An Extended Framework for Development of a National Logistics Performance Management System

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ABSTRACT

Due to the rapid and increasing integration of national markets, more and more countries are adopting some form of a logistics development policy. Even though a key aspect of success in logistics systems improvement is an efficient performance management system, a systematic analysis of national logistics performance management systems has attracted limited attention in academic literature. In this article, the author constructs a conceptual framework model which focuses on a holistic and integrated model of national logistics performance management. The intention is to provide a tool which enables the correct deployment of national strategies to logistics policies and to present a template to help describing the key aspects of design and operation of national logistics performance management systems.

KEYWORDS

Logistics Strategy, National Logistics Performance, National Markets, Performance Management Framework

INTRODUCTION

Efficiency of transport systems and industry profitability are closely related. Inventory reduction through high turnover, ability to respond to a highly volatile demand, short lead times and achieving lowest possible transportation costs are essential for competitiveness of companies. As a result of the expansion of supply chain networks globally in today’s business environment, the geographies, regulations, and ecosystems associated with different countries have increased the complexity associated with logistics networks (Rienkhemaniyom & Ravindran, 2014). For this reason, transportation system is considered as a production factor and as one of the key determinants of facility location choice. Transport infrastructure has a significant impact on the productivity and the cost structure of private firms (Haughwout, 2001). For example, better port and hinterland connection may reduce expenditure caused by the construction of distribution network or by the transport of raw materials. Empirical studies show that foreign direct investment is more attracted to areas where the transportation systems are more efficient (Saidi and Hammami, 2011). As a result, a good logistics system, which works well, is a cornerstone of a prosperous economy with a good attraction of foreign investment. Since business competitiveness can be enhanced through cost reductions and service improvements in

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logistics activities, it is important that companies and governments be competent in measuring logistics related performance. Moreover, a performance management system is multifunctional. Information on logistics performance is used for several purposes by several actors. It is one of the main sources for investment analysis, policy evaluation and planning, budgetary decision-making, and country or regional level comparative analysis. The comparative efficiency of a country’s logistics chain has a vital importance in attracting investment and enhancing industrial competitiveness. For improving the national comparative efficiency, considerable changes in the way governments organize themselves and how they utilize performance management systems to respond to industry requirements including and addressing the goals of all stakeholders involved are required (Pimenidis and Georgiadas, 2014).

The objective of this paper is to present the general structure of a structured framework for national level logistics performance measurement. Our intention is to provide a perspective more focused on a holistic and integrated model of logistics performance management, which enables the correct deployment of national strategies as well as providing a tool to study the design and operation of national logistics performance management systems by providing a template to help describe the key aspects of such systems. The framework suggests a number of issues to be considered in designing and operating a control system, rather than adopting a prescriptive approach based on an ‘ideal model’. It aims to illustrate a broad view of the key aspects of logistics performance measurement and to form the basis upon which further investigations can be developed. The approach followed has been to extend a number of toolkits available for national level performance measurement and management in field of logistics such as the World Bank’s toolkit (The World Bank, 2011). It provides a means of quickly outlining the main features of logistics performance assessment system in a comprehensive manner, and the ways in which it is used in the context of understanding the drivers of logistics performance in a specific country.

NATIONAL LOGISTICS PERFORMANCE ASSESSMENT

Despite the extent of literature on logistics performance measurement in micro level, the current state of research on the macro level logistics performance assessment has not been covered adequately. Majority of the existing studies evaluate and use logistics performance indicators to examine the effect of logistics performance on trade. There exist different strategies for measuring logistics performance depending on the level of aggregation, approaches, and objectives. Development of an effective systematically approach to performance measurement is challenging because there is no single entity on performance. Accordingly, although logistics performance indicators can be evaluated in various ways, in general they fall into one of two categories (Arun, 2015). The first category of indicators includes costs consumed in carrying out logistics activities, and the second category includes service indicators, which implies the results of logistics activities.

Rodrigues et al. (2005) provided an estimation method to quantify the size of logistics expenditures in a global economy by using secondary data between 1992 and 2003 and neural network methodology. Their model is based on four pillars: total GDP, government sector production, industrial-sector production and the total trade ratio. McKinnon (2009) assessed the first ten years of the UK Government’s “transport key performance indicator (KPI)” program which benchmarks the efficiency of road freight operations. Gupta et al. (2011) measured the extent of restrictions on trade in logistics services in the ASEAN+6 economies, through the construction of a logistics regulatory restrictiveness index. They also conducted a preliminary exploration of the correlation between logistics regulatory restrictiveness and logistics sector performance, as measured by the LPI. Balan et al. (2006) formulated a Supply Chain Management Index (SCMI) with the help of questionnaire survey and analysis over 26 countries from all over the world which were selected randomly on the basis of their economic growth (GDP) in the global market. However, neither details of this index nor the development method has been provided. Cooper et al. (1990), with an emphasis upon the users of logistical services, used five key indicators to develop a picture of logistics efficiency in
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