



**GREEN SUPPLY CHAIN MANAGEMENT APPROACHES ON
SUSTAINABILITY PERFORMANCE IN TENAGA NASIONAL BERHAD**



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PERFORMANCE IN TENAGA NASIONAL BERHAD

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This thesis is submitted in partial fulfillment of the requirements for the award of
Bachelor of Technology Management (Supply Chain Management and Logistics) with
Honors






Faculty of Technology Management and Technopreneurship

Universiti Teknikal Malaysia Melaka

I hereby acknowledge that this project paper has been accepted as part of fulfillment for the degree of Bachelor of Technology Management (Supply Chain Management and Logistics) With Honors.

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DECLARATION OF ORIGINAL WORK

I hereby declare that all the work of this thesis entitled “GREEN SUPPLY CHAIN MANAGEMENT APPROACHES ON SUSTAINABILITY PERFORMANCE IN TENAGA NASIONAL BERHAD” is original done by me and no portion of the work encompassed in this research project proposal has been submitted in support of any application for any other degree or qualification of this or any other institute or university of learning.

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DEDICATION

I would like to appreciate the dedication of my beloved family members who educated me and motivate me to learn until degree level. And I express a deep sense of gratitude to my lecturer whom also my supervisor for my final year project, Dr. Nurhayati Binti Kamaruddin and my fellow friends. They have provided me fully support and advice throughout this research. Without their blessing and encouragement, this research is impossible to complete within short period of time.



ABSTRACT

Green supply chain management (GSCM) is not only about lowering the environmental impact of the supply chain, instead, it is about driving the creation of value across all supply chain businesses. In addition to reducing CO₂ emissions, GSCM can assist an organization in improving asset efficiency, reducing waste output, promoting innovation and lowering manufacturing costs, reusing raw materials, increasing profitability, and creating a consumer perception of added value. This study aims to determine the relationship between Green Supply Chain approaches such as environmental, economic, and social aspects and Tenaga Nasional Berhad's sustainability performance. The sample was picked using a random sampling technique from the population of employees of Menara Tenaga Nasional Berhad MITC Melaka. A five-point Likert Scale Questionnaire will be used to collect information from responders. Statistical Packages for Social Sciences are used to examine the survey data (SPSS). All independent factors, including environmental aspects, economic aspects, and social aspects, were found to have a significant relationship with Tenaga Nasional Berhad's sustainability performance. The outcome of this study is anticipated to contribute positively to Tenaga Nasional Berhad's sustainability performance.

Keywords: *Green supply chain management, environmental aspects, economic aspects, social aspects and sustainability performance.*

ABSTRAK

Pengurusan rantaian bekalan hijau bukan sahaja tentang mengurangkan kesan alam sekitar rantaian bekalan, sebaliknya, ia adalah mengenai memacu penciptaan nilai merentas semua perniagaan rantaian bekalan. Selain mengurangkan pelepasan CO₂, pengurusan rantaian bekalan boleh membantu organisasi dalam meningkatkan kecekapan aset, mengurangkan pengeluaran sisa, menggalakkan inovasi dan menurunkan kos pembuatan, menggunakan semula bahan mentah, meningkatkan keuntungan, dan mewujudkan persepsi pengguna terhadap nilai tambah. Kajian ini bertujuan untuk menentukan hubungan antara pendekatan Rantaian Bekalan Hijau seperti aspek alam sekitar, ekonomi, dan sosial dengan prestasi kelestarian Tenaga Nasional Berhad. Sampel dipilih menggunakan teknik persampelan rawak daripada populasi pekerja Menara Tenaga Nasional Berhad MITC Melaka. Soal Selidik Skala Likert lima mata akan digunakan untuk mengumpul maklumat daripada responden. Pakej Statistik untuk Sains Sosial digunakan untuk meneliti data tinjauan (SPSS). Kesemua faktor bebas, termasuk aspek persekitaran, aspek ekonomi, dan aspek sosial, didapati mempunyai hubungan yang signifikan dengan prestasi kemampuan Tenaga Nasional Berhad. Hasil kajian ini dijangka dapat menyumbang secara positif kepada prestasi kemampuan Tenaga Nasional Berhad.

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LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
GSCM	Green Supply Chain Management



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CHAPTER 1

INTRODUCTION

1.1 Introduction

An immediate threat to world sustainability has arisen as a result of rising temperatures and shifting biodiversity. Researchers, academics, practitioners, and scientists from around the world gathered to discuss how to keep the environment sustainable. Unplanned and irresponsible industrial actions are commonly cited as potential sustainability concerns. As a result, one of the most important goals of modern corporations is the development of long-term industries. It is imperative for organizations to play an important role and be concerned about the external environment in order to achieve greater sustainable goals, which is commonly referred to as "going green." (Tseng, Ming-Lang; Islam, Md Shamimul; Karia, Noorliza; Fauzi, Firdaus Ahmad; Afrin, Samina, 2019).

GSCM implementation is expected to reduce air pollutants, liquid waste, solid waste, and the consumption of harmful materials. Environmental sustainability initiatives, on the other hand, may or may not lead to greater market share and profitability. They are ultimately responsible for the success of their businesses. Managers in the supply chain and their own companies must work together to make decisions that benefit both groups at the same time. Managers need to go global before they can go localized. Organizational success is a direct result of a very well supply chain. Managers need to establish and implement environmental sustainability approaches that extend throughout the supply chain since customers and government organizations have come to expect environmentally friendly processes, products, and services. (Jr, Kenneth W. Green; Zelbst, Pamela J.; Meacham, Jeramy; Bhadauria, Vikram S., 2012).

This chapter will discuss about the green supply chain management approaches towards sustainable performance in Tenaga Nasional Berhad and their impact on environmental, social, and economy. The background of study, problem statement, research questions, research objectives, scope, and limitation of the study, significant of study, key concepts and summary will be discussed in this chapter.



1.2 Background of Study

Over two decades ago, most businesses and industries began implementing Green Supply Chain Management in an effort to decrease their negative effects on the environment. It is the goal of Tenaga Nasional Berhad's top supply chain management to successfully integrate the company's economic, environmental, and social sustainability goals. Supply chain management is the coordination and management of a network of complex operations involved in delivering a finished product to consumers, who are the end-users of the final product. It is defined as "green procurement, green production, green distribution, and reverse logistics." (Ninlawan C., Seksan P., Tossapol K., and Pilada W., 2010). Wastes include chemical and material wastes along the supply chain are being eliminated or reduced using GSCM. Tenaga Nasional Berhad has prioritized environmental issues as a result of government constraints and customer requests.

The world's long-term sustainability is in threat due to the acceleration of global warming and the resulting modification of biodiversity. An array of professionals and academics gathered to discuss how to keep the environment healthy for future generations. Unplanned and reckless acts by industries are commonly cited as a source of sustainability concerns. (Ninlawan C., Seksan P., Tossapol K., and Pilada W., 2010). One of the most significant goals of corporations nowadays is to develop sustainable industries. Tenaga Nasional Berhad must play a significant role and pay attention to the external environment if it is to achieve greater sustainable goals.

Tenaga Nasional Berhad and its customers can both benefit from and be harmed by implementing a green supply chain management strategy. In order to reduce environmental pollution and production costs, Tenaga Nasional Berhad employs supply chain management that adheres to environmental standards. An added benefit is that it improves the company's reputation and trustworthiness while also contributing to economic growth. In addition, Malaysia, our developed nation, has the potential to benefit from this new technology. There were no downsides or negative consequences of green supply chain management that Tenaga Nasional Berhad was able to uncover.

1.3 Problem Statement

The escalation of global warming and the alteration of biodiversity pose an immediate threat to the world's sustainability. Numerous persons, including researchers, academics, practitioners, and scientists, gathered in order to offer strategies for maintaining environmental sustainability. (Tseng, Ming-Lang; Islam, Md Shamimul; Karia, Noorliza; Fauzi, Firdaus Ahmad; Afrin, Samina (2019).

There has been an increase in articles discussing environmental concerns and the incorporation of green practices into the supply chain. This curiosity is mirrored in the worldwide initiatives by governments and organizations to lessen their negative effects on the environment and climate change. Environmental concerns have been increasingly factored into supply chain management (SCM), as stated by Laosirihongthong, Tritos; Adebajo, Dotun; and Choon Tan, Keah (2013). Since greening the supply chain has been identified as a major issue in SCM, there are still several areas of green supply chain management (GSCM) that require more investigation, despite its rising popularity in developed nations (Large and Thomsen, 2011; Kenneth et al., 2012).

Tseng, Ming-Lang; Islam, Md Shamimul; Karia, Noorliza; Fauzi, Firdaus Ahmad; Afrin, Samina, 2019) mentioned if the adoption of environmental sustainability results in environmental and economic trade-offs for supply chain partners or a win-win scenario, there are problems. There is a dearth of scientific research that studies this topic from a complete and integrated perspective that might serve as a foundation for both theory development and practice. The profitability of Tenaga Nasional Berhad as a result of applying green supply chain methods is also investigated.

GSCM has been the subject of several reviews in the literature. GSCM's methodological elements are rarely discussed, but specific practices and aspects are frequently brought up in the publications. Many authors fail to examine the intersection of 'green' and 'sustainable' supply chains when examining GSCM research, and few authors seek to address bigger aspects of GSCM literature. (Tseng, Ming-Lang; Islam, Md Shamimul; Karia, Noorliza; Fauzi, Firdaus Ahmad; Afrin, Samina, 2019).

1.4 Research Questions

The researcher determined two research questions in this study:

- i. What are the impacts of implementing green supply chain management approaches on Tenaga Nasional Berhad?
- ii. What is the best aspects used by Tenaga Nasional Berhad in maintaining their sustainability performance?

1.5 Research Objectives

In this research, there are two research objectives to be figured out:

- i. To investigate the effect of green supply chain management approaches on sustainability performance.
- ii. To figure out the relationship between Green Supply Chain Management approaches towards sustainability performance.

1.6 Scope and Limitation of the Study

This research study examines the effects of green supply chain management on the profitability of Tenaga Nasional Berhad. This survey will involve respondents from Tenaga Nasional Berhad branches in MITC Melaka. The respondents will be selected management and employees at random for this research report. This research paper will be conducted by having a survey via google form with the targeted respondents in Tenaga Nasional Berhad.

The researcher cannot focus on every manager and worker at Tenaga Nasional Berhad. In addition, the researcher faced time constraints during the course of the investigation. The research was limited by time constraints, as the study had to be completed in just 11 months. In addition, the lack of existing research articles on the chosen topic allowed for additional analysis to be conducted for this research article.

1.7 Significant of Study

Tenaga Nasional Berhad, for example, benefited from the study's findings because it used green supply chain management. Organizational sustainability and green supply chain management approaches will become easier to them. Tenaga Nasional Berhad can also gain a better understanding of green supply chain management and its profitability as a result of this research. For future academics, the study contributes to the knowledge base about how green supply chain management affects a company's performance, therefore providing empirical literature sources.

1.8 Key Concepts

This study project's objectives were established by defining the concepts of supply chain, green supply chain, supply chain management, green supply chain management methods, and sustainability performance. The following section describe about the application of these words to this study effort.

1.8.1 Supply Chain

For a product to reach its final customer, it must be manufactured and distributed through a supply chain. Many actions, individuals, companies, data, and resources are included in this network. It also shows how a product or service is transported from its origin all the way to the customer.

1.8.2 Green Supply Chain

In the context of sustainable supply chain management, including reverse logistics, GSCM is characterized as incorporating environmental issues into inter-organizational processes. As a general rule, there is no single, all-encompassing definition of GSCM, hence it is difficult to explain it. (Tseng, Ming-Lang; Islam, Md Shamimul; Karia, Noorliza; Fauzi, Firdaus Ahmad; Afrin, Samina, 2019).

Sustainable environmental practices are implemented into the traditional supply chain as part of green supply chain management (GSCM). This includes product design, material selection, manufacture, and production, as well as operation and administration of the product at the end of its useful life. Green supply chain management (GSCM) is not just about reducing the environmental impact of the supply chain; instead, it is about driving value creation across all supply chain businesses. In addition to reducing CO₂ emissions, GSCM can help an organization improve asset efficiency, reduce waste output, promote innovation and cut production costs, reuse raw materials, raise profitability, and create a perception of added value for customers, among other benefits.

1.8.3 Supply Chain Management

Managing of a supply chain is the coordination and management of a complex network of operations involved in the delivery of a finished product to an end-user or consumer. A vital company function, it includes purchasing raw materials and components, manufacturing and assembling products, storage and order entry and tracking, distribution through various channels, and customer delivery. internal and external operations, distributors, and customers make form a corporation's supply chain (commercial or end-user).

1.8.4 Green Supply Chain Management Practices

Studies in developed countries show how organizations have been pushed by institutional standards to improve their competitiveness by implementing environmental practices or GSCM. Institutional restrictions stemming from market and regulatory regulations are a significant factor in the rise in green practices. Manufacturers and those in developing economies are nonetheless quite concerned about the state of the economy. Numerous studies have attempted to demonstrate a link between GSCM techniques and the success of a business (Laosirihongthong, Tritos; Adebajo, Dotun; Choon Tan, Keah, 2013).

1.8.4.1 Environmental Aspects

The environmental impact of an organization's activities is addressed by this element. Environmental challenges within Tenaga Nasional Berhad's scope must be identified in order to better understand the core environmental problems and develop effective solutions (such as production, transportation, procurement its services). By releasing hazardous wastes into the air, water, and land, Tenaga Nasional Berhad pollutes the environment to meet consumer demand (Azapagic, 2003). An organization's ability to reduce pollution, waste, hazardous substance use, and environmental incidents is measured by its environmental performance (Yildiz ankaya, Sibel; Sezen, Bulent, 2018).

1.8.4.2 Social Aspects

There are numerous dimensions to social issues, such as community, charitable work, safety, human rights, workplaces, socially responsible and cause-related marketing, employment, and manufacturing processes that are process-related aspects of operations that have an impact on human well-being and community development (Klassen and Vereecke, 2012).

1.8.4.3 Economic Aspects

According to (Mohd Faiz Mokhtar, 2016), Solow's (1974, 1986, 1993) enlarged theory of capital convertibility and the Hicks-Lindahl idea of maximum income, which can be reached by saving essential wealth (capital) resources for future generations, serve as the foundations for the economic sustainability component (implementing the principle of fair distribution among generations). A sustainable economy is one that maximizes profit and consumption for the benefit of the business.

The removal of wastes is a key component of environmentally friendly operations. In truth, reducing waste will also cut costs and enhance the financial performance of the company instantly. (Rehman Khan, Syed Abdul; Zhang, Yu; Anees, Muhammad; Golpîra, Hêriş; Lahmar, Arij; Qianli, Dong, 2018).

1.8.5 Sustainability Performance

A company's long-term ability to meet the needs and expectations of customers and other stakeholders is referred to as "sustained performance," and it is achieved through a combination of a strong organizational structure, training and education for employees, and new ideas. (Anca-Cristina Stanciu, Mihaela Constandache, Elena Condrea, 2014).

1.9 Summary

In conclusion, this chapter is discussed about the overview of the study. It discussed the background of the study, problem statement, research questions, research objectives, scope and limitation of the study, and significance of the study. In the coming chapter, the researcher will carry out the literature review of the study. The information will be broader and more understandable by audience.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

This chapter will examine the literature review and relevant theoretical model. The researcher discussed the tools for implementing green supply chain management and sustainability performance on Tenaga Nasional Berhad. By reading the relevant kinds of literature, the dependent variables and independent variables were defined. The literature review is required to develop a suitable research methodology method such as qualitative or quantitative research. At the end of this chapter, the proposed research framework can describe the theory and develop the hypothesis.

2.2. Supply Chain

A product must first be made and then passed through a series of distribution points within a supply chain before it can be sold to an individual consumer. This network is comprised of a great deal of activities, individuals, businesses, information, and resources. Additionally, it demonstrates how a product or service is conveyed from its point of origin all the way to the end user.

2.3 Green Supply Chain

As part of the green supply chain management initiative, environmentally responsible business practices are integrated into the conventional supply chain (GSCM). This comprises the design of the product, the choice of materials, the manufacture and production of the product, as well as the operation and administration of the product after its useful life has come to an end. Global supply chain management, often known as GSCM, is not simply about lowering the environmental effect of the supply chain; rather, it is about driving value creation across all of the enterprises that are involved in the supply chain. GSCM has many benefits, one of which is the reduction of CO₂ emissions. Other benefits include the improvement of asset efficiency, the reduction of waste output, the promotion of innovation and the reduction of production costs, the reuse of raw materials, an increase in profitability, and the creation of a perception of added value for customers.

2.4 Supply Chain Management

The coordination and management of a complicated network of operations aimed at giving a finished product to a customer or end user is known as supply chain management (SCM). Manufacturing, assembly, storage, order tracking, and distribution are all part of this crucial corporate operation. Customer delivery is also a part of this process. External suppliers, internal operations, external distributors, and customers make form the structure of a company's supply chain (commercial or end-user). Firms can participate in multiple supply chains at the same time. Dispersion of global actors across different time zones and geographical boundaries makes administration and coordination more challenging. In addition, factors such as globalization, information technology, government regulation, competitiveness, and the environment all play a role in supply chain management.