

Chapter 4

Logistics Geostrategy as a Decision Factor to Locate a Multimodal Logistics Platform

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ABSTRACT

The objective of this chapter is to study some geographical aspects that in one way or another influence decisions, such as finding the best place to locate a Multimodal Logistics Platform (MLP), without neglecting the consideration of other factors affecting decisions of locating infrastructure, such as economics, politics and environment. The first step, is studying all the geographical aspects: physical space, weather, topography and other factors that indirectly affect the reliable operation of this kind of logistics infrastructure. This study investigates the use of the quantitative method of “Weighting factors” to evaluate every one of the mentioned factors; the method will be evaluated by a group of experts in the field, who will define the geographic aspects that really influence the decision to locate an MLP. To check the result, a nonparametric statistics test named U of Mann-Whitney will be used. The case will be first applied to compare two countries: Mexico and Panama. It is the first of a series of logistical studies to decide on the best country to locate an MLP.

INTRODUCTION

The development of multimodal infrastructure has been instrumental in commercial integration and in particular to support the complex patterns of exchange inventory on a scale never before seen. To support these complex patterns, integration maritime, land and air modes have been fundamental for the good performance of these networks. In developed economies, port development and, in particular, the development of logistics platforms have been a crucial element to face this challenge (Leal & Pérez-Salas, 2009).

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To install the logistical platforms should begin their studies with an analysis of the location of strategic areas (Departamento Nacional de Planeación, 2013). Few authors have done studies on logistics geostrategy (Coró & D'Agostino, 2001; Rodrigue, Comtois & Slack, 2006; Long, 2008; Morales-Gil, 2010; Correa de Carvalho, Henriques de Carvalho & Fontes-Lima, 2010).

The importance of studying logistics geostrategy is based on analysis of the location and / or transportation of goods. Aspects to study geography in logistics are the terrain analysis, the geographical location of countries and cities with which have international trade, the gap between physical infrastructure (such as ports, airports, roads, railways, among others) and the distances between institutional infrastructure (DCs, Logistics Platforms [LP], customs agencies, among others) [Rodriguez et.al, 2013a].

The methods used to determine where to locate logistics platforms, are variable. For example, Costa, Nassi and Ribeiro (2013) used the Geography Information System (GIS), while Correa de Carvalho et.al, used the "Data Envelopment Analysis".

In this chapter, to evaluate each geographic aspect, the Weighting Factors Method will be used through a comparative table, geography aspects will be evaluated as Atlantic and/or Pacific territorial topography plane and/or mountain, road, rail, fluvial, maritime and air networks. In the same way, a contribution is made of the following aspects considered crucial to make geostrategic diagnosis such as: territorial extension, seasonality, geographic location, populated territory, Lake Network, maximum distance and transit time between littoral, subcontinents geographical connectivity (North, Central, and South) and shared borders and multimodal corridors, that will help to identify the advantages and disadvantages of the geostrategic situation, in this case, applied to two countries: Mexico and Panama.

Those countries were identified as strategic to locate a logistics platform in America after making the Panama Invest 2011 and the First International Forum "Mexico, the Latin America logistic platform" in 2011.

The method will be evaluated by a group of experts in the field of logistics geostrategy and geography through a survey containing the necessary information to evaluate each aspect and using the nonparametric statistical test Mann-Whitney U, the average hypothesis is checked, because the sample size is small.

SCOPE AND DEFINITIONS

Concept of Logistics Geostrategy

Although some authors linked the geopolitics and geostrategy to the military field, war strategies and policies (Rosales, 2005; Correia, 2004), the Real Academia de la Lengua Española (RAE, 2012) defined geostrategy as "the study of the influence of geography on strategy", other authors also take the concept of geostrategy to apply it to the commercial field. Palazuelos (2008) says that "global geostrategy, is the crossroad of the various strategies developed by major countries acting as plaintiffs and others like suppliers".

Logistics Geostrategy and Method of Weighted Factors

The method of weighted factors in the field of logistics, has been used in studies to choose the brand of a truck purchased for a transportation company, and considering within their selection variables fac-

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