THE RELATIONSHIP BETWEEN GREEN SUPPLY CHAIN INTEGRATION AND SUSTAINABLE PERFORMANCE

By

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DECLARATION

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ABSTRACT

Green supply chain management (GSCM) has recently emerged to comply with regulations for environmental protection as a result of increasing environmental concerns over the past decades. Since manufacturing companies have often been charged for the environmental liabilities of their suppliers, there has been urgency for integration of environmental initiatives, not only within the walls of the company, but across the entire supply chain in order to ensure the company's sustainable performance. Consequently, Green Supply Chain Integration (GSCI) was introduced to integrate the environmental management practices within manufacturing companies, with the suppliers and the customers. However, there is lack of discoveries in terms of GSCI conceptualization. Therefore, this study was conducted to identify the relationship between Green Supply Chain Integration and sustainable performance. Specifically, the objective of this study is to examine the relationship between supplier integration, customer integration, internal integration, logistic integration, technology integration, and dimensions of sustainable performance namely economic, environmental, and social. A survey was conducted on ISO14001 Environmental Management System (EMS) certified manufacturing firms in Malaysia. A total of 107 questionnaires was completed by the respondents and considered to be appropriate for data analysis. The data was analyzed using Pearson's correlation analysis and multiple regression analysis. It was found that each variable in the GSCI is positively correlated with sustainable performance. Further investigation using multiple regression has shown that internal integration and technology integration to be the strongest predictors of sustainable performance. Apart from contribution to theoretical knowledge, the results would also be valuable in providing new insights to management in their environmental goals and sustaining successful performance within the pressures of stakeholders, customers, and environmental regulations.

Keywords: Green supply chain management, green supply chain integration, ISO 14001 Environmental Management System, supplier integration, customer integration, internal integration, logistic integration, technology integration, sustainable performance.

ABSTRAK

Pengurusan rantaian bekalan hijau kini adalah satu inisiatif terhadap perlindungan alam sekitar akibat daripada peningkatan masalah membabitkan alam sekitar sejak beberapa dekad yang lalu. Oleh kerana firma pembuatan sering dikenakan denda di atas liabiliti alam sekitar yang dilakukan pembekal mereka, wujudnya tekanan terhadap proses integrasi dalam pengurusan alam sekitar. Proses integrasi ini bukan sahaja melibatkan integrasi dalaman, malah turut membabitkan penglibatan secara menyeluruh dalam rantaian bekalan bagi memastikan prestasi mampan firma pembuatan. Sehubungan itu, integrasi rantaian bekalan hijau telah diperkenalkan untuk mengintegrasikan amalan pengurusan alam sekitar di dalam firma pembuatan, juga bersama dengan pihak pembekal dan pihak pelanggan. Walau bagaimanapun, masih terdapat kekurangan dari segi penemuan terhadap integrasi bekalan rantaian hijau secara konseptual. Lantaran itu, kajian ini dijalankan untuk mengenal pasti hubungan di antara integrasi rantaian bekalan hijau dan prestasi mampan. Secara khususnya, objektif kajian ini bertujuan untuk mengkaji hubungan di antara integrasi pembekal, integrasi pelanggan, integrasi dalaman, integrasi logistik, integrasi teknologi, dengan dimensi-dimensi prestasi mampan iaitu ekonomi, alam sekitar, dan sosial. Satu kaji selidik telah dijalankan terhadap firma pembuatan yang mempunyai pengiktirafan Sistem Pengurusan Alam Sekitar ISO14001 di Malaysia. Sebanyak 107 soal selidik telah dilengkapkan oleh responden dan dianggap sesuai untuk penganalisaan data. Data yang diperoleh dianalisis menggunakan analisis korelasi Pearson dan analisis regresi berbilang. Keputusan kajian mendapati bahawa setiap pemboleh ubah dalam integrasi rantaian bekalan hijau mempunyai hubungan yang positif dengan prestasi mampan. Siasatan lanjut menggunakan kaedah regresi berbilang menunjukkan bahawa integrasi dalaman dan integrasi teknologi menjadi peramal terkuat bagi prestasi mampan. Selain daripada sumbangan kepada pengetahuan teori, keputusan yang diperoleh juga amat penting dalam mencapai matlamat pengurusan alam sekitar dan mengekalkan prestasi organisasi yang baik, berikutan daripada tekanan daripada pihak berkepentingan, pelanggan, dan peraturan alam sekitar.

Kata Kunci: Pengurusan rantaian bekalan hijau, integrasi rantaian bekalan hijau, Sistem Pengurusan Alam Sekitar ISO 14001, integrasi pembekal, integrasi pelanggan, integrasi dalaman, integrasi logistik, integrasi teknologi, prestasi mampan.

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MODEL

LIST OF ABBREVIATIONS

Abbreviation		Meaning
μ	=	Error term
B	=	Unstandardized beta coefficient
CI	=	Customer Integration
CO2	=	Carbon Dioxide
e.g.	=	that is
Eco	=	Economic
EMS	=	Environmental Management System
EnSP	=	Environmental Sustainable Performance
Env	=	Environmental
ESP	=	Economic Sustainable Performance
FMM	=	Federation of Malaysian Manufacturers
GEMI	=	Global Environmental Management Initiative
GLC	=	Government-Linked Company
GSCI	=	Green Supply Chain Integration
GSCM	=	Green Supply Chain Management
i	=	respondent 1 2 …… 107
IEA	=	International Energy Annual Report
II	=	Internal Integration
ISO	=	International Organization for Standardization
JV	=	Joint Venture
KeTTHA	=	Ministry of Energy, Green Technology, and Water
KMO	=	Kaiser-Meyer-Olkin Measure of Sampling Adequacy
LI	=	Logistic Integration
MNC	=	Multinational Company
MS	=	Malaysian Standard

N	=	Population
OECD	=	Organisation for Economic Co-operation and Development
OHSAS	=	Occupational Health and Safety Advisory Services
PCA	=	Principal Component Analysis
SCM	=	Supply Chain Management
SI	=	Supplier Integration
SIRIM	=	Standards and Industrial Research Institute of Malaysia
SP	=	Sustainable Performance
SPSS	=	Statistical Package for Social Science
SSP	=	Social Sustainable Performance
TI	=	Technology Integration
α	=	Intercepts (constant value)

CHAPTER ONE

INTRODUCTION

1. Research Background

Supply chain management (SCM) has received increasing attention from industrialists in light of strategic planning in design, maintenance, and operation of supply chain process. Despite the improvements that have been achieved successfully with the help of SCM, some organizations overlooked the environmental issues including global energy, global warming, reverse logistic, and ecological concerns in global competition. With the increasing environmental concerns over the past decades, green supply chain management (GSCM) has recently emerged to comply with regulations for environmental protection (Cheng and Sheu, 2012; Abdullah, Hassan, and Johari, 2014). In order to fulfill environmental obligations, organizations recognize that they cannot work in isolation. Since companies have often been charged for the environmental liabilities of their suppliers (Rao, 2008), there has been an urgency to integrate environmental initiatives, not only within the walls of the company, but across the entire supply chain in order to ensure the company's sustainable performance (Cote, Lopez, Marche, Perron, and Wright, 2008).

Business sustainable performance happens when a company or firm creates ongoing value for its stakeholders and shareholders while keeping up with environmental requirement (Brent' and Labuschagne', 2004). Sustainability is a brilliant way of

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