

A Study on Environmental Sustainability Policies in the Road Freight Transportation Industry in Sri Lanka

E. M. Dinesha Hemamali Ekanayake
University of Moratuwa, Sri Lanka

Nishal A. Samarasekera
University of Moratuwa, Sri Lanka

1. Introduction

This research outlines the study of environmental sustainability policies in the road freight transportation industry in Sri Lanka. The aim of this research is to explore how far the road freight industry in Sri Lanka has implemented green transport solutions and investigate the relationship between the size of the business and variables such as the motives and barriers to implement environmental sustainability policies in the road freight transport industry in Sri Lanka.

2. Background of the Research

Environmental issues are becoming increasingly important and they are given more consideration in the overall strategy of organisations. As concerns for the environment rise, companies must realise the importance of the external costs associated with road freight transportation, mainly due to climate change, air pollution, noise, vibration and accidents. Therefore, more companies have concern for monitoring and tracking fuel consumption, purchasing more fuel-efficient vehicles, "green" procurement practices, experimenting with alternative fuels, reducing noise, reducing vehicle mileage operated, promoting freight consolidation initiatives within companies, limiting the speeds at which company vehicles are operated, qualifying fleet operators based upon their equipment and performance, sharing vehicles across multiple customers etc.

Within the supply chain, transportation is the largest source of environmental impact [1] and on an aggregate level, freight emissions account for roughly 8 per cent of worldwide energy-related carbon dioxide (CO₂) emissions [2]. As a result, policies that focus on the protection of the environment is continually being developed [3].

3. Significance of the Research

Many policy developments had been introduced worldwide which are concerned with reducing the negative impacts to the environment from freight transport operations. Identifying and quantifying the environmental sustainability policies implementation on the freight transport operation in Sri Lankan context is vital since it will depict the actual situation at present. Study of environmental sustainability policies is a very broad topic. Therefore, this research focuses on the study of environmental sustainability policies in the field of road freight transportation and not on the whole supply chain operations.

4. Data Collection

Data for this research were collected by a structured survey questionnaire forwarded to a convenient sample of large and medium scale logistics organisations in the business of road freight transport operations in Sri Lanka. Prior to preparation of the questionnaire, a comprehensive literature survey was carried out. Then the questionnaire was developed with the objective of targeting managerial personnel of the transportation sector of organisations. The questionnaire received responses from 37 individuals from the road freight transport industry in Sri Lanka.

5. Analysis & Results

As per the responses, all respondents had an environmental policy in their organisations. The identified barriers for implementation of such environmental policies are cost and business complexity. About 70 percent of respondents answered business complexity as the biggest barrier to implement environmental initiatives. Identified motives were: customer interest, competitive strategy, opportunity of growth, cost savings and sustainability of the environment.

Identified environmental sustainability policies were categorised as sub factors under four major categories: (i) Vehicles, (ii) Equipment and Operations, (iii) Facility, and (iv) Employees and Management. Most commonly used factors with respective to above four categories were (a) monitoring and tracking information on energy, (b) waste recycling and disposal, (c) conducting training programs for drivers ("eco-driving") and (d) usage of digital documents (using less paper).

As regards the measure of mean values of four categories, it appears that most of these values cluster around point two (medium level) on the specified scale. And one of the categories ("employee") scored a mean value around point three (high level) on the scale. None of the mean scores lie on the low side of the scale (point one), indicating that most of the respondents are using environmental sustainability practices at medium level or above. In calculating the overall mean values, all

variables have been taken into account for all respondents, and the mean value was then calculated for each category. To investigate the relationship between the size of the business (large and medium) and variables (barriers and motives), chi-square test was performed. The results revealed some significant relationships between those variables. It is indicated that when respondents answered for barriers and motives to the implementation of environmental sustainability policies, they were influenced by size of the organisation.

6. Limitations and Recommendations

Mainly large and medium-sized logistics organisations were included in the sample. However, smaller businesses might have different perceptions regarding the concern of environmental sustainability policies in road freight transport operations. Although the majority of respondents were managers, employees below manager level might have different perceptions regarding the implementation of environmentally sustainable policies, which are not captured in this research. For a future research it would be interesting to see if and how implementation of sustainable practices would change the strategy of a business.

References

1. Wu, H., & Dunn. (1995). Environmental responsible logistics systems.
2. Figueroa, M., Lah, O., Fulton, L., & McKinnon, A. (2010). Energy for Transport.
3. Brunoro, S. (2008). An assessment of energetic efficiency improvement of existing building development in Italy. *Management of Environmental Quality: An International Journal*.

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