucial instrument for ensuring legal certainty and fiscal equity. Without a strong legal basis, local governments cannot fully realize the potential of levy revenue, as every collection must be grounded in explicit legal authority. Regional regulations must be able to adapt to the dynamics of local economic activity to ensure that the levy system remains relevant and responsive. The absence of such regulations results in lost levy opportunities, as economically potential activities cannot be legally charged. This represents a major obstacle to optimizing regional levy collection.

It was found that the Transportation Department has not been granted full authority in mapping and managing levy potential. As a result, strategic planning is difficult to implement because most authority remains under the control of central port authorities or vertical agencies. According to Dwiyanto (2021), regional autonomy that is not accompanied by adequate delegation of authority leads to the “disempowerment” of local bureaucracy. This affects the initiative and creativity in exploring revenue potential. The success of levy optimization depends on the extent to which local governments possess the authority and capacity to manage fiscal resources independently. Restrictions on authority represent a structural barrier in levy management, as technical agencies cannot optimally perform functions such as analysis, mapping, or revenue monitoring.

Mapping of levy potential has not been conducted due to limitations in data and authority, resulting in unmeasured revenue potential. Although data on the flow of goods and passengers is available, it has not been fully utilized for revenue potential analysis and planning. Data and information form the primary foundation for evidence-based governance. Data limitations cause decision-making processes to be normative rather than evidence-based. The digitalization of levy systems is crucial to support the collection and analysis of more accurate and real-time data. Weak data management creates a gap between actual economic potential and the realization of regional revenue, making optimization strategies misaligned with their objectives.

Human resources managing levy collection remain limited in both quantity and technical competence. This directly affects the quality of collection implementation, data accuracy, and service effectiveness. The success of regional bureaucratic reform depends on the capacity of personnel to understand both the technical and administrative aspects of levy collection. Capacity building is crucial for strengthening local financial performance, particularly in high-potential sectors such as port management. Incompetent personnel result in bureaucratic inefficiencies and slow the adaptation process to policy innovations and digital systems.

The research findings also indicate overlapping authority and weak communication among the departments, port authorities, and relevant agencies. Inter-agency collaboration is key in managing complex public governance, particularly in the transportation and port sectors. Policy misalignment among agencies leads to duplicated regulations and confusion in implementation. Denhardt & Denhardt (2015) note that public collaboration requires clear roles, effective communication, and integrated information systems [26]. Weak cross-agency coordination creates administrative barriers that slow the optimization of levy revenue and reduce public trust in local government performance.

Tariff regulations and collection systems remain conventional and are not adaptive to changes in port activities. Furthermore, there is no routine system for evaluating the effectiveness of levy collection. Modernizing the collection system through a digital approach (smart retribution system) can improve efficiency, accuracy, and transparency of regional revenue. Performance indicator-based evaluation is also crucial to ensure the sustainable effectiveness of local fiscal policies. The absence of an evaluation system and policy updates results in missed opportunities for local governments to adjust levy mechanisms in response to dynamic economic conditions and port activities.

Determinant Factors

Based on the interview results, it was found that the determinant factors for optimizing levy collection at the Transportation Department of North Sulawesi Province are multidimensional, encompassing legal, institutional, fiscal, technological, and social aspects. These five factors interact with one another and influence the region's capacity to enhance Regional Original Revenue. However, the most critical factor is the budget. Budget constraints emerge as a key determinant affecting field monitoring and data collection. Informants noted that limited travel allowances and transportation facilities prevent routine supervision of levy collection sites.

Insufficient budgets hinder the implementation of PAD optimization policies. Operational funding limitations restrict the ability of personnel to conduct routine monitoring, data collection, and evaluation. This results in low data validity for levy objects and weak field control. According to Halim (2013), local government fiscal performance heavily depends on the capacity for efficient budget allocation to support monitoring, data collection, and evaluation of regional revenue [24]. Therefore, the efficiency of fund utilization and financing priorities is crucial in strengthening levy collection functions.

D. Conclusion

Based on the analysis and discussion of the data obtained in this study, it can be concluded that efforts to increase Regional Original Revenue (PAD) through levies have not been optimal due to the five research sub-focuses not being fully implemented, as explained below:

- 1) The effectiveness of levy collection in port services has not been fully realized. The actual revenue collected has not reached the targets set annually.
- 2) Administrative and operational efficiency shows that levy administration and operations are running fairly well, with standardized procedures and the effective use of recording applications. However, efficiency has not reached its maximum potential because not all processes are fully digitalized, and supporting infrastructure remains limited.
- 3) The potential for levy collection from port services in North Sulawesi Province has not been fully utilized. In addition, administrative processes, which are still largely manual, and the lack of inter-agency coordination have resulted in the suboptimal realization of Regional Original Revenue from this sector.
- 4) In general, levy collection still faces numerous structural and technical obstacles. Low levels of socialization to levy payers result in limited payment compliance. Additionally, insufficient technical support from the central government and limited training for personnel reduce the effectiveness of levy policy implementation.
- 5) Efforts to optimize levy collection have not been fully realized. The Transportation Department has yet to develop a comprehensive mapping of levy potential, inter-agency coordination remains ineffective, and policy innovation is minimal. In addition, regional authority is limited due to the absence of a legal basis for levies on certain port services.
- 6) Budget constraints are the dominant factor hindering the overall effectiveness of the levy system. Limited operational funds result in irregular monitoring, data collection, and updating of levy objects, particularly in the archipelagic regions. This condition leads to low accuracy of levy payer data and reduces the potential for Regional Original Revenue.

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