

A Combined Approach of Analytic Hierarchy Process and Decision-Making Trial and Evaluation Laboratory Methods for Evaluating Key Success Factors of Third-Party Logistics Service Providers

Theruwanda Perera, Annista Wijayanayake and Ruwan Wickramarachchi

Department of Industrial Management

University of Kelaniya, Sri Lanka

pereradg_im15025@stu.kln.ac.lk , anni@kln.ac.lk* , ruwan@kln.ac.lk

Abstract

This study aims to evaluate key success factors associated with the third-party logistics (3PL) service providers in Sri Lanka. This study used the systematic literature review and expert's opinion to identify the key success factors of third-party logistics industry in Sri Lanka. In total, 20 key success factors were obtained, and those key success factors were grouped into four categories as organization strategy, management and process, human resources and customer orientation. The study used the Q-sort technique to group key success factors into four categories and Analytic Hierarchy Process (AHP) to identify the priorities of the key success factors. Decision Making Trial and Evaluation Laboratory (DEMATEL) method used to identify the interrelationships among the key success factors in each category. The result shows that business expansion, technology and automation, internationalization of operations, management and leadership style are the most important key success factors in the Sri Lankan third-party logistics industry. The outcomes of this study can help managers/practitioners to formulate flexible decision strategies for better performance in their third-party logistics firms and experience a competitive advantage against the competitors.

Keywords

Key success factors, 3PL, AHP and DEMATEL.

1. Introduction

According to the Council of Supply Chain Management professionals, Third-Party Logistics (3PL) means a firm provides multiple logistics services for use by customers. Many companies seeking integrated logistics services tend to be partnered with large 3PL firms to reduce costs (Kersten and Koch, 2010), improve product quality (Bardhan et al., 2006), improve flexibility (Lau and Zhang, 2006). Logistics management activities typically include planning, implementing and controlling the transportation, warehousing, inventory management and control, order processing, information systems and packaging (Makmor et al., 2019).

Sri Lankan 3PL service providers also provide many services for their clients. However, this sector is also facing challenges in Sri Lanka such as poor infrastructure, insufficient use of technology and innovation, system incompatibility, limited-service offerings, lack of skilled workforce, lack of information sharing, high cost of operations and lack of trust. Compared to other countries, Sri Lanka has still not achieved the standard level of 3PL industry. Therefore, identifying the key success factors in 3PL industry is very important and it is necessary to prioritize those key success factors to increase the quality of the logistics enterprises' performances.

Many researchers have done their studies related to key success factors of 3PL industry in their countries. But there has been no comprehensive study that has focused on key success factors of 3PL industry in Sri Lanka. This will be the first study in Sri Lanka that focuses on key success factors in 3PL industry. Most of the studies have identified dependency relationships among key success factors and performance measures in 3PL industry but very limited researches have been done to identify the priorities of the key success factors in 3PL industry.