

# **FACTORS INFLUENCING THE IMPLEMENTATION OF GREEN SUPPLY CHAIN MANAGEMENT PRACTICES IN A SUPERMARKET: A SRI LANKAN CASE**

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**ABSTRACT** - Green Supply Chain Management has emerged as one of the key industry trends in the supermarket sector. Adoption of Green Supply Chain Management in supermarkets is a challenging process that should be implemented along with many stakeholders such as manufacturers, suppliers, and customers. This study analyses the key influential factors for the implementation of Green Supply Chain Management practices in supermarkets. This study was carried out focusing on a leading supermarket chain in Sri Lanka. First, an extensive review of literature, and unstructured interviews with industry personnel were conducted to identify the key influential factors. Then, a questionnaire was distributed among the industry practitioners to rank the identified factors based on a Likert scale. Finally, this study shows seven key factors to consider when implementing Green Supply Chain practices in supermarkets.

**Keywords:** Green Supply Chain Management; Supermarkets; Factors Affecting GSCM; Factor Analysis

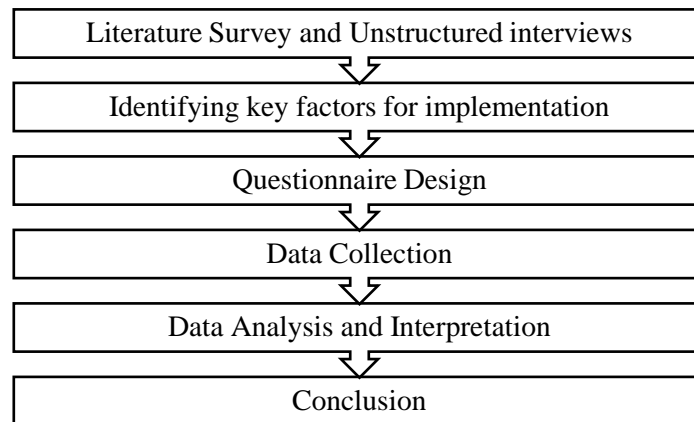
## **1. INTRODUCTION**

Green supply chain management (GSCM) has emerged as one of the most important organisational philosophies to reduce environmental risks [1]. Reference [2] states that “greening the supply chain is the process of incorporating environmental criteria or concerns into organisational purchasing decisions and long-term relationships with suppliers”. GSCM leads businesses to become more environmentally sensitive and to behave in an ethically and socially responsible way across their entire supply chain [3]. At present, GSCM has emerged as one of the key initiatives taken by many industries in Sri Lanka [4]. The supermarket industry is prominent among them. Facing emerging environmental challenges and severe business competition, supermarket chains in Sri Lanka have recognised the importance of implementing the “Green” concept in their business. However, only a few of them have practically implemented this [5], [6].

It is not only manufacturers and suppliers who are responsible to develop and supply products in an environmentally friendly manner into the market [7], [8]. Supermarkets also urgently need to be ecologically-minded stakeholders in GSCM and to prioritise adopting green practices. In other words, green companies need green markets [2]. As an industry, supermarkets are currently trying to adopt green supply chain practices that are not widely discussed in Sri Lanka. Thus, our paper provides an overview of the GSCM practices in the supermarket industry in Sri Lanka and identifies the key factors to consider when implementing GSCM practices.

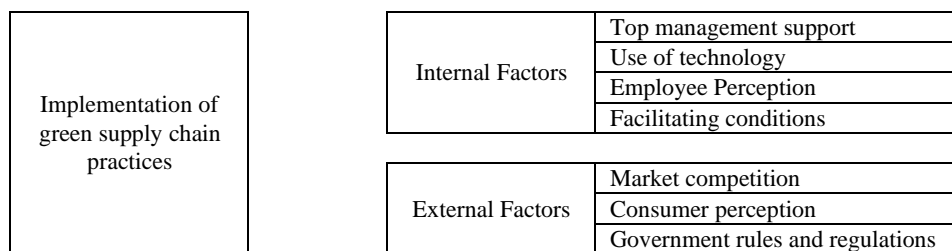
## 2. MATERIALS AND METHODS

Our research is based on a well-established supermarket based in Sri Lanka. Figure 1 depicts the research design of our study.



**Figure 4.** Research Design

First, we have conducted an extensive literature survey and unstructured interviews with relevant industry personnel to identify the GSCM implementation factors (Figure 2).



**Figure 5.** Theoretical Framework

The questionnaire was developed based on the factors identified in the first step. Then the questionnaire was emailed to operational staff and the executive staff. A total of 449 questionnaires were distributed and there were 14 cases where the questionnaire had been filled by inappropriate respondents and such data were removed from the data set. The importance of all the identified factors was asked to be ranked based on a Likert scale ranging from very low (1) to very high (5).

## 3. RESULTS AND DISCUSSION

The vast majority (59.65%) of the total staff sample has more than 10 years of experience in the company. However, only 35.62% are aware of the GSCM practices. Further, 66.16% stated that they have not received any training relating to the GSCM practices.

Currently, there are few GSCM practices practiced by supermarkets such as electricity management, water management, reducing polythene usage, waste management, eco-friendly marketing campaigns and promotion of reusable packaging. We have identified seven key reasons to implement GSCM practices; Market competition (MC), top management support (TMS), customer perception (CP), employee perception (EP), facilitating conditions (FC), government rules and regulations (GR), technology usage (TU) and the degree of implementation of GSCM.

We used SPSS statistical package for our analysis. All identified constructs have high reliability of more than 0.70 alpha value. First, the sum of the responses grouped for each factor was calculated. Then, using multiple linear regression, the relationships of the theoretical framework were calculated.

Path coefficient analysis was used to identify the relationship between of GSCM implementation each identified factor; MC ( $\beta = 0.847$ ,  $t \text{ value} = 22.405$ ,  $p < .001$ ), CP ( $\beta = 0.874$ ,  $t \text{ value} = 25.306$ ,  $p = .003$ ), GR ( $\beta = 0.957$ ,  $t \text{ value} = 46.286$ ,  $p = .015$ ), TMS ( $\beta = 0.978$ ,  $t \text{ value} = 66.092$ ,  $p = .012$ ), EP ( $\beta = 0.903$ ,  $t \text{ value} = 29.456$ ,  $p = .032$ ), FC ( $\beta = 0.828$ ,  $t \text{ value} = 12.273$ ,  $p < .001$ ) and TU ( $\beta = 0.950$ ,  $t \text{ value} = 34.129$ ,  $p = .043$ ). The results of path coefficient analysis depicts that all the identified factors have a positive impact on the GSCM practices.

#### 4. CONCLUSION

The supermarket industry in Sri Lanka is facing new challenges to implement GSCM. It has emerged as a new model for companies to achieve profit and their objectives by reducing their environmental risks and influences and while increasing their ecological efficiency. Our study presented an analysis to study the most important factors and issues on GSCM practices for the supermarket industry and has studied some different internal and external parameters which relate to the supermarket industry. Thus, supermarkets can focus on these key factors and implement the leading GSCM practices to reduce the ecological impacts of their activities. In our study, we only considered one supermarket chain in Sri Lanka. Thus, this research can be further extended for other leading supermarkets to get more accurate data on the entire business segment in the country.

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