Chapter 2
Supply Chains under Security Threat: The First National Exploratory Study in Mexico

Miguel Gastón Cedillo-Campos
Mexican Institute of Transportation, Mexico

R. G. González-Ramírez
Pontificia Universidad Católica de Valparaíso, Chile

A. Bueno-Solano
Mexican Institute of Transportation (IMT), Mexico

E. Jiménez-Sánchez
Mexican Institute of Transportation (IMT), Mexico

G. Pérez-Salas
ECLAC - United Nations, Chile

ABSTRACT

Contemporary prosperity depends on effective and secure supply chain networks that support economic competitiveness. Disruptions in global supply chains would have critical consequences on economies. The lack of technical studies and quantitative data concerning security that affects supply chain operations in Latin America, motivated to develop an exploratory study. Considering the complexity of the question studied, this paper details a set of case studies that explore, from a qualitative research approach, to what extent fulfilling security international standards now necessary to access mature markets such as the U.S and Canada allows export companies located in emerging countries as Mexico to face effectively the different types and levels of local risk. These results should help both academics and practitioners to more readily understand, first, the key logistics components now taken into account when improving security in export-oriented supply chains is required, and second, decision-makers' perspectives regarding supply chain security standards (SCSS) available on the market. A discussion of results is exposed and finally, discussion and future research are presented.

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INTRODUCTION

During the last decade, Mexico and other Latin American emerging countries, logistics systems have experienced a dynamic change. Several years ago, in many countries there was a low perception of risk in supply chains - especially insecurity - as an important element of competitiveness (Giunipero & Eltantawy 2003). However, currently in emerging markets as Mexico, the Private Sector's Centre for Economic Studies (CEESP) affirms that the cost of insecurity exceeds 15 per cent of gross domestic product (GDP). In this sense, according to the Mexican Association of Insurance Institutions (AMIS), approximately 10,000 transportation vehicles are robbed annually. Furthermore, AMIS notes that from 2006 to 2010, transportation vehicle thefts increased 108 percent (Cruz 2011). Consequently, since theft and other felonies on Mexican highways, the cost of transportation services increased 40 per cent (Cervantes 2011), forcing companies to change operation systems driving toward multimodal approaches (Jiménez & De la Torre 2011).

Actually, security deficits at national and regional levels (in North America and Latin America) and the current lack of a risk management approach when designing supply chains lead to a loss of regional competitiveness because of operational costs for cargo owners and transportation service providers. At the same time, the reputation of freight companies is damaged since stolen products are often sold on black markets without control or traceability. Thus, as security costs increase, direct and indirect costs of freight transportation increase due to preventive measures that have to be taken, resulting in investments and additional costs (Hintsa et al. 2010). Moreover, there is a strong impact on the performance of various actors caused by delays and noncompliance with clients, generating greater variability in delivery schedules that also generate greater financial costs for want of higher levels of safety stock.

In this context, since we observe a broad variety of definitions on how supply chain security (SCS) should be analysed, our research adopts the definition proposed by Closs and McGarrell (2004, pg. 8):

Supply chain security management is the application of policies, procedures, and technology to protect supply chain assets (product, facilities, equipment, information, and personnel) from theft, damage, or terrorism, and to prevent the introduction of unauthorized contraband, people, or weapons of mass destruction into the supply chain.

In this sense, the purpose of this paper is to identify to what extent fulfilling security international standards now necessary to access mature markets such as the U.S and Canada allows export companies located in emerging countries as Mexico to face effectively the different types and levels of local risk. These results should help both academics and practitioners to more readily understand, first, the key logistics components now taken into account when improving security in export-oriented supply chains is required, and second, decision-makers' perspectives regarding supply chain security standards (SCSS) available in the market (see Table 1 in Appendix).

While there is much published research on security supply chain and risk management, research on how international security practices approved to promote safe global trade also respond to the local security needs of companies located in emerging markets has largely been ignored. By studying the case of export-oriented Mexican companies facing important security challenges at a local level, we gained greater insight into factors as: i) Guidelines about current security policies and practices; ii) Level of added value provided by current security initiatives (public and private); and iii) Future security issues impacting supply chain design.