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# Challenges and Innovation Opportunities in Load Multimodal Transport - LMT in Brazil: cluster technique application as a support tool for Decision Making

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#### Abstract

Although technological advances have contributed to integration of modes, the Load Multimodal Transport - LMT is a topic poorly developed in literature. In Brazil, despite the Multimodal legislation existing since 1998, through the law No. 9611, the multimodality is not yet a reality. In spite of there are obstacles to the practice in Brazil, the identification and characterization of Loads Multimodal Transport Operators - MTO is essential, since they are from different sectors, reflecting thus heterogeneity. This heterogeneity observed and diagnosed to serve as element of decision-making for formulating politic policies. In this regard, this paper is to emphasize the perception of MTO, about the possible obstacles to the exercise of their activity in Brazil, using as methodological option the use of cluster technique. The results signalled to new public policies in order to minimize the deficiencies in terms of modal integration, both physical and operational point of view, but also legal aspects to develop ways to effectiveness gain in multimodal system configuration in Brazil.

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Keywords: Logistic; Freight Transport; Multimodal Transport; Clusters; Implementation Issues

#### 1. Introduction

Does a fact the integration of the world economy makes companies from different sectors of the economy need to improve their systems constantly, including the logistics system. In this regard, the improvement of the supply of transport services is particularly interesting instrument in building competitiveness.

According to Ballou (1995), for most industries, the transportation is the most important logistic activity, since it absorbs, on average, between one and two thirds of the logistics costs. The evolution of the transport operation requires, in turn, strategic vision, new investments, actions differentiated in the competitive market and management concepts focused on rationalizing their services.

In the context described above, with great force arises a global trend to adopt solutions involving the practice of using more than one mode of transportation. These systems offer generally a diversity of transportation options, enabling capable alternatives to cater to different requirements of load segments. Nevertheless, for the development of these systems is necessary to redefine the planning method. Systems such as "just-in-time", which require minimum inventory, shorter lead times and higher reliability, created a need for adaptation (Aguilera et al. 2015).

For Rocha (2001), the search for greater competitiveness a way to add value is through the services. Intermodal and multimodal transport systems have as a major goal the revitalization of the source operations until the load destination. Thus, the load movement that uses more than one mode of transport can generate different concepts based mainly on its operating characteristics or related to contractual responsibilities of the parties involved.

The multimodal transport was defined by the Geneva Convention of 1980 (UN cited Singsuwan, M., 2011), in the international context as freight transport by at least two different modes of transport, using the multimodal transport contract from a local in a country where the load is placed under the responsibility of the multimodal transport operator to a place in another country designated to deliver the loads. The main difference of multimodal transport in relation to intermodal is that intermodal needs different documents for each involved transportation. This results in higher cost and time; furthermore, transport logistics suffer modifications in the order of responsibilities and the division is a term of the used Incoterms in the negotiation of each mode (ANTT, 2011).

According Maia *et al* (2011), with the repeal of law No 6.288, of December 11, 1975, and Decree n°. 80.145 of 15 August 1977, the term "intermodal transport" ceased to exist in the legal aspect. However, still lacks clear delineation of conceptual differences in tax laws between the terms "Intermodal Transport", as can be seen in Table 1 below:

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