



UNIVERSITI PUTRA MALAYSIA

***SUSTAINABILITY PRACTICES IN MALAYSIAN GROCERY RETAIL
INDUSTRY***

GOWRI VIJAYAN

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INDUSTRY**

By

GOWRI VIJAYAN

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Dedicated to
My dear Appupan and Ammuma
Always in my memories



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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the Degree of Doctor of Philosophy

SUSTAINABILITY PRACTICES IN MALAYSIAN GROCERY RETAIL INDUSTRY

By

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October 2015

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Malaysia is in the midst of a nationwide green movement to combat the environmental problems plaguing the nation. Water pollution, air pollution, deforestation, soil and coastal erosion, overfishing, and solid waste mismanagement are some of the many problems faced by the nation. However, solid waste mismanagement has become a major environmental issue of concern to the government. Overflowing capacity of landfills, limited recycling centers, poor waste collection system, and weak policies on waste management elevate the seriousness of this situation. The Malaysian government's solution to this problem is shifting from depending solely on environmental policies to preventive steps for calculation and management of pollution, through holistic focus on introducing sustainability and 3R (reduce, reuse, recycle) campaigns to businesses and consumers. With the changing governmental stand towards environmental conservation, industries can no longer avoid getting into sustainability practices for their operations.

The grocery retail is one of the largest service industries in Malaysia, and also a major contributor to environmental pollution in the nation. The environmental effects from retail operations in this industry includes solid waste generation, energy use, water pollution, and air pollution. However, the grocery retail industry is in a unique position to also green its services. Retailers can effectively implement sustainability along upstream and downstream ends of supply chain. They are widely recognized as change-agents for introducing sustainability into supply chains. The retail stores can play a role in reducing food wastage, implementing better waste management practices, promotion of green products, while introducing more sustainability practices into the food supply chain. Thereby, it is imperative to understand sustainability as practiced in this industry.

However, the Malaysian grocery retail industry is heavily fragmented, with 56% provision stores, 43% hypermarkets and supermarkets, and 1% convenience stores. This fragmentation makes monitoring of sustainability both difficult and critical for sustainable development in the industry. It is essential to identify the practices that retail formats identify as sustainable, and to evaluate their level of sustainability based on its implementation. Specifically, the implementation of reverse logistics in the

Malaysian retail industry needs to be evaluated, due to its contribution to waste management among other benefits. Since business decisions on change often depends on value added benefits, the evaluation of contribution of sustainability to firm performance is critical for sustainable development. A study on mediation is critical to study the effect of intervening variables on sustainability implementation. The verification of such an effect could be used by regulatory bodies for policy development and evaluation.

The large concentration of provision stores in this industry (56%), followed by wide spread distribution across the nation makes it a critical agent to sustainable development in the industry. Also, the government's focus on Program Transformasi Kedai Runcit or Small Retailer Transformation Program (TUKAR) makes information on sustainability in provision stores critical. However, such studies on sustainability, focused across retail formats in the Malaysian grocery retail industry are limited. Especially since the grocery retail industry is fragmented, information on sustainability as understood and practiced by all the major retail formats is required to summarize on sustainability in the retail industry.

The current research was carried out to study the sustainability as implemented in this industry. A post-positivist approach was adopted in the study, incorporating the Stakeholder Theory to confirm the predictors to sustainability implementation in stores. The level of sustainability across retail formats were categorized using the Three Tiers Ranking System. Descriptive statistics was used to categorize the level of sustainability, environmental concern of retailers, and reverse logistics in stores. The influencers to sustainability implementation were identified across stakeholder pressure, CSR, economic, and environmental factors, and barriers that hinder sustainability in business. Mean ranking, confirmatory factor analysis (CFA), and mediation were used to evaluate and interpret all possible effects of these factors to eco-friendly and reverse logistics implementation in retail stores. The contributions of eco-friendly and reverse logistics to firm performance were evaluated for managerial implications using importance-performance matrix analysis (IPMA). The associative relationship between firmographic characteristics of retail stores and sustainability implementation across the formats were tested using chi-square analysis. Mediation analysis using bootstrapping method was used to estimate the effects of intervening variables to reverse logistics implementation and firm performance. Content analysis was used to verify the factors found significant to sustainability implementation in provision stores.

The study interviewed 375 respondents using a structured questionnaire to understand sustainability in the industry. The respondent stores included representatives from the four major retail formats, namely provision stores, supermarkets, hypermarkets, and convenience stores. The stores identified waste management issues, water crisis, and energy crisis to influence their store operations. Majority of the stores were found to be unfamiliar with the Malaysian government's Solid Waste and Public Cleansing Management Act 2007 (SWPCMA 2007), though 3R campaigns were familiar to them. Product take-back policy was adopted by majority of the retailers, mainly as per supplier instructions for returns.

The study showed that Tier 1 eco-friendly practices like reducing energy consumption and energy saving activities were mainly followed by the retail formats. The green

practices of local supplier support, green consumer research, and promotion of green products in stores were found to be highly practiced by hypermarkets, and supermarkets. Hypermarkets were the major practitioners of Tier 3 sustainability practices, followed by convenience stores.

The firmographic characteristics of store location, years of store operation, and annual sales were found to influence the implementation of sustainability in the retail industry. The predictors CSR and barriers to implementation were found to significantly influence the implementation of Tier 1 sustainability practices in retail stores. The predictors CSR, barriers, stakeholder pressure, and implementation of Tier 1 sustainability practices were found to significantly influence the implementation of reverse logistics practices by retail stores. The implementation of Tier 1 practices was found to contribute more to the firm performance. However, the implementation of reverse logistics practices were found to reduce the effect of Tier 1 practices to the firm performance. This could be because of increased resource commitment required for execution of the reverse logistics operations at the retail end of the supply chain. Since Tier 1 practices were found important to the firm performance, the implementation of reverse logistics could be considered a hindrance. But, it was found that reverse logistics contributed greatly to operational firm performance. Also, the implementation of Tier 1 practices was found to reduce the pressure on retailers to turn sustainable. This could be due to the familiarity among stakeholders on Tier 1 practices and its implications over reverse logistics. Therefore, in order to ensure reverse logistics implementation, the government has to develop specific policies for implementation of reverse logistics by grocery retail stores.

Content analysis revealed governmental, competitor, NGO pressures, and barriers to significantly influence the implementation of sustainability in provision stores. Provision stores focused on competitor practices to retain their markets, to meet consumer needs, and as temporary experts for sustainability adoption. Government played the most important role in influencing the implementation of reverse logistics practices in the provision stores. Therefore, the government could turn the provision stores green with stricter policies and economic incentives.

The study conducted a detailed evaluation of sustainability as implemented across retail formats. All possible interactions between interacting variables provided an insight into the relationship between intervening variables and their influence on sustainability. These observations could be used by regulatory bodies and top management for policy development. The Three Tier Ranking System used in this study could be used by other agencies to monitor the level of sustainability across retail formats. The academicians could use this study as a base for confirmation based and post-positivist research, and pave the way for extensive sustainability studies in the food sector. In the long run, the combination of increased academic awareness and specific policies could pave the way for voluntary practices and a greener, cleaner, and healthier Malaysia.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk Ijazah Doktor Falsafah

AMALAN KELESTARIAN DALAM INDUSTRI BARANGAN RUNCIT MALAYSIA

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Malaysia berada di tengah-tengah sebuah gerakan hijau dunia bagi memerangi masalah alam sekitar yang melanda negara. Pencemaran air, pencemaran udara, penebangan hutan, tanah dan hakisan pantai, penangkapan ikan secara berlebihan, dan salah urus sisa pepejal adalah beberapa masalah yang dihadapi oleh negara. Walau bagaimanapun, salah urus sisa pepejal telah menjadi isu utama alam sekitar yang penting kepada kerajaan. Kapasiti melimpah di tapak pelupusan, pusat kitar semula yang terhad, sistem pengumpulan sisa yang teruk, dan dasar-dasar pengurusan sisa yang lemah menunjukkan betapa seriusnya keadaan tersebut. Penyelesaian kerajaan Malaysia terhadap masalah ini beralih daripada hanya bergantung kepada dasar alam sekitar kepada langkah pencegahan bagi pengiraan dan pengurusan pencemaran, melalui tumpuan secara holistik dengan memperkenalkan kelestarian dan kempen 3R (kurangkan, guna semula, kitar semula) kepada peniagaan dan pengguna. Dengan perubahan pendirian kerajaan ke arah pemuliharaan alam sekitar, industri tidak boleh lagi mengelak daripada terlibat dalam amalan kelestarian bagi operasi mereka.

Kedai barangan runcit adalah merupakan salah satu industri perkhidmatan yang terbesar di Malaysia, dan juga penyumbang utama kepada pencemaran alam sekitar di negara ini. Kesan-kesan alam sekitar daripada operasi runcit dalam industri ini termasuk penjanaan sisa pepejal, penggunaan tenaga, pencemaran air, dan pencemaran udara. Walau bagaimanapun, industri runcit berada dalam kedudukan yang unik untuk menghijaukan perkhidmatannya. Peruncit boleh melaksanakan kelestarian di sepanjang hujung hulu dan hiliran rangkaian bekalan secara berkesan. Ianya secara meluas diiktiraf sebagai ejen-perubahan bagi memperkenalkan kelestarian ke dalam rangkaian bekalan. Kedai-kedai runcit boleh memainkan peranan dalam mengurangkan pembaziran makanan, melaksanakan amalan pengurusan sisa yang lebih baik, mempromosi produk-produk hijau, serta memperkenalkan lebih amalan kelestarian ke dalam rangkaian bekalan makanan. Dengan itu, adalah penting untuk memahami kelestarian seperti yang diamalkan dalam industri.

Walau bagaimanapun, industri runcit Malaysia adalah sangat berpecah-belah, dengan 56% adalah kedai runcit, pasar raya besar dan pasar raya adalah 43%, dan 1% adalah kedai serbaneka. Pemecahan ini menyukarkan pemantauan kelestarian dan kritikal bagi pembangunan lestari dalam industri. Ianya adalah penting untuk mengenalpasti amalan runcit yang lestari, dan untuk menilai tahap kelestarian berdasarkan pelaksanaannya. Secara khusus, pelaksanaan logistik terbalik dalam industri runcit Malaysia perlu dinilai, antara kebaikan adalah kerana sumbangannya terhadap pengurusan sisa. Oleh kerana keputusan perniagaan mengenai perubahan selalunya bergantung kepada faedah nilai ditambah, penilaian sumbangan kelestarian prestasi firma adalah penting untuk pembangunan lestari. Satu kajian mengenai pengantaraan adalah penting untuk mengkaji kesan pembolehubah berselang pelaksanaan kelestarian. Pengesanan kesan-kesan sebegini boleh digunakan oleh badan-badan kawal selia bagi pembangunan dasar dan penilaian.

Dengan kepadatan kedai-kedai runcit (56%), diikuti dengan pengagihan yang meluas di seluruh negara menjadikannya industri ini sebagai ejen kritikal kepada pembangunan lestari. Begitu juga, tumpuan kerajaan kepada Program Transformasi Kedai Runcit atau Small Retailer Transformation Program (TUKAR) membuatkan maklumat mengenai kelestarian kedai-kedai runcit adalah kritikal. Walau bagaimanapun, kajian ke atas kelestarian yang memberi tumpuan menyeluruh terhadap format peruncitan dalam industri runcit di Malaysia adalah terhad. Disebabkan oleh industri runcit barangan runcit berpecah-belah, maklumat mengenai kelestarian seperti yang diamalkan oleh semua format runcit utama diperlukan untuk meringkaskan amalan kelestarian dalam industri runcit.

Penyelidikan ini telah dijalankan untuk mengkaji kelestarian seperti yang dilaksanakan dalam industri ini. Pendekatan pasca-positivis dalam kajian itu telah diterima pakai, mengambil Teori Pihak Berkepentingan untuk mengesahkan ramalan pelaksanaan kelestarian di kedai-kedai. Tahap kelestarian kesemua format peruncitan dikategorikan menggunakan Sistem Kedudukan Tahap Tiga. Statistik deskriptif digunakan untuk mengkategorikan tahap kelestarian, keseimbangan peruncit terhadap alam sekitar, dan logistik terbalik di kedai-kedai. Pengaruh terhadap pelaksanaan kelestarian telah dikenalpasti merangkumi tekanan pihak berkepentingan, tanggungjawab sosial korporat (CSR), ekonomi, dan faktor-faktor alam sekitar, dan halangan yang menghalang kelestarian dalam perniagaan. Kedudukan min, analisis faktor pengesanan (CFA), dan pengantaraan telah digunakan untuk menilai dan mentafsir kesemua kemungkinan kesan faktor-faktor eko-mesra alam dan pelaksanaan logistik terbalik di kedai-kedai runcit. Sumbangan eko-mesra alam dan logistik terbalik bagi mengukuhkan prestasi firma dinilai untuk implikasi pengurusan menggunakan Analisis Matriks Kepentingan Prestasi (IPMA). Hubungan bersekutu antara ciri-ciri firmografik kedai-kedai runcit dan kelestarian yang dilaksanakan oleh kesemua format telah diuji menggunakan analisis khi kuasa dua. Analisis pengantaraan menggunakan kaedah pengikatan but telah digunakan untuk menganggarkan kesan campur tangan pembolehubah untuk pelaksanaan logistik terbalik dan prestasi firma. Analisis kandungan digunakan untuk mengesahkan faktor yang didapati signifikan kepada pelaksanaan kelestarian di kedai-kedai.

Kajian melalui temuramah telah dilaksanakan dengan responden seramai 375 menggunakan soal selidik berstruktur untuk memahami kelestarian dalam industri. Kedai-kedai responden termasuk wakil-wakil dari empat format runcit utama, iaitu

kedai runcit, pasar raya, pasar raya besar, dan kedai serbaneka. Kedai-kedai mengenalpasti isu-isu pengurusan sisa, krisis air, dan krisis tenaga telah mempengaruhi operasi kedai mereka. Kebanyakan kedai-kedai didapati tidak biasa dengan Akta Pengurusan Sisa Pepejal dan Pembersihan Awam 2007 (SWPCMA 2007) Kerajaan Malaysia, walaupun Kempen 3R adalah biasa bagi mereka. Polisi terima produk semula telah diterima pakai oleh majoriti peruncit, terutamanya seperti arahan pemulangan oleh pembekal.

Kajian ini menunjukkan bahawa Tahap 1 amalan eko-mesra alam terutamanya seperti mengurangkan aktiviti penggunaan tenaga dan penjimatan tenaga dilaksanakan oleh kesemua format runcit. Sokongan amalan-amalan hijau oleh pembekal tempatan, penyelidikan pengguna hijau, dan promosi produk-produk hijau di kedai-kedai mendapati ianya sangat diamalkan oleh pasar raya besar, dan pasar raya. Pasar raya besar adalah pengamal terbaik amalan kelestarian Tahap 3, diikuti oleh kedai serbaneka.

Ciri-ciri firmografik seperti lokasi kedai, tahun operasi, dan jualan tahunan didapati mempengaruhi pelaksanaan kelestarian dalam industri runcit. Peramal CSR dan halangan kepada pelaksanaan secara ketara didapati mempengaruhi pelaksanaan amalan kelestarian Tahap 1 kedai-kedai runcit. Peramal CSR, halangan, tekanan pihak berkepentingan, dan pelaksanaan amalan kelestarian Tahap 1 didapati mempengaruhi secara ketara pelaksanaan amalan logistik terbalik oleh kedai-kedai runcit. Pelaksanaan amalan Tahap 1 didapati lebih menyumbang kepada prestasi firma. Walau bagaimanapun, pelaksanaan amalan logistik terbalik didapati mengurangkan kesan amalan Tahap 1 kepada prestasi firma. Ini disebabkan oleh komitmen sumber yang diperlukan untuk melaksanakan operasi logistik terbalik di hujung rantai bekalan runcit. Oleh kerana amalan Tahap 1 didapati penting kepada prestasi firma, pelaksanaan logistik terbalik boleh dianggap sebagai penghalang. Walaubagaimanapun, didapati logistik terbalik memberi sumbangan besar kepada prestasi operasi firma. Begitu juga, pelaksanaan amalan Tahap 1 telah didapati mengurangkan tekanan ke atas peruncit untuk melaksanakan kelestarian. Ini mungkin disebabkan oleh kebiasaan pihak berkepentingan terhadap amalan Tahap 1 dan implikasi kepada logistik terbalik. Oleh yang demikian, untuk memastikan pelaksanaan logistik terbalik, kerajaan perlu membangunkan dasar-dasar tertentu untuk pelaksanaan logistik terbalik oleh kedai-kedai runcit.

Analisis kandungan mendedahkan kerajaan, pesaing, tekanan NGO, dan halangan amat ketara mempengaruhi pelaksanaan kelestarian oleh kedai runcit. Kedai runcit tertumpu kepada amalan pesaing untuk mengekalkan pasaran mereka, untuk memenuhi keperluan pengguna, dan kelestarian sebagai pakar sementara untuk diterima pakai. Kerajaan memainkan peranan yang paling penting dalam mempengaruhi pelaksanaan amalan logistik terbalik di kedai runcit. Oleh yang demikian, kerajaan boleh menghijaukan kedai runcit dengan dasar-dasar yang lebih ketat dan insentif ekonomi.

Kajian ini menjalankan penilaian terperinci kelestarian oleh seluruh format runcit. Semua interaksi yang mungkin diantara pembolehubah berinteraksi membeikan kefahaman tentang hubungan antara pembolehubah yang berselang dan pengaruh mereka ke atas kelestarian. Pemerhatian ini boleh digunakan oleh badan-badan kawal selia dan pengurusan atasan untuk pembangunan dasar. Sistem Kedudukan Tahap 3 yang digunakan dalam kajian ini boleh digunakan oleh agensi-agensi lain untuk

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This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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LIST OF ABBREVIATIONS

3R	Reduce, Reuse, Recycle
ANP	Analytical Network Process
ASEAN	Association of South-East Asian Nations
ASR	Asian Sustainability Rating
AVE	Average Variance Extracted
BC	Bias Corrected
CETDEM	Centre of Environment, Technology and Development Malaysia
CFA	Confirmatory Factor Analysis
CI	Confidence Interval
CRC	Centralized Returns Centre
CRM	Customer Relationship Management
CSL	Competition, Standards, and Liberalization
CSR	Corporate Social Responsibility
CTP	Community Transformation Programme
CVR	Content Validity Ratio
DASN	National Environmental Policy
DC	Distribution Centre
DJSI	Dow Jones Sustainability Index
DOE	Department of Environment
DOSM	Department of Statistics, Malaysia
ECO	Economic
EFA	Exploratory Factor Analysis
ENVR.	Environment
EPP	Entry Point Projects
ESG	Economic, Social, and Governance
ETP	Economic Transformation Program
FAO	Food and Agriculture Organization
FTP	Fiscal Transformation Programme
HCD	Human Capita Development
GBI	Global Building Index
GDP	Gross Domestic Product
GLBE	Government Lead by Example
GNI	Gross National Income
GRI	Global Reporting Initiative
GOVT	Government
GRiB	Reducing Government's Role in Business
GTFS	Green Technology Financing Scheme
GTM	Green Technology Malaysia
GTP	Government Transformation Programme
GTTIF	Green Technology Tax Incentive Framework
IPMA	Importance-Performance Matrix Analysis
ISO	International Organization for Standardization
JIT	Just In Time
KETTHA	Ministry of Energy, Green Technology, and Water
KLD	Kinder, Lydenberg, and Domini
KMO	Kasier-Meyer-Olkin Measure of Samplig Adequacy
KR	Kedai Raykat
LCCF	Low Carbon City Framework

MDTCC	Ministry of Domestic Trade, Cooperative and Consumerism
MGTC	Malaysian Green Technology Corporation
MIDA	Malaysian Investment Development Authority
MIGHT	Malaysian Industry-Government Group for High Technology
MP	Malaysian Plan
MSIC	Malaysian Standard Industrial Classification
ND	Narrowing Disparity
NEM	New Economic Model
NGO	Non-Governmental Organizations
NKEA	National Key Economic Areas
NSDC	National SME Development Council
NSS	Non-Specialised Retail Trade in Store
NTP	National Transformation Programme
OLS	Original Least Square
PFR	Public Finance Reform
PLS	Partial Least Square
PLS-SEM	Partial Least Square Structural Equation Modelling
POP	Pop-Up
PSD	Public Service Delivery
PTM	Pusat Tenaga Malaysia
PTP	Political Transformation Programme
Q ₁	First Quarter
Q ₂	Second Quarter
Q ₃	Third Quarter
RBV	Resource-Based View
RL	Reverse Logistics
SAVE	Energy Efficiency
SC	Supply Chain
SCM	Supply Chain Management
SECH	Social, Ethical, Cultural, and Health
SEM	Structural Equation Modelling
SME	Small and Medium Enterprises
SPM	Sustainability Performance Measurement
SPSS	Statistical Package for Social Sciences
SRI	Strategic Reform Initiatives
SSC	Sustainable Supply Chain
SSCM	Sustainable Supply Chain Management
STP	Social Transformation Programme
SWPCMA	Solid Waste and Public Cleansing Management Act
TBL	Triple Bottom Line
TCOS	Technological, Commercial, Organizational, and Social
TFP	Total Factor Productivity
TUKAR	Program Transformasi Kedai Runcit
UHLG	Ministry of Urban Wellbeing, Housing, and Local Government
UN	United Nations
UNEP	United Nations Environmental Programme
VAF	Variance Accounted For
VIF	Variance Inflation Factor
WCED	World Commission for Environment and Development

CHAPTER 1

INTRODUCTION

This chapter of the thesis discusses the role of retailers as change agents to sustainable development in an industry. The chapter consists of background discussions on the role of retailers for sustainability, problem statement, research questions, research objectives, significance of the study, and organization of the thesis (Figure 1.1).

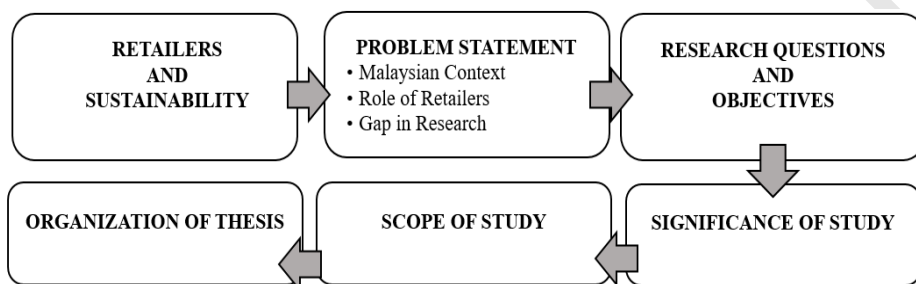


Figure 1.1: Flow Chart on Contents of Chapter 1

1.1 Retailers and Sustainability

Sustainable Development (SD) is defined as “a development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs” (World Commission for Environment and Development [WCED], 1987, p. 43). The concern on environmental preservation and economic stability led the nations to unite for SD across borders. Over the years, this intense focus on SD by governments led to the development of sustainability regulations and market restrictions on business operations. The resultant corporate sustainability is a customized version of SD, with focus on business operations. Corporate sustainability is defined as “the meeting of needs of the current stakeholders, without affecting the interests of potential future stakeholders to the business” (Dyllick & Hockerts, 2002, p.131). In order to do this, the companies have to maintain their economic, social, and environmental capital base without lagging behind on the sustainability aspect for political reasons.

Corporate sustainability involves serious decision-making and provides a balance between environment commitment and interest of the company. It is not a short-term application, and responsible decisions made might lead to a successful green company in the future. However, adapting sustainability into existing business operations is one of the main hurdles to its acceptance by companies. The role of retailers as change-agents starts here.

Retailers’ influence on the upstream and downstream supply chain is well recognized, making them the optimal initiators for sustainability in any industry (Davis & Konisky, 2000). Retailers influence environment sustainability directly as well as indirectly. The

direct effects of their operations include channel selection, operations management, and resource control. The indirect influences can be upstream or downstream (Davies & Konisky, 2000). The upstream lane sees retailers in a strong position to influence the green supply chain management. They act as the connecting link between manufacturers or producers and demand of consumers. This alone positions them to a primal role in upstream management of green practices and products by controlling demand and supply (Connor & Schiek, 1997; Iitterhus, Arnestad, & Lothe, 1999). The capability of retailers like Walmart to green their supply chain through selection of green suppliers and sustainable purchasing decisions supports their role in creating a sustainable supply chain (Brammer, Hojmosse, & Millington, 2011; Green, Morton, & New, 1996). They can also address food safety and animal welfare by implementing management guidelines, as Tesco did in its meat supply chains (Lindgreen & Hingley, 2003).

The downstream influences of retailers is on their consumers. A study done on the effect of green image of retailers on shopping value and store loyalty has found that the green image of a store significantly influences its shopping value. Store loyalty also has a mediating effect on shopping value and green image (Yusof, Musa, & Rahman, 2011). Another study done on environment conscious consumption has shown retailers to have a stronger influence than their peers in guiding consumers towards green purchasing (Tsarenko, Ferraro, Sands, & McLeod, 2013). Consumer preference studies showed that environmental impact factor of a product is not the main selling point for majority of the consumers (95% of consumers). This is the result of lack of awareness about the environmental implications of each product. According to Tsarenko et al. (2013) this is where the retailers can play an important role in educating consumers on green retailing and purchasing. The role of retailers to reverse this situation, especially in case of organic and green foods is immense (Speer, 1997).

The opportunity for retailers to influence consumer purchase decisions directly through Point-of-Purchase (POP) materials have been found effective (Reicks, Splett, & Fishman, 1997). Besides, as retailers deal with the consumers directly, they are often affected by product crises related to food safety and animal welfare issues (Wiese & Toporowski, 2013). This is true in case of the food industry, wherein sustainability can be effectively branded and promoted by grocery retailers. Their ability to create a multiplier effect on the huge number of suppliers under them helps in greening the upstream food supply chain, while their high rate of consumer footfall supports spread of mass marketing initiatives. It is thereby opportune for nations to utilize retailers to spread the message of SD to their society.

1.2 Problem Statement

Malaysian economy is the 29th largest economy in the world, with GDP worth US\$492.4 billion and per capita income of US\$16,922 (Market Watch, 2012). With policies and programs in place to develop the economy, Malaysia is well on its route to become a developed country by 2020. However, rapid industrialization and investments introduced a basketful of new environmental pollution woes with it. Water pollution, air pollution, noise pollution, deforestation, pollution of inland and marine waters, soil and coastal erosion, overfishing, coral reef destruction, and problems in waste disposal

are some of the many environmental problems plaguing the nation (Hezri & Hasan, 2006).

Solid waste mismanagement is one of the major environmental problems of immediate concern to the Malaysian government. Waste management problems arise from overflowing capacity of landfills, limited recycling centers, and weak policies on waste management. Statistics show daily solid waste production of 25,000 tons in Malaysia with expected rise to 30,000 tons by 2020. Majority of the solid wastes comprise food wastes (45%), plastics (24%), and paper (7%) (Sreenivasan, Govindan, Chinnasami, & Kadiresu, 2012). Increasing population and rapid development along with the fact that less than 5% of the actual waste gets recycled further aggravates the situation. Therefore, there is an urgent need to control the waste flow from industries, considering that majority of the industrial solid wastes go to landfills. However, governmental policies on waste management and recycling in industries are still in the infancy stage. One of the most common ways of waste disposal followed by industries is incineration. The burning of solid waste only adds to air pollution. Understanding the situation, the Malaysian government is bent on perfecting its environmental laws and regulations to cover all areas for penalty.

The government has taken up a holistic approach to manage environmental problems, with the establishment of departments like the Department of Environment (DOE), Ministry of Energy, Green Technology and Water (KeTTHA) to monitor progress on environmental conservation, policies like Solid Waste and Public Cleansing Management Act (SWPCMA) and National Policy on Environment-Green Strategy, programs like Green Technology Foresight 2030, Green Building Index (GBI) for corporate sustainability, Malaysian Investment Development Authority (MIDA) for tax incentives to green companies, Green Technology Financing Scheme to finance green initiatives, No Plastic Bag and 3R (reduce, reuse, recycle) campaigns for waste management, and compulsory environmental education in schools. Mini thermal treatment plants in Pulau Pangkor, Pulau Langkawi, Pulau Tioman and Cameron Highlands and mini incinerators in Kuala Lumpur, Johor and Melaka have been initiated for waste control and management.

The focus is shifting from solely environmental policies to preventive measures for pollution control. With the government redefining its role in environment conservation, industries can no longer be mere observers. Due to their large presence and contribution to pollution, industries should play a major role in curbing the spread of pollution in the nation.

The grocery retail industry is one of the largest and fastest growing industries in Malaysia. It is also one of the major contributors to environmental pollution in the nation. The retail industry contributes heavily to the solid waste management problem, through its food waste, paper and plastic wastes among others. The food wastes also contribute to generation of greenhouse gases in the nation. The grocery retail industry generates two types of solid wastes, particularly food waste and packaging materials. The food wastes comprise food product returns by consumers and unsold food products in shelves. The types of packaging wastes include left-over corrugated boxes, cardboard boxes, paper, plastics, steel, glass, and aluminum. The other environmental effects include energy use, water pollution, and air pollution. In grocery retail, significant energy consumption goes towards refrigeration, and lighting. The energy

intensity required for this industry necessitates the establishment of energy conservation policies in stores. The contribution of grocery retail activities to water pollution is minimal. However, the logistics and transportation activities do contribute to air pollution. Along with control on carbon emission, food waste management is also recommended to reduce the generation of greenhouse gases.

With the Malaysian government's extreme focus on SD of the nation, it is imperative to understand sustainability as practiced by grocery retailers. Information on the current situation of sustainability could help the government initiate measures to ensure complete greening of this industry. Also, grocery retailers could aid the government in the role of change-agents for sustainability along the food supply chain. The presence of such a competent partner would certainly lessen the burden on government to fulfil the dream of green Malaysia.

However, the grocery retail industry of Malaysia is heavily fragmented with 56% provision stores, 43% hypermarkets and supermarkets, and 1% convenience stores (Pin & Suresh, 2013). The presence of multiple formats makes monitoring sustainability in this industry difficult. Nevertheless, several questions arise on the current level of sustainability implementation across formats, the role of firmographic characteristics in influencing sustainability implementation, hindrances and motivators to retailers to implement sustainability, benefits they attained from its implementation, and possibility of eco-friendly practices influencing sustainability in retail stores. Specifically, the implementation of reverse logistics in the Malaysian industry needs to be evaluated, due to its contribution to waste management among other benefits.

Since business decisions on change often depends on value added benefits, the evaluation of contribution of sustainability to firm performance is critical for SD. However, such studies on sustainability, focused across retail formats in the Malaysian grocery retail industry are limited. This gap in literature will not only prevent a complete understanding of sustainability as practiced in the industry, but also prevent the development of policies and programs targeted across formats.

Provision store is the most important format in the Malaysian industry, due to its industrial distribution (56%) and wide spread across the nation. Also, the government is currently focused on *Program Transformasi Kedai Runcit* or Small Retailer Transformation Program (TUKAR) for provision stores in the nation. The TUKAR program could be used to initiate sustainability practices into provision store operations. Any information on motivators to sustainability in provision stores could help the government a long way to ensure sustainable development in this industry. Retailers only tend to adopt practices that add tangible or intangible value to their businesses. It is up to the government to communicate on the tangible and intangible values to businesses from sustainability implementation, and influence retailers to voluntarily accept sustainability.

1.3 Research Questions

This study addresses four specific research questions. The questions focus on understanding the level of sustainability as implemented across the grocery retail formats, and the predictors to its implementation and firm performance.

1. What is the current level of sustainability practiced across retail formats?
2. Do firmographic characteristics influence the implementation of sustainability in a store?
3. What factors influence grocery retailers in implementing sustainability practices?
4. Do retail formats achieve significant firm performance by sustainability implementation?
5. Can eco-friendly practices¹ mediate on reverse logistics in retail stores?
6. Does reverse logistics mediate on firm performance due to sustainability?
7. Are factors to sustainability implementation in provision stores different from the industry?

1.4 Research Objectives

The general objective of this study is to examine sustainability as practiced by the grocery retail industry of Malaysia, with special focus on reverse logistics. The specific objectives of this study are:

1. To study the effect of firmographic characteristics on sustainability implementation in retail stores.
2. To identify the factors to sustainability implementation in the grocery retail industry.
3. To estimate the contribution of sustainability implementation to firm performance.
4. To evaluate eco-friendly practices for mediation effect on reverse logistics in retail stores.
5. To examine for mediation effect of reverse logistics on firm performance in retail stores.
6. To verify the factors to sustainability implementation in provision stores.

1.5 Significance of the Study

Malaysia is striving to be a green nation. The policies and programs developed to initiate sustainable development across industries necessitates an evaluation of current situation. However, fragmentation of the grocery retail industry makes an evaluation of the industry and comparative studies difficult. Nevertheless, this research aims to provide a conclusive study on the current level of sustainability across the formats, highlighting on the waste management practice of reverse logistics. An insight into factors that motivate the industry to adopt sustainability, especially the provision stores could be useful for initiating sustainable development in this industry. Considering the relevance of this industry to the national economy, and its contribution to environmental problems, the observations from this study could be used to green the retail operations, without compromising on firm performance of the stores. The regulatory and authority bodies could use this information to motivate, evaluate, and support sustainability in the retail industry. In the long run, the retailers could turn partners to support the government fulfil the dream of green Malaysia.

¹ Eco-friendly practices come under Tier 1 classification of Sustainability. This term will be explained further in Chapter 3

1.6 Scope of the Study

The scope of the study will cover the implementation of sustainability practices as implemented across retail formats in Klang Valley. Klang Valley was selected due to the large number of retail stores and revenue output from the area. The level of sustainability implementation will be ranked into three tiers based on the Three Tiers ranking system. The study will also try to understand the reverse logistic practices in terms of its returns and waste management across formats. The reasons behind the implementation of sustainability practices for the industry will be studied, with special focus on reverse logistics implementation by stores. Provision stores will be exclusively evaluated and verified for reasons behind sustainability implementation. The possibility of mediation effect between the tier practices will also be studied, for its effect on the firm performance.

1.7 Organization of the Thesis

The study is organized in the following order. In Chapter 1, the essential background information on sustainability and the study are given. Chapter 2 gives an introduction into the grocery retail industry and a contextual summary on environmental policies and programs in Malaysia. Chapter 3 summarizes previous studies on sustainability indicators, reverse logistics, and discusses their effect on firm performance. Chapter 4 explains the philosophy and research design behind the study, development of the conceptual framework, justifies the selection of variables and hypotheses construction, sampling and data collection. The process of questionnaire development and results of pre-testing and pilot testing are also summarized. Chapter 5 provides the results of the study. Chapter 6 gives a conclusion of the study by summarizing the results, limitations, and recommendations of the study.

1.8 Summary

This chapter introduced corporate sustainability, and explained on the role of retailers as change-agents to sustainability implementation. The problems and gaps identified in the area of retail sustainability in Malaysia have also been summarized above. The significance of the study and scope has been given, highlighting the research questions and objectives to be achieved.

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