



The Role of Container Security Initiative (CSI) in Improving Supply Chain Security in Indonesia

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ABSTRACT

The Container Security Initiative (CSI) is a pivotal program in enhancing global supply chain security, particularly in Indonesia. Introduced as a response to terrorist threats post-September 11, 2001, CSI aims to secure international container shipments through pre-screening at ports of origin. This article analyzes CSI implementation in Indonesia, its impact on supply chain security, and its role in bolstering maritime security. CSI has proven effective in mitigating smuggling risks and improving logistical efficiency. The program also fosters international cooperation in addressing transnational threats. Despite challenges such as increased operational costs, CSI contributes significantly to Indonesia's national security and economic stability. Effective CSI implementation has the potential to strengthen Indonesia's position in global trade and enhance resilience against maritime security threats.

INTRODUCTION

In an increasingly interconnected era of globalization, international trade has become the backbone of the global economy. The steadily rising trade volume brings substantial benefits to nations worldwide, fostering economic growth, generating employment opportunities, and elevating living standards. However, alongside these advantages, there exist increasingly complex security challenges. The extended and dispersed nature of global supply chains renders them vulnerable to various threats, ranging from terrorism to smuggling. Security has become a paramount concern, as any breach in the supply chain can have significant repercussions on the global economy and international stability. To address these challenges, the United States introduced the Container Security Initiative (CSI) in 2002 as a response to the September 11, 2001 attacks. This initiative aims to enhance global supply chain security by conducting container inspections prior to their departure from the port of origin en route to the United States. Through collaboration with international ports, CSI endeavors to identify and mitigate potential threats before containers reach U.S. borders. This program not only augments security measures but also strengthens international cooperation in the domain of maritime security, establishing CSI as a fundamental pillar in efforts to maintain the smooth operation and security of global trade in the modern era (U.S. Customs and Border Protection, 2019).

The Container Security Initiative (CSI) plays a crucial role in maintaining global security by preventing the smuggling of weapons of mass destruction (WMDs) and ensuring the security of international supply chains. United Nations Security Council Resolution 1540 supports the objectives of CSI by mandating all UN member states to implement comprehensive regulatory systems to prevent non-state actors from acquiring WMDs and related technologies. Within this framework, nations can collaborate to mitigate the risks of WMD proliferation and secure global trade routes, thereby fostering stability and security in international commerce (Early et al., 2017).

This essay elucidates the critical importance of security in global supply chains, with a particular focus on Indonesia, an archipelagic nation characterized by high maritime activity. Supply chain security assumes crucial significance in light of threats such as weapons smuggling, drug trafficking, and other illicit goods that can undermine economic and social stability. The Container Security Initiative (CSI), as a United States initiative, has demonstrated its efficacy in strengthening container surveillance at major ports, mitigating security risks, and enhancing international cooperation in addressing transboundary threats. With appropriate implementation, CSI holds significant potential to augment the security and resilience of Indonesia's supply chains, thereby supporting sustainable and stable economic growth.

LITERATURE REVIEW

Theory of Deterrence

Deterrence Theory plays a crucial role in understanding the effectiveness of the Container Security Initiative (CSI) in enhancing global maritime security. This theory posits that the presence of robust security measures can deter potential threats (Schelling, 2008). In the context of CSI, the implementation of stringent container inspections at the port of origin serves as a deterrent to terrorist groups and other criminal organizations. The implementation of the Container Security Initiative (CSI) establishes a robust first line of defense within the global supply chain. By conducting thorough inspections before containers depart from their ports of origin, CSI effectively reduces the attractiveness of maritime transport as an option for illegal activities (U.S. Customs and Border Protection, 2019). This aligns with the principles of Deterrence Theory, which asserts that increasing the risks and difficulties associated with committing illegal actions can decrease the likelihood of such activities occurring. The deterrent effect of the Container Security Initiative (CSI) is not limited to ports of origin but extends to the overall security of global trade. As noted by Haveman et al. (2007), CSI functions as an integral component of a broader maritime security strategy, significantly contributing to international efforts in preventing terrorism and transnational crime. This approach reinforces the argument of Deterrence Theory, which posits that the presence of strong security systems can generate a widespread deterrent effect.

Collaborative Security Theory

Collaborative Security Theory emerged as a response to the complexity of global security challenges in the modern era. This theory emphasizes that security can no longer be guaranteed through unilateral actions of individual countries, but rather requires close international cooperation (Smith, 2018). Therefore, CSI aims to improve the security of international container shipping through partnerships with other countries, reflecting the main principles of Collaborative Security Theory (Johnson, 2020). The overall success of CSI in improving global maritime security demonstrates the power of a collaborative approach. This confirms the relevance of Collaborative Security Theory in addressing transnational security challenges in the 21st century, demonstrating that international cooperation is not just an option, but a necessity in today's interconnected security landscape (Thompson, 2022).

Supply Chain Security System Theory

Supply Chain Security Systems Theory emerged as a response to the complexity and interdependence in modern global trade. This theory views supply chain security as an integrated ecosystem, where each component plays a crucial role in maintaining the integrity of the entire system (Anderson & Lee, 2019). The fundamental principle of Supply Chain Security Systems Theory is the interconnectivity among elements. From this perspective, security is not solely the responsibility of a single entity or nation, but rather the result of collective efforts by all stakeholders within the supply chain. The Container Security Initiative (CSI) operationalizes this principle by establishing robust international

partnerships. Through collaboration with port authorities across various countries, CSI creates an interconnected security network, wherein information and best practices are shared in real-time to identify and mitigate potential risks (World Customs Organization, 2021).

METHODOLOGY

This study employs a qualitative descriptive method as outlined by Sarwono (2006). Data collection was carried out through a systematic and in-depth review of various relevant sources. These sources include scientific journals, research publications, research reports, and websites related to the topic discussed in this study. The data collection process aims to obtain a comprehensive and thorough understanding of the issue being examined, thereby enabling a more detailed and focused analysis. The sources utilized in this research are meticulously chosen due to their pertinence and the value they add to the core topic. In the process of gathering and analyzing data, content analysis techniques are employed to uncover central themes, recurring patterns, and relevant insights derived from secondary data. This methodology equips the study to generate well-founded, actionable recommendations that can inform policy development and enhance practices in the surveillance of marine and fisheries resources, while also addressing wider concerns in maritime security.

RESEARCH RESULT

Implementation of Container Security Initiative in Indonesia

The implementation of the Container Security Initiative (CSI) in Indonesia commenced in 2005, as a response to the escalating global terrorism threat following the September 11, 2001 attacks and the imperative to secure maritime supply chains (Directorate General of Customs and Excise, 2006). The implementation of CSI has significantly transformed the landscape of international trade. By adopting the "push out the borders" principle, CSI enables security inspections to be conducted before goods reach their final destination. This approach not only enhances security levels by identifying potential threats earlier but also effectively streamlines trade flows by reducing congestion at destination ports. It aids in optimizing logistical efficiency and ensures consistency in compliance with international security standards, rendering CSI an integral component of the global strategy to enhance maritime security and sustainability in global supply chains according to the World Customs Organization (2018). This is further corroborated by Kurnia (2018), who notes that the implementation of CSI has contributed to a 12% increase in Indonesia's export volume within the first five years of its application.

Indonesia, as the world's largest archipelagic nation, occupies a strategic role in global maritime trade. In an effort to enhance the security and efficiency of international commerce, Indonesia has designated several of its major ports as Container Security Initiative (CSI) ports. The implementation of CSI at these ports represents a significant step towards strengthening maritime supply chain security and facilitating secure trade (Directorate General of Customs and Excise, 2020).

Table 1. CSI Ports in Indonesia

Ports	Location	Year of Implementation
Tanjung Priok	Jakarta	2005
Tanjung Perak	Surabaya	2007
Belawan	Medan	2009
Soekarno-Hatta	Makassar	2012
Boom Baru	Palembang	2015

Source: Ministry of Transportation of the Republic of Indonesia (2020).

The implementation of the Container Security Initiative (CSI) in Indonesia represents a strategic measure to enhance maritime security and facilitate international trade. International cooperation serves as a fundamental pillar in the success of this program, given the global nature of container supply chains. CSI enables security inspections to be conducted at the port of origin before containers reach their final destination in Indonesia. This not only helps mitigate risks associated with the smuggling of weapons and prohibited goods but also enhances the speed and security of operations at destination ports, contributing to reduced logistics costs and waiting times.

For instance, the initial collaboration with the United States, as the originator of CSI, established a crucial foundation for Indonesia. Through a Memorandum of Understanding signed in 2005, Indonesia gained access to state-of-the-art container scanning technology and intensive training programs for customs officers. According to a report by the Directorate General of Customs and Excise (2023), within the first five years of this cooperation, over 1,000 Indonesian officers received direct training from U.S. experts, resulting in a 75% increase in threat detection capabilities at Indonesia's major ports.

This data demonstrates that inter-country cooperation in CSI implementation is also vital for enhancing cross-border surveillance and establishing robust information networks. Consequently, CSI not only serves as a primary instrument in protecting Indonesia from maritime security threats but also as a model for global initiatives in addressing increasingly complex challenges within and around Indonesian waters. With appropriate support and effective implementation, CSI has the potential to significantly impact Indonesia's economic stability and national security positively, as well as contribute constructively to global maritime security. International and regional cooperation play a crucial role in enhancing maritime security (Johnstone, 2015).

The collective impact of this international cooperation on the effectiveness of CSI implementation in Indonesia has been profound. According to a comprehensive study conducted by Wijaya and Sari (2020), the efficacy of cross-border threat detection has increased by 60% since the initial implementation of CSI. Furthermore, an analysis by the Maritime Security Research Center (2023) revealed that international cooperation has contributed to:

- a) An improvement in container scanning accuracy from 78% (2005) to 97% (2022)
- b) A reduction in document processing time from an average of 3 days to 6 hours
- c) An 83% increase in the detection of illegal goods (2010-2022)
- d) 91% decrease in piracy incidents in Indonesian waters (2005-2022)

These quantitative indicators underscore the substantial progress achieved through collaborative efforts in enhancing maritime security and trade facilitation within the Indonesian archipelago.

Impact of Container Security Initiative on Supply Chain Security

The Container Security Initiative (CSI) is a program launched by U.S. Customs and Border Protection (CBP) in 2002 as a response to the global terrorism threat, particularly through the use of shipping containers. The program aims to enhance the security of the global supply chain, with a focus on international maritime container shipments. The following are key impacts of CSI on supply chain security:

- a) **Increased Container Inspections**
CSI involves intensive inspections of high-risk containers before they depart from foreign ports bound for the United States. This reduces the likelihood of shipping illegal goods or materials that could be used for terrorist purposes.
- b) **Enhanced Security Standards**
Through CSI, international shipping security standards have been strengthened. Parties involved in the supply chain must adhere to stricter security procedures to ensure that containers and their contents are protected from tampering or illegal use.
- c) **International Collaboration**
CSI fosters cooperation between the U.S. government and partner governments worldwide. This helps build a global network of collaboration aimed at collectively enhancing supply chain security.
- d) **Economic Impact**
While CSI is designed to improve security, the program can also have economic implications. Stricter inspections and heightened security requirements may increase operational and logistical costs for companies involved in international shipping.

- e) **Increased Confidence**
The implementation of CSI can bolster consumer and investor confidence in the security of a company's supply chain. This is crucial for maintaining operational integrity and business reputation in the global market.
- f) **Challenges and Criticism**
Despite its many benefits, CSI faces challenges such as additional costs, longer processing times, and complex coordination among participating countries.
- g) **Future Outlook**
As global trade continues to evolve, so too will the requirements and implementation of CSI. Indonesia is well-positioned to adapt to these changes, having established a strong foundation through its early adoption of the initiative. The Indonesian Ministry of Transportation (2023) has outlined plans for further integration of CSI principles across all major ports by 2030, aiming to create a uniformly secure maritime trade environment.

The Container Security Initiative has had a profound and multifaceted impact on supply chain security in Indonesia. While challenges remain, particularly for smaller ports and businesses, the overall effect has been positive, leading to enhanced security, improved efficiency, and greater international cooperation. As Indonesia continues to refine and expand its implementation of CSI principles, it is likely to see further benefits in terms of trade facilitation and global competitiveness in the maritime sector. The program remains a crucial component of international efforts to protect the supply chain from evolving security threats. According to Yap & Lam (2006), initiatives such as the CSI help secure the global supply chain through comprehensive inspections of international containers before they depart from their ports of origin, as well as through close international cooperation in identifying and addressing potential security threats.

Although well-intentioned, the implementation of the Container Security Initiative (CSI) in Indonesia has led to several negative impacts on supply chain security. One of the main issues is the significant increase in operational costs for Indonesian shipping and logistics companies. According to a study conducted by the Ministry of Trade of the Republic of Indonesia (2022), container handling costs at major Indonesian ports have risen by an average of 15-20% since the implementation of CSI. This cost increase is primarily due to the need for investment in expensive scanning technology and security equipment, as well as specialized personnel training to carry out CSI procedures.

In addition, the implementation of CSI has created a technological and infrastructural gap between major and smaller ports in Indonesia. Major ports that are able to meet CSI standards receive priority in international shipping, while smaller and medium-sized ports that lack the resources to implement CSI have become marginalized. This has led to disparities in port infrastructure development across Indonesia and potentially created new security vulnerabilities within the national supply chain. According to a 2023 report from the National Development Planning Agency (Bappenas), only 5 out of 24 major

ports in Indonesia fully meet CSI standards, while the remainder are still struggling to adopt the required technology and procedures.

The implementation of CSI has also raised concerns about sovereignty and data confidentiality among Indonesian industry players. The requirement to share sensitive information about cargo and shipments with U.S. authorities has sparked questions regarding the potential misuse of data and risks to national security. Some Indonesian companies have expressed reluctance to disclose certain information, which in turn could hinder the smooth verification process under CSI and potentially disrupt trade flows. A study conducted by the Indonesian Institute of Sciences (LIPI) in 2023 revealed that 42% of Indonesian logistics companies are concerned about the data security implications of the CSI program (LIPI, 2023).

The Container Security Initiative (CSI) has exerted a significant influence on supply chain security in Indonesia, yielding both positive and negative consequences. On one hand, CSI has enhanced container shipment security and mitigated the risk of container utilization for illicit activities or terrorism (Banomyong, 2005). Conversely, the implementation of CSI has presented challenges for Indonesia, including increased operational costs and potential delays in shipping processes (Saputra et al., 2018). Nevertheless, the long-term benefits of improved security and international trust are likely to outweigh these short-term constraints. To maximize the advantages of CSI, Indonesia needs to continue investing in infrastructure and technology that support the efficient implementation of this initiative, while collaborating with international partners to address emerging challenges (Kurnia & Johnston, 2011). This balanced approach will be crucial in optimizing the positive impacts of CSI on Indonesia's supply chain security while minimizing its negative effects.

The Role of Container Security Initiative in Enhancing Maritime Security

The role of the Container Security Initiative (CSI) in enhancing maritime security is paramount. CSI contributes to strengthening surveillance of containers at major ports, thereby mitigating the risks associated with the smuggling of weapons and other hazardous materials that could potentially jeopardize national and regional security. Through international cooperation and the utilization of advanced technology, CSI enables nations to augment their detection capabilities against maritime threats, rendering it an effective tool in safeguarding global trade routes from potential attacks or transnational criminal activities. Consequently, CSI not only enhances port and waterway security but also contributes to overall maritime security stability. Thus, there is a pressing need for governments to play a crucial role in formulating policies and regulations that support maritime security. This encompasses strengthening maritime law regulations, intensifying sea patrols, and developing national strategies to bolster security at sea (Singh, 2019).

When implementing stringent security measures at ports of origin, this initiative effectively reduces the appeal of maritime transportation as an option for such groups. CSI is an integral component of a broader global strategy in securing sea trade routes, with its success measurable through its contribution to international efforts in preventing terrorism and transnational crime. By ensuring that every container entering a country has undergone rigorous security checks at the port of origin, CSI not only acts as the first line of defense in deterring threats before they reach American shores but also provides a significant deterrent effect against terrorist groups potentially utilizing maritime routes for their objectives. This approach not only enhances national security but also aids in maintaining global security stability by diminishing the potential success of criminal endeavors that primarily involve sea transportation as their means (Haveman et al., 2007).

The Container Security Initiative (CSI) has established standards as a model for global maritime security initiatives. CSI has successfully mitigated potential threats such as the smuggling of weapons and other hazardous materials before they reach their final destinations. The success of CSI lies not only in the physical security of containers but also in strengthening international cooperation through intelligence exchange and best practices in securing global supply chains. Consequently, CSI not only provides direct protection against terrorist attacks and transnational crimes but also serves as a blueprint for effective maritime security strategies across various regions of the world (Tauechel et al., 2015).

CONCLUSIONS AND RECOMMENDATIONS

CSI has proven to be a vital strategy in strengthening maritime security and supply chain efficiency in Indonesia. CSI allows Indonesia to conduct early security inspections at the port of origin, significantly reducing the risks of weapon smuggling, contraband, and other hazardous materials before they reach their final destination within the country. This approach not only directly enhances security but also accelerates logistics processes at destination ports, reducing operational costs and congestion. Beyond its security benefits, the implementation of CSI in Indonesia also creates opportunities for improving international cooperation in cross-border surveillance and security information exchange. This demonstrates Indonesia's commitment to safeguarding its maritime security and contributing to regional and global stability. However, the implementation of CSI is not without challenges. It requires investment in technology and infrastructure, as well as the enhancement of human resource capacity to ensure effective and efficient security inspections. Furthermore, inter-agency coordination and cross-sector collaboration are essential to optimize the outcomes of CSI, especially in the context of Indonesia's geographical and political complexity.

ADVANCED RESEARCH

Conduct comparative studies with other countries that have implemented similar security initiatives to identify best practices and lessons learned. This could provide valuable insights into optimizing CSI implementation in Indonesia.

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