A Study on the Relationship between Sustainable Logistics Practices and Operational Performance of FMCG industry in Sri Lanka

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ABSTRACT

Degradation of environmental quality has become a global issue. Industrial activity is a major cause of environmental destruction. Increasing environment cost of these networks and consumer pressure for eco-friendly products has led organizations to look at supply chain sustainability as a new measure of profitable logistics management. The development and use of innovative green logistics practices can be a solution to reduce the impact of environmental issues due to activities of Fast Moving Consumer Goods (FMCG) industry. Adoption of sustainable logistics practices in the FMCG industry is an interesting area since it deals with optimization of production processes, increasing service levels, reduction of product costs and maximizing customer satisfaction, which characterize the FMCG industry. This paper has analysed the relationship between sustainable logistics practices and operational performance in the FMCG industry in Sri Lanka. It is based on the research question 'What is the relationship between use of sustainable logistics practices and operational performance of FMCG industry in Sri Lanka?' The core objective was to analyse whether sustainable logistics practices have a relationship with operational performance of FMCG industry in Sri Lanka. The independent variables were sustainable transportation, sustainable distribution, green purchasing and green warehousing. The dependent variable was operational performance. A sample of 35 FMCG manufacturing companies were selected from the Western province as many FMCG organizations are situated there. Primary data collection was done through a questionnaire constructed through an extensive literature review and responses were captured through a 5 point Likert scale. In the analysis, a KMO test value of 0.794 was obtained and Cronchbac alpha value was 0.852. The Correlation analysis was done. The results show that sustainable transportation, green purchasing practices, sustainable distribution practices and green warehousing all have positive relationships with operational performance. Out of these only green warehousing and sustainable transport have a strong positive relationship with operational performance.

Keywords: FMCG industry, Logistics practices, Operational performance, Sustainability

Introduction and research problem/issue

Logistics is used to describe the transport, storage, and handling of products from the source of raw material to the point of consumption along the supply chain. The environmental implications of logistics activities are diverse and can occur throughout the supply chain. In today's dynamic business environment, sustainable logistics plays a major role in business performance. Sustainable logistics creates opportunities and offers competitive advantage for early adopters and innovators. When discussing about FMCG products, they have a short life span, either as a result of high consumer demand or because of rapid product deterioration. FMCG can be divided into two main categories as, durable goods and nondurable goods. Sustainability means being eco-friendly while reducing risk, waste, cost and minimum usage of scarce resources, thinking of the resource requirements of future generations. Sustainability can be broadly categorized into three aspects as social, environmental and economic. Operational performance can be considered in many different ways out of which 'efficiency' has been used in this study.

Therefore, this study has focused on sustainable logistics practices and the relationship they have with efficiency of the operations of the organization.

The research gap can be identified as there is very little connection between sustainability and the FMCG industry in Sri Lanka and less research has focused on it. Most of these products do not come with eco-friendly packages and transportation is done in various types of vehicles which are sometimes not suitable for road usage. From the company perspective, in Sri Lanka, some of the FMCG manufacturing companies have a lesser concern about reducing the carbon footprint of their operation. Their objective is to achieve profit margins at any cost to society. Hence it is a major requirement of current business environment to integrate environmentally sound choices into logistics and supply chain management. In this research, the relationship that sustainable logistics practices have with operational performance of FMCG industry in Sri Lanka is analysed.

Research Methodology

The independent variables were sustainable transportation, sustainable distribution, green purchasing and green warehousing. The dependent variable was operational performance. A sample of 35 FMCG manufacturing companies were selected from the Western province as many of the FMCG organizations are situated in this province and a lot of manufacturing activity takes place in this province. As it is the most populated province it has the highest

demand for FMCG which results in more transport and distribution activities. 35 companies were selected as the background study revealed that only a limited number of companies were implementing sustainable logistics practices and others which are not using such practices could not be considered for this study. Therefore, only a limited number of organizations were suitable to be considered for the study. Primary data collection was done through a structured questionnaire. This was constructed through an extensive literature review of existing literature. The responses were captured through a 5 point Likert scale (1Strongly Disagree, 2 -Disagree, 3 - Neutral, 4 - Agree, 5 - Strongly Agree).

During the analysis, the Kaiser-Meyer-Olkin (KMO) and Bartlett's test was used to measure the sampling adequacy. The reliability test was conducted using the Cronbach Alpha value.
A KMO value of 0.794 and a Cronbach alpha value of 0.852 was obtained.

Results and findings

The sample adequacy was tested using the KMO and Bartlett's test and the following result was obtained. The KMO value of 0.794 depicts that the sample is adequate for the study. In the reliability test a Cronchbac alpha value of 0.852 was obtained which depicts the internal consistency of the data set gathered.

Thereafter the correlation analysis was done which resulted in the following results. The correlation between Sustainable transport and operational performance is 61.3%. The correlation between Green purchasing and operational performance is 55.8%. The correlation between Sustainable distribution and operational performance is 56.5%. The correlation between Green warehousing and operational performance is 68.2%.

Therefore, it can be observed that sustainable transport, green purchasing, sustainable distribution and green warehousing all have positive relationships with operational performance. Out of these practices two have strong positive relationships with operational performance. Those are sustainable transport practices and green warehousing practices. Therefore, implementing sustainable logistics practices in the Sri Lankan FMCG manufacturing industry will enhance the organization's operational performance in terms of operational efficiency. Out of sustainable logistics practices also, mainly practices related to sustainable transport and green warehousing should be focused on as they have a strong positive relationship with operational efficiency.

Under sustainable transport practices, consolidation of shipments, use of energy efficient vehicles, reduction of empty trips, efficient use of space of vehicles and use of large vehicles can be implemented as suitable for the organization. Under green warehousing practices, use

of sustainable building materials and concepts, use of energy saving methods, use of environmental friendly internal equipment/vehicles and environmental friendly disposal methods may be implemented.

Conclusions, implications and significance

It can be stated that all the independent variables considered in the study which are sustainable transportation, green purchasing, sustainable distribution and green warehousing have positive relationships with operational performance of organizations. It is important to note that out of those practices only sustainable transport practices and green warehousing practices have a strong positive relationship with operational performance. Therefore, it can be concluded that focusing on the increase and improvement of sustainable transport practices and green warehousing practices will help to improve operational performance.

As this study considered only private organizations for further research, public institutes can be researched on. Also the impact of sustainable logistics to improve operational performance other than efficiency can be studied.

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