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## **RESEARCH ON SUPPLY CHAIN SECURITY MANAGEMENT INITIATIVES**

### **Abstract:**

Government organizations have been developing a range of initiatives that are designed to secure international supply chains from threats focus on the concept of Accredited Operators. The purpose of the research is to review the initiatives of World Customs Organization, as SAFE Framework and the Accredited Operator concept, which is being supported by a number of regulatory agencies in the form of Authorized Economic Operator, which have emerged as a result of international initiatives relating to supply chain security. SAFE Framework is an instrument heralding the beginning of a new approach to the management of goods moving across borders and presents the criterion by which businesses in the supply chain can obtain authorized status as a security partner. Such criteria address issues such as threat assessment, a security plan adapted to the assessed threats and procedural measures to prevent irregular goods entering the international supply chain. This paper presents the current state of supply chain security management initiatives in the European Union and discusses their managerial implications, including the importance of interplay between various parties to support the fluent and secure flow of goods in the global economy.

### **Keywords:**

Supply chain, security of international flows, supply chain security standards, Authorized Economic Operator, customs logistic

**JEL Classification:** K19, K22, M16

## 1. Introduction

The multifaceted impact of supply chain management on trade drives many of changes. The last two decades governments and international organizations designed supply chain security programmes, regulations and standards, while businesses have settled mandatory measures and participating in the design of some of these new measures. In supply chain process customs administrations are very important actors. Due to losses in time, the changes in customs operations are necessary for easier crossing the border. Transportation of goods and travelers have also increased significantly. It is projected that they will continue to expand in coming years. On the one hand, there is a need for effective security and control of international supply chains while on the other hand, there are increasing demands for greater facilitation of legitimate trade. With growing interconnectedness and greater demand for just-in-time delivery, trade needs to be faster and more reliable than ever before. Supply chain management is helping to facilitate trade and becomes more efficient, helping goods move faster across borders, meeting demands for “just in time” delivery. Trade facilitation has attracted significant political and commercial interest. The World Trade Organization has highlighted that the simplification and harmonization of international trade procedures leads to faster flow of goods across national borders, creating a stable business environment.

In order to implement trade facilitation and security measures effectively and efficiently, customs are required to become more actively involved in trade facilitation program. Customs administrations in EU began appreciating the activities of the business enterprises, seeking to gain the status of the Authorized Economic Operator (AEO). AEO is way that you can help make the customs clearance process smooth for your shipment. In order to implement this, the need of paying attention to the aspects of the international trade supply network appeared.

The World Customs Organization (WCO) has developed measures to secure and facilitate global trade which have been transformed into international standards for global implementation. The WCO has established the Frameworks of Standards to Secure and Facilitate Global Trade (SAFE Framework) (Frameworks of Standards to Secure and Facilitate Global Trade, 2015; 2018) to global security and trade facilitation. The WCO SAFE Framework of standards provides the global standards for launching an AEO programme. The EU Customs Security Programme covers activities supporting the development and implementation of the security measures. With the new security initiative customs are enabled to carry out more targeted controls on high risk shipments. The concept of AEO was introduced as one of the main elements of the supply chain security. Greater information sharing through mutual agreements is enabling more efficient coordination of activities along global supply chains, helping customs administrations track packages and facilitating border crossings. Increasingly, firms are directly connected with customs authorities and this is contributing to greater efficiency of customs procedures and processes.

This paper seeks to encourage a debate in the academic and practitioner communities regarding the supply chain security elements according to the AEO program. Research on the implementation of the AEO program is still very limited. The current gaps in AEO research can be described as customs research is still in its infancy, academic training in customs studies is also recent and not widespread. As well as there is a lack of detailed case studies of AEO program. Currently, it is limited to reporting on AEO program. Quantitative research in this area is still very

limited, although it is very important to assess the impact of AEO program on a particular actor in the supply chain, such as an importer or exporter of goods, and other actors in the supply of goods.

## **2. Literature review of supply chain management**

Supply chain management is a relatively new research discipline. The recent large number of catastrophic events, such as natural disasters, terror attacks, pandemics, etc. has drawn attention to the vulnerability of supply chains (Jüttner, 2005).

By M.S. Sodhi, B.G. Son and C.S. Tang (2012) in an extensive study on perspective on supply chain risk management, was identified the lack of shared understanding of supply chain risk both in the academic society and among practitioners. Managing a supply chain implies maximizing or optimizing its performance, in terms of the ability to provide to customers the right quantities, at the right time and place with the right quality (Whitten, Green and Zelbst, 2012).

Reviewing the empirical literature of supply chain management issues, it can be said that emphasize different researches aspects. Mainly of the researchers, presently contributing to building supply chain management theory, have largely been active in research fields such as Transportation and Logistics (Sheffi and Rice, 2003), Supply chain Management (Hau and Wolfe, 2003) and Supply chain risk and vulnerability (Christopher and Peck, 2004).

In the management of supply chains, supply chain professionals coordinate production among multiple providers, ensuring that production and transport of goods happen with minimal quality control or inventory problems. However, even though it is possible to identify likely types of disruption, the precise nature of these and their impact on global supply chain and transport networks are hard to predict (Schwab, 2013). One goal of a well-designed and maintained supply chain for a product is to successfully build the product and transport to the consumer at minimal cost. Such a supply chain could be considered a competitive advantage for a firm (Blanchard, 2007).

Supply chains were originally defined as encompassing all activities associated with the flow and transformation of goods from raw materials through to the end user, as well as the associated information flows. Supply chain management was then further defined as the integration of supply chain activities through improved supply-chain relationships to achieve a competitive advantage (Handfield and Nichols, 1999).

The different steps in the risk management processes are interlinked, which means that a successful risk management requires that all steps in the supply chain risk management process are carried out (Blome and Schoenherr, 2011).

Supply chain management is geared towards strengthening and integrating traditional aspects of security into holistic management of integrated supply chains, especially within a global context. Supply chain security management has roots in multiple fields: Supply Chain Management, International Trade, Logistics and Cross-border Operations Management, Supply Chain Resilience Management, Quality Management, Risk Management, Insurance Policies and Instruments, Customs Policies, Procedures and Reforms (Hintsä et al., 2009).

The recent concerns on security are driving the introduction of new security initiatives forward to an extent that they are becoming an integral part of supply chain management. The challenge is to manage and mitigate supply chain risk by creating more resilient supply chains (Christopher and Peck, 2004). There is a need for a high amount of collaboration, which means being able to react quickly and fostering a risk management culture within an organization is a prerequisite for resiliency. As we will see in a further discussion, cooperation between supply chain actors to ensure supply chain security is very important.

### **3. Methodology**

During the study the first step was to conduct an analysis of the relevant literature and supporting documents. These include primary documents such as the SAFE Framework of Standards to Secure and Facilitate Global Trade, developed by the World Customs Organization, the EU Authorized Economic Operator concept, with focus on current issues as benefits of AEO status and Mutual Recognition of AEO, as well as academic papers and commentaries published in academic journals or by relevant international and national organizations. During the research the analysis and systematization of the scientific literature and legal acts, the data analysis and the comparison were combined. In this paper the focus was made on the analysis of the literature of supply chain security management issues, of the legal acts regulating global trade liberalization and customs administrations activities. After analyzing the research conducted on the issues of AEO program implementation, their grouping according to the examined areas was presented.

### **4. Results & discussions**

The World Customs Organization, as the global centre of customs excellence, plays a central role in the development, promotion and support for the implementation of modern customs standards, procedures and systems. Recently the role of customs has significantly changed from the collection of customs duties to the protection of citizens due to reduced duty rates and increased concerns for safety and security. Under the global economy conditions, customs activities are important for the protection of the public interests and the international supply network's security. The WCO initiative has been deliberately focused on the entire international trade supply chain, rather than restricting customs interest to that aspect of the international trade transaction when goods move across a border.

The basic principle underpinning WCO work has been to create an international mechanism for customs administrations to gain access to relevant information relating to international trade well in advance, for the purposes of risk management and has published the 2018 edition of the SAFE Framework of Standards (Framework of Standards to Secure and Facilitate Global Trade, 2018). Launched in 2005, this unique instrument ushered in modern supply chain security standards, heralding the beginning of a new approach to the end-to-end management of goods moving across borders while recognizing the significance of a closer partnership between customs administrations and businesses. The 2018 version supplements the objectives of the SAFE Framework (Framework of Standards to Secure and Facilitate Global Trade, 2018) with respect to strengthening cooperation between and among customs administrations, for example through the exchange of information, mutual recognition of controls, mutual recognition of Authorized Economic Operators and mutual administrative assistance. In addition, it calls for enhanced

customs cooperation with government agencies entrusted with regulatory authority over certain goods (e.g., weapons, hazardous materials) and passengers.

WCO SAFE Framework of Standards (Framework of Standards to Secure and Facilitate Global Trade, 2018) has been incorporated since the beginning at an international level as well as in the EU legislation. On the basis of Article 39 of the Union Customs Code (Regulation (EU) No 952/2013 of the European Parliament and of the Council, 2013), there are two types of AEO authorisations and the qualifying criteria will depend on the type of authorisation applied for: Customs Simplifications (AEOC) or Security and Safety (AEOS). The AEO status can be granted to economic operator meeting the following common criteria (Table 1):

**TABLE 1: AEO STATUS CRITERIA**

Conditions and criteria	AEOC	AEOS
Compliance with customs legislation and taxation rules and absence of criminal offences related to the economic activity	X	X
Appropriate record keeping	X	X
Financial solvency	X	X
Proven practical standards of competence or professional qualifications	X	
Appropriate security and safety measures		X

*Source: based on AEO Guidelines (2012).*

An AEOC authorisation is issued to an economic operator who fulfils the criteria of customs compliance, appropriate record keeping standards, financial solvency and practical standards of competence/professional qualifications. An AEOS authorisation is issued to an economic operator established in the EU who fulfils the criteria of customs compliance, appropriate record keeping standards, financial solvency and maintains appropriate security and safety standards.

The AEO status can be granted to economic operators who meet criteria specified in customs legislation, such as customs compliance, appropriate record-keeping, financial solvency, proven practical standards of competence or professional qualifications and, where relevant, appropriate security and safety standards.

The SAFE Framework also includes a comprehensive list of AEO benefits with certain minimum assured benefits. AEO benefits are an integral part of the EU legislation governing the AEO status. The AEO benefits, dependent on the type of the authorization, are summarized in the Table 2:

**TABLE 2: AEO BENEFITS**

<b>Benefit</b>	<b>AEOC</b>	<b>AEOS</b>
Easier admittance to customs simplifications	X	
Fewer physical and document-based controls: - related to security & safety - related to other customs legislation	X	X
Prior notification in case of selection for physical control (related to safety and security)		X
Prior notification in case of selection for customs control (related to other customs legislation)	X	
Priority treatment if selected for control	X	X
Possibility to request a specific place for customs controls	X	X
Indirect benefits (Recognition as a secure and safe business partner, Improved relations with Customs and other government authorities; Reduced theft and losses; Fewer delayed shipments; Improved planning; Improved customer service; Improved customer loyalty; Lower inspection costs of suppliers and increased co-operation etc)	X	X
Mutual Recognition with third countries		X

*Source: based on AEO Guidelines (2012).*

Benefits include quicker movement of low-risk cargo through customs, improved security levels, optimized supply chain cost through security efficiencies, enhanced reputation for the organization, increased business opportunities, improved understanding of Customs requirements, and better communication between the AEO and the Customs administration.

According to A. Jablonskis, M. Petersons and K. Ketners (2018), in order to ensure an effective, rational and value-adding flow management in the international supply chain, cooperation of economic entities and public authorities is necessary at various levels. By A. Laurinavičius (2018), cooperation is based on the criteria of rationality: the process of joint activities is oriented towards achievement of clearly defined socio-economic results; the key principles of the partnership model include the flexibility of legal relations between customs and entities of international trade, which allows customs authorities to provide specific logistic services and businesses – to develop and manage their flows in a socially responsible manner.

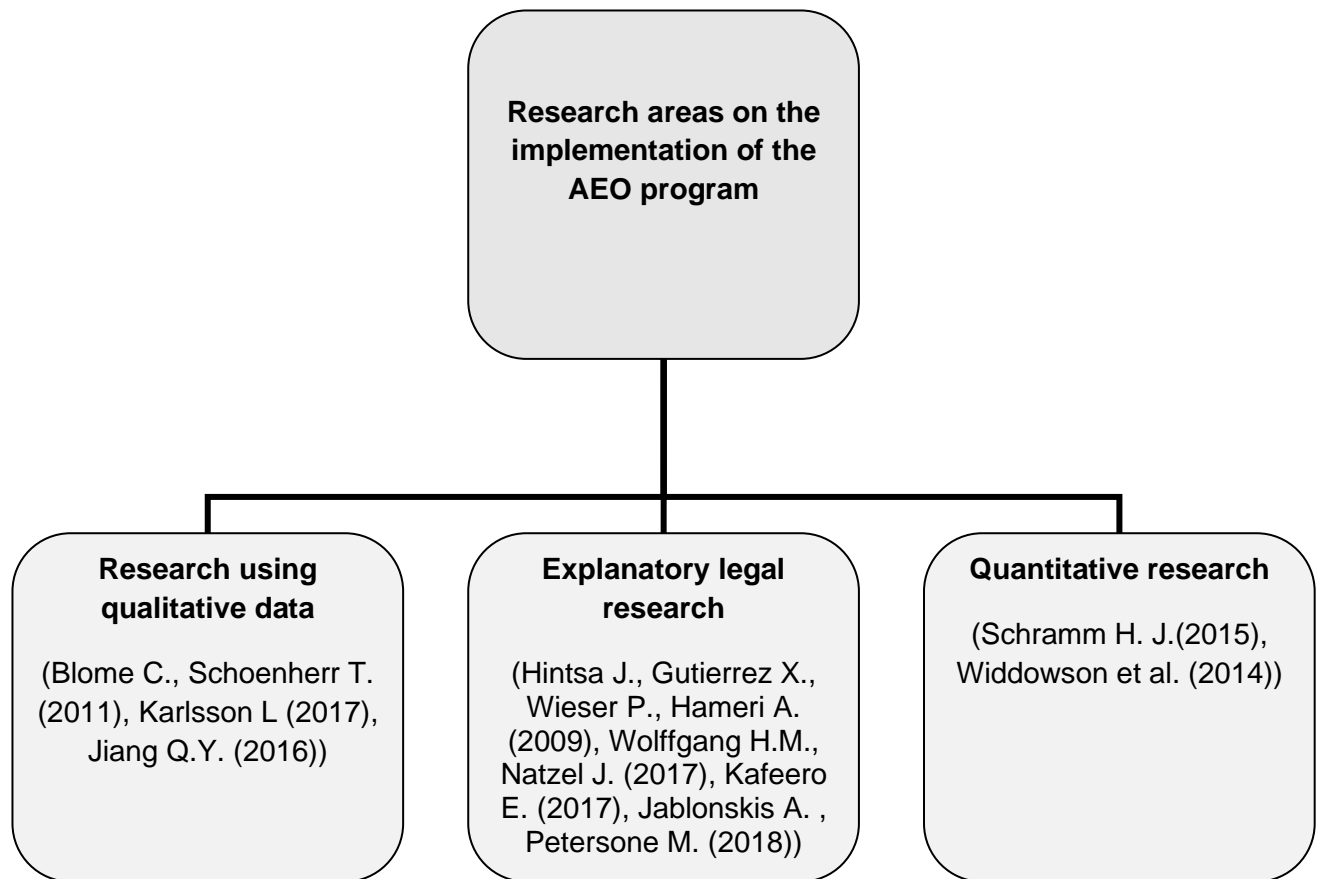
Cooperation with other competent authorities and alignment of program have been identified and recognized as a key element for the further development of a robust AEO program. It is to ensure

global supply chain security and to avoid duplication of efforts and costs for authorities and economic operators.

Mutual recognition of AEOs is a key element of the WCO SAFE Framework of standards to strengthen end-to-end security of supply chains and to multiply benefits for traders. By mutual recognition of AEOs two customs administrations agree to recognize the AEO authorization issued under the other program and provide reciprocal benefits to AEOs of the other program. The EU has concluded and implemented mutual recognition of AEO program with Norway, Switzerland, Japan, Andorra, the US and China. Further negotiations are currently taking place or will be launched in the near future with the other most important trading partners. The specific benefits of mutual recognition are contained in each individual mutual recognition agreement, but in general the benefits include fewer security and safety related controls, recognition of business partners during the application process and priority treatment at customs clearance. The updated SAFE Framework offers new opportunities for customs administrations, relevant government agencies and economic operators to work towards a common goal of enhancing supply chain security and efficiency, based on mutual trust and transparency.

Countries at different levels of development can expect to gain from trade facilitation and supply chain management affects. According to the OECD (Organization for economic co-operation and development) METRO model (OECD METRO simulation results OECD, 2018), simulations of multilateral trade agreements show that positive effects are higher when more countries participate in trade integration because it broadens market opportunities and reduces trade diversion.

With regard to the wider research on the implementation of the AEO program, it should be noted that research in this area is still at an early stage. After the analysis of the research on the implementation of the AEO program published in the scientific literature, the performed research can be grouped according to the following three areas (Figure 1):



**FIGURE 1: RESEARCH AREAS OF THE AEO PROGRAM**

*Source: created by autor*

Research using qualitative data - examined the evolution of AEO programs over time, leading to a governance model that benefits both customs administrations and Authorized Economic Operators (Karlsson L (2017), Jiang Q.Y. (2016)).

Explanatory legal research -examines the purpose of basic AEO rules and standards at international, regional and national levels and demonstrates the benefits of implementing AEO (Wolfgang H.M., Natzel J. (2017), Kafeero E. (2017), Jablonskis A. (2018)).

Quantitative research - mixture of both quantitative and qualitative approaches examines the benefits of selected AEO programs in quantitative terms, depending on which segmented import or export AEO program provides more benefits to large companies and which benefits more to small businesses (Schramm H. J.(2015), Widdowson et al. (2014)).

Research needs to be further developed, including the implementation of new supply chain security standards and the AEO program, in particular the need for qualitative and quantitative research on the implementation of the AEO program.



## 5. Conclusions

The World Customs Organization, as the global center of customs excellence, plays a central role in the development, promotion and support for the implementation of modern customs standards, procedures and systems. Customs activities are important for the protection of the public interests and the international supply network's security. The WCO SAFE Framework of standards provides the global standards for launching an AEO program. The SAFE Framework also includes a comprehensive list of AEO benefits. Mutual recognition of AEOs is a key element of the WCO SAFE Framework of standards to strengthen end-to-end security of supply chains and to multiply benefits for traders. Cooperation between supply chain actors to ensure supply chain security is very important.

Supply chain management is a relatively new research discipline. Most of the researchers, presently contributing to building supply chain management theory, have mainly been active in research fields such as Transportation and Logistics (Sheffi and Rice, 2003), Supply chain Management (Hau and Wolfe, 2003), Supply chain risk and vulnerability (Christopher and Peck, 2004), International Trade, Logistics and Cross-border Operations Management, Risk Management, Customs Policies, Procedures and Reforms (Hintsä et al., 2009).

With regard to the wider research on the implementation of the AEO program, it should be noted that research in this area is still at an early stage. After the analysis of the research on the implementation of the AEO program published in the scientific literature, the performed research can be grouped according to the following three areas: research using qualitative data, explanatory legal research and quantitative research.

Research needs to be further developed by combining theoretical supply chain security research, new security standards and practical management actions. More qualitative and quantitative research is needed on the implementation of the AEO program. Cooperation between academia, customs and business in the implementation of the AEO program is also essential.

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