Optimization of Port Supervision System in an Efforts to Prevent Smuggling of Goods Without Documents at KSOP Pangkalan Susu

Ade Muliansyah Batubara, Mhd Azhali Siregar, Fitri Rafianti

Abstract

Smuggling of goods without official documents remains a serious problem in the Indonesian port system because it has the potential to cause state losses, disrupt trade stability, and weaken the effectiveness of goods traffic supervision. KSOP Pangkalan Susu, as one of the strategic port areas, plays a crucial role in preventing this practice through an integrated supervision system. This study aims to analyze the effectiveness of the integration of administrative, physical, and digital supervision implemented at KSOP Pangkalan Susu in preventing the entry and exit of goods without official documents, and to formulate a model for optimizing port supervision based on inter-agency coordination. The research method used is empirical legal research with a juridical-sociological approach. Data were obtained through literature review, field observations, and interviews with relevant parties, then analyzed qualitatively. The results show that the integration of administrative, physical, and digital supervision has made a positive contribution to improving the control of goods flow, but its implementation has not been optimal due to obstacles such as limited technological facilities, human resources, and suboptimal data exchange between agencies. In addition, coordination between KSOP, Customs, Police, and other related agencies is still sectoral, so supervision is not fully effective. The recommended optimization model includes strengthening the integrated information system, increasing officer capacity, implementing risk management, conducting joint patrols, and establishing a sustainable coordination mechanism between agencies. These measures are expected to enable port supervision to prevent the smuggling of undocumented goods more effectively and sustainably.

Keywords: *Port Supervision, Smuggling of Goods, Official Documents, Inter-Agency Coordination, Pangkalan Susu KSOP.*

Ade Muliansyah Batubara[1]
[1]Law, Universitas Pembangunan Panca Budi, Indonesia
e-mail: ade_mbb@yahoo.com[1]

Mhd Azhali Siregar[2], Fitri Rafianti[3]
[2,3]Law, Universitas Pembangunan Panca Budi, Indonesia
e-mail: azhalisiregar@dosen.pancabudi.ac.id[2], fitrirafianti@dosen.pancabudi.ac.id[3]
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Introduction

Ports are strategic hubs in the national transportation system, serving as gateways for the flow of goods, passengers, and trade between regions and countries. The existence of ports not only supports economic growth but also determines the smooth flow of supply chains, state revenues, and the stability of commodity distribution. In this context, port supervision is fundamental because the high mobility of goods has the potential to give rise to various legal violations, one of which is the smuggling of goods without official documents. This practice results in lost state revenue, disrupted fair business competition, and increased risk of the entry of dangerous or non-safety goods.[1] Normatively, the state has established legal instruments to oversee the movement of goods through port areas, including Law Number 17 of 2008 concerning Shipping and Law Number 17 of 2006 concerning Amendments to Law Number 10 of 1995 concerning Customs. These regulations emphasize that supervision of port activities and the movement of goods must be carried out in an orderly, measured, and integrated manner across agencies. However, in practice, violations in the form of the entry or exit of goods without proper documentation still frequently occur due to gaps in administrative oversight, weak physical inspections, and limited use of digital technology in port control systems.[2]

Smuggling of goods without documents is essentially a form of economic crime with increasingly complex operating patterns. The methods used are no longer limited to clandestine transportation, but also include manipulation of manifests, the use of duplicate documents, falsification of cargo identities, and the exploitation of poorly supervised loading and unloading points. This situation demonstrates that conventional monitoring systems relying solely on manual inspections are no longer adequate. Therefore, an integration of administrative oversight, physical field monitoring, and data-driven digital monitoring is needed to detect risks early.[3] The Pangkalan Susu Port Authority (KSOP) enjoys a strategic position on the east coast of North Sumatra, adjacent to regional maritime trade routes. This port serves as a key point for logistics distribution, merchant vessel movement, and the economic activities of coastal communities. This geographic location also creates vulnerabilities to the entry and exit of goods without official documentation, especially if monitoring is carried out in a fragmented manner and lacks effective institutional coordination. Furthermore, the development of economic activity in the Pangkalan Susu region demands a monitoring system that adapts to the increasing volume of goods flow.[4]

In port administration practices, oversight is often fragmented between the authority of the harbormaster, customs, police, local governments, and other technical agencies. As a result, information exchange is suboptimal, inspection standards are inconsistent, and responses to indications of violations are often delayed. Yet, the nature of smuggling crimes requires a collaborative approach because perpetrators exploit gaps in coordination between authorities. Therefore, a synergy-based oversight model across agencies is urgently needed to ensure effective and sustainable implementation of preventative and law enforcement measures.[5] The digitalization of port services through electronic systems, such as the exchange of ship and cargo data, is a significant step forward in maritime sector bureaucratic reform. However, digitalization will not fully achieve optimal oversight without database integration, operator capabilities, and consistent audit mechanisms. A digital system will only be effective if it can connect ship arrival data, cargo manifests, permits, and field inspection results within a single oversight ecosystem. Thus, technology becomes more than just an administrative tool, but also an intelligent oversight instrument capable of detecting anomalies in the movement of goods.[6]

According to Azhali Siregar, law enforcement in the economic and trade sectors cannot rely solely on criminal sanctions but must be built through a preventive, accountable, and consistent oversight system. This approach is relevant in the port context, as prevention is more efficient than taking action after state losses have occurred. In other words, strengthening the oversight system is an integral part of modern criminal law policy. [7]

Based on the above description, this research is crucial to assess the effectiveness of the integration of administrative, physical, and digital supervision implemented at the Pangkalan

Susu Port Authority (KSOP) in preventing the entry and exit of goods without official documentation. Furthermore, this research aims to formulate a model for optimizing port supervision based on inter-agency coordination to combat the practice of smuggling goods without documentation. The research findings are expected to provide both academic and practical contributions to improving port supervision governance in Indonesia.

Research Methodology

This study uses an empirical legal research method with a juridical-sociological approach, namely a research method that examines the validity of legal norms while examining their implementation in social and institutional practices. This approach was chosen because the object of study is not only related to the provisions of laws and regulations regarding port supervision and smuggling prevention, but also concerns the effectiveness of the implementation of the supervisory system in the field at the Pangkalan Susu Port Authority (KSOP). Through this method, the study can assess the conformity between law in books and law in action in the context of monitoring the flow of goods and enforcing port administrative law. [8]

The research specification is descriptive-analytical, systematically describing the current administrative, physical, and digital supervision conditions at the Pangkalan Susu Port Authority (KSOP). It then analyzes the obstacles, effectiveness, and need for system updates. The descriptive nature is used to map empirical facts regarding the mechanisms for inspecting ship and cargo documents, loading and unloading procedures, and inter-agency coordination. Furthermore, the analysis is conducted to find a model for optimizing supervision that is more responsive to the threat of smuggling of goods without official documents. [9]

The research location was the Pangkalan Susu Port Authority (KSOP), a port working area with continuous freight and ship traffic. This location was chosen based on strategic considerations, namely the port's location, which is directly connected to logistics distribution in the eastern coastal area of North Sumatra, and the potential vulnerability to the entry and exit of goods without official documentation. By selecting this location, the research aims to obtain actual data on port supervision practices at the operational level. [10]

The data sources in this study consist of primary and secondary data. Primary data were obtained directly from the field through interviews with KSOP officials, supervisory officers, Customs and Excise elements, port security personnel, and other parties related to the goods monitoring system. In addition, observations were made of the document inspection process, loading and unloading activities, access to and from the port area, and the use of digital surveillance equipment. Meanwhile, secondary data came from primary legal materials in the form of Law Number 17 of 2008 concerning Shipping, Law Number 17 of 2006 concerning Customs, ministerial regulations, and secondary legal materials in the form of books, scientific journals, and relevant previous research results. [11]

Data collection techniques were conducted in three ways. First, a literature review, which examined scientific literature, laws and regulations, and official documents related to port supervision and smuggling crimes. Second, semi-structured interviews with informants selected purposively based on their competence and involvement in port supervision. Third, field observation, which directly observed operational procedures for goods supervision and port service activities. A combination of these three techniques was used to ensure the data obtained was more comprehensive and could be cross-checked through a process of triangulation. [12]

The study population encompassed all elements related to supervision in the Pangkalan Susu port area, while the sample was determined using a purposive sampling technique. Sampling was conducted on parties deemed to have direct knowledge of the supervision process, such as KSOP structural officials, field officers, Customs and Excise officers, Maritime Police, port operators, and port service users. This technique was chosen because not all of the population had information relevant to the research focus. [13]

The collected data was analyzed qualitatively, through the stages of data reduction, classification, data presentation, and conclusion drawing. The analysis was conducted by comparing normative provisions regarding port supervision with the reality of implementation in the field. Furthermore, the analysis results were used to answer two research questions: assessing the effectiveness of the integration of administrative, physical, and digital supervision, and formulating a model for optimizing supervision based on inter-agency coordination. Using this method, the research results are expected to provide practical and academic recommendations for improving port supervision governance. [14]

Results

The Effectiveness of the Integration of Administrative Supervision, Physical Supervision, and Digital Supervision Implemented at the Pangkalan Susu KSOP in Preventing the Entry and Exit of Goods Without Official Documents

1. Effectiveness of Administrative Supervision Integration in Goods Document Control

Administrative oversight is a fundamental instrument in the port monitoring system because all goods flows must be supported by valid, complete, and verifiable documents. At the Pangkalan Susu Port Authority (KSOP), administrative oversight is carried out through inspections of cargo manifests, sailing permits, documents of origin, loading and unloading permits, and the identity of the owner or sender. This stage is crucial because it serves as the first step in assessing the legality of goods before further inspections are conducted. Strict administrative verification can reduce the potential for undocumented goods to enter and exit. [15]

The effectiveness of administrative oversight is greatly influenced by the quality of document inspections and the ability of officers to detect data discrepancies. In practice, smuggling is not always carried out without any documentation at all, but often involves the use of incomplete documents, outdated documents, false identities, or incorrect information about the type of goods. Therefore, administrative oversight is not sufficient simply to formally accept documents; it must also verify the substance of the documents. Cross-checking the ship's manifest, cargo quantity, and destination is a crucial step in detecting any indication of violations. [16]

At the Pangkalan Susu Port Authority (KSOP), the effectiveness of the administrative system is also closely linked to the compliance of port service users, such as shipping agents, logistics companies, and goods owners. If business actors have good legal awareness, the oversight burden will be lighter because documents are submitted correctly and on time. Conversely, low administrative compliance increases the opportunity for data manipulation. In such circumstances, supervisory authorities must implement a consistent administrative sanctions system so that any document violations have clear legal consequences. [17]

Furthermore, administrative oversight needs to be developed through a risk-based approach. This means that not all documents are examined with the same level of intensity, but rather prioritized shipments exhibiting suspicious patterns. According to Mhd. Azhali Siregar, effective legal policy must prioritize prevention through a rational and measurable control system. This view suggests that port administration should be a tool for early detection, not simply a bureaucratic routine. Thus, administrative oversight at the Pangkalan Susu Port Authority (KSOP) can be considered quite effective, but still requires strengthening risk analysis and disciplined document reporting. [18]

2. Effectiveness of Physical Supervision of the Flow of Goods in the Port Area

Physical supervision is a form of direct monitoring of goods, vessels, transport vehicles, storage warehouses, and all operational activities within the port area. At the Pangkalan Susu Port Authority (KSOP), physical supervision is carried out through inspections of ship cargo, checking goods during loading and unloading, dock patrols, and monitoring entry and exit routes within the port area. This form of supervision is crucial because documents that appear

legitimate may not necessarily correspond to the actual goods on the ground. Therefore, physical supervision serves as a means of factually proving the legality of goods. [19]

The effectiveness of physical surveillance is largely determined by the accuracy of inspection targets and the presence of officers at vulnerable points. In smuggling practices, perpetrators often exploit busy loading and unloading times, shift changes, or areas with minimal security. If field surveillance is conducted haphazardly and unplanned, these gaps are easily exploited. Therefore, regular patrols, surprise inspections, and the placement of personnel in strategic areas are essential components of an effective physical surveillance strategy. [20]

On the other hand, the vastness of the port area and the high mobility of goods often present unique challenges. Limited staff can prevent all monitoring points from being optimally covered. Furthermore, the presence of small vessels or irregular transportation around the port area also has the potential to be used as unofficial routes for goods to enter and exit. These conditions demonstrate that the effectiveness of physical monitoring depends not only on the presence of personnel, but also on the adequacy of human resources and operational support facilities. [21]

To improve the effectiveness of physical supervision at the Pangkalan Susu KSOP, a risk-prioritized work pattern and rapid coordination between field officers are required. Inspections do not have to be conducted on all goods, but rather focused on specific, high-risk loads, such as high-value items, items easily transported, or shipments with questionable documentation. This model allows for more efficient use of supervisory personnel. Therefore, physical supervision at the Pangkalan Susu KSOP is quite effective as a field control tool, but still requires reinforcement of personnel, patrol facilities, and a rapid response system. [22]

3. Effectiveness of Digital Surveillance and Integration Between Surveillance Systems

Advances in information technology have transformed port supervision patterns from manual systems to faster and more accurate digital systems. At the Pangkalan Susu Port Authority (KSOP), digital supervision is enabled through the use of surveillance cameras, electronic recording of ship and cargo documents, cargo movement tracking systems, and inter-agency data communication. This technology facilitates oversight, allowing continuous monitoring of port activities without the need for the physical presence of officers in the field.[23]

The effectiveness of digital surveillance lies in its ability to create a documented data trail. Every movement of goods, document changes, or transport vehicle activity can be recorded and traced if any suspected violations are discovered. This is crucial in preventing smuggling, as perpetrators often exploit weaknesses in manual record-keeping to eliminate administrative evidence. With a digital system, data changes can be detected more quickly, allowing for immediate corrective action. [24]

However, digital systems will not function optimally without inter-agency integration. Port supervision involves various agencies, such as the Port Authority (KSOP), Customs, the Police, and port operators. If each agency uses its own database without a system connection, critical information is often received late. As a result, potential violations are not promptly addressed. Therefore, the effectiveness of digitalization depends heavily on integrated information systems that can be accessed according to the authority of each party. [25]

Going forward, the Pangkalan Susu KSOP requires an integrated oversight model that connects administration, physical oversight, and digital technology within a single collaborative working mechanism. This system can be realized through an integrated data center, automatic alerts for problematic documents, mapping of vulnerable port points, and regular evaluation of oversight results. With this integration, the opportunity for goods to enter and exit without official documentation will be reduced. Therefore, it can be concluded that digital oversight is the most strategic element in modernizing oversight, provided it is supported by infrastructure, competent operators, and effective inter-agency coordination.[26]

An Optimization Model for Port Supervision Based on Inter-Agency Coordination at the Pangkalan Susu Port Authority (KSOP) to Combat the Practice of Smuggling Goods Without Documents

1. Institutional Coordination Model through Joint Command System

Optimizing port supervision at the Pangkalan Susu Port Authority (KSOP) needs to begin with the establishment of a structured institutional coordination pattern through a joint command system between agencies. Port supervision cannot be implemented partially because it involves authority spread across the KSOP, Customs, Police, Navy, Quarantine, local governments, and port operators. If each agency works independently, information becomes fragmented and responses to suspected smuggling are slow. Therefore, a joint command model is necessary so that all elements have the same policy direction, standards of action, and communication channels for monitoring undocumented goods. [27]

A joint command system can be realized through the establishment of an operational control center that coordinates field reports, allocates monitoring areas, and makes rapid decisions regarding action. This control center must be able to receive data from various agencies and translate it into operational instructions. With this mechanism, if a suspicious vessel or cargo is detected, inspections can be carried out immediately without waiting for multi-layered bureaucratic procedures. This model will expedite case handling while reducing the potential for overlapping authority between agencies. [28]

Institutional coordination also needs to be strengthened through the development of unified standard operating procedures. One of the obstacles to oversight has been differences in inspection procedures between agencies, leading to uncertainty about actions in the field. With shared SOPs, each agency understands when to act, how inspections are conducted, and who is responsible for legal follow-up. This uniformity of procedures will increase oversight efficiency and avoid conflicts of authority. [29]

From a legal policy perspective, Mhd. Azhali Siregar emphasized that the effectiveness of law enforcement is largely determined by the alignment of institutional structures and the certainty of working mechanisms between state organs. This opinion demonstrates that eradicating smuggling cannot simply rely on criminal regulations but must be supported by solid institutional governance. Therefore, the joint command model at the Pangkalan Susu KSOP is a strategic step to close the coordination gaps that have been exploited by smugglers.

2. Model of Information Integration and Inter-Agency Supervision Technology

In addition to institutional coordination, port supervision requires the integration of information between agencies through interconnected digital technology. Each agency inherently possesses critical data, such as incoming vessel data, cargo documents, shipper identities, and violation history. However, if this data is stored separately, it is difficult to comprehensively map potential threats. Therefore, the monitoring optimization model at the Pangkalan Susu Port Authority (KSOP) needs to be directed toward the development of an integrated data system that can be accessed based on the authority of each agency. [31]

An integrated information system allows officers to quickly determine whether a vessel has been involved in any violations, whether the cargo conforms to the manifest, or whether the shipper has a high-risk record. With this technology, oversight no longer relies solely on manual inspections but is supported by objective data analysis. If anomalies are detected, the system can provide early warnings so that physical inspections can be prioritized immediately. This method is far more efficient than random inspections without any basis in information.[32]

The use of surveillance cameras, motion sensors, GPS tracking of transport vehicles, and electronic recording of incoming and outgoing goods also need to be integrated into a single monitoring dashboard. Through this system, the movement of goods from the dock to the warehouse or out of the port area can be monitored in real time. If any goods are moving without validated documentation, the system can immediately flag them and send a notification to officers. This mechanism is crucial for preventing rapid and covert smuggling practices. [33]

However, technology integration will only be effective if it is accompanied by data security and increased operator capacity. A sophisticated digital system will be useless if officers are unable to operate the equipment or are not disciplined in inputting data. Therefore, the Pangkalan Susu KSOP needs to conduct regular training, cybersecurity audits, and periodic system performance evaluations. With these steps, surveillance technology can truly become a key tool in combating the smuggling of undocumented goods. [34]

3. Collaborative Supervision Model through Joint Operations and Periodic Evaluation

The next optimization model is collaborative oversight through routine joint operations between agencies. Joint operations are necessary because smuggling often exploits weaknesses in oversight at specific times, on specific routes, or at specific loading and unloading points. Joint operations between the KSOP (Customs and Excise Office), the Police, the Navy, and other agencies, broaden the scope of oversight and exert stronger pressure. The presence of various state agencies in a single operation also provides a deterrent effect for business actors intent on committing violations. [35]

Joint operations should be based on mapping vulnerable areas, ship arrival schedules, and high-risk commodities. This approach is more effective than routine patrols without clear targets. For example, if a route is frequently used by small vessels at night, operations should be focused on that time and location. Based on field intelligence, personnel and budget utilization are more efficient, and monitoring results are more measurable. [36]

In addition to field operations, regular evaluations are a crucial part of the collaborative oversight model. Each agency should periodically meet to assess the number of violations prevented, the obstacles encountered, and any emerging smuggling patterns. These evaluation forums can inform the formulation of follow-up policies, changes to patrol strategies, and improvements to surveillance facilities. Without evaluation, surveillance patterns will stagnate and become easily read by smugglers. [37]

Ultimately, a collaborative oversight model will be effective if it is built on shared commitment, information transparency, and balanced responsibility across agencies. The Pangkalan Susu Port Authority (KSOP), as the leading sector, needs to play a central role in coordinating the joint oversight agenda. If coordination, technology, and field operations are implemented simultaneously, the practice of smuggling goods without proper documentation can be significantly reduced. Therefore, modern port oversight must shift from a sectoral model to an adaptive and sustainable collaborative model. [38]

Conclusion

Based on the research results, the effective integration of administrative, physical, and digital oversight at the Pangkalan Susu Port Authority (KSOP) has significantly contributed to preventing the entry and exit of goods without proper documentation, although implementation has not been optimal. Administrative oversight is able to verify the legality of documents, physical oversight ensures the conformity of goods in the field, while digital oversight accelerates the detection and monitoring of port activities. The main obstacles remain limited human resources, technological resources, and inter-agency coordination.

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